

CAR LIFE ROAD TEST



PLYMOUTH SATELLITE

Jumpin' Gemini—the 383 V-8 Puts The Satellite into Supercar Orbit!

TESTING A Plymouth Satellite hard-top equipped with a 383-cu. in. V-8, TorqueFlite automatic transmission and a 2.93:1 axle ratio, *CAR LIFE* said (Jan. '65 issue) that the car needed both a 4-speed manual transmission and a 3.23:1 axle for optimum performance. Now, little more than a year later, CL has had an opportunity to sample just such a combination. As was predicted, performance is notably superior to that of the

earlier under-geared automatic version.

The change in gearing is worth 0.6 sec. and 8 mph in the quarter-mile acceleration measurement, but more importantly, lowers the 30-70 mph passing time by 1.8 sec.—a good safety factor. Although the diffident driver will always prefer the automatic transmission, there's no doubt that the all-synchromesh 4-speed manual offers the competent, knowledgeable driver far better usage of his car's abilities.

And that, of course, is the reason why 4-speeds are both popular with and purchased by the youthful and enthusiastic sort of driver.

The Plymouth Belvedere and its snazzy Satellite offspring tend to be somewhat underrated by the performance advocates, probably because of the mediocre output of the lower-powered versions. However, in recent months, CL observers have noted an apparent increase in the number of ►



SHIFT lever sprouts from console and tachometer is mounted in unreadable position. Embossed vinyl upholsters seats, doors.



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youthful "Mayflower" pilots, so perhaps the hotter variations of Plymouth are at last gaining their rightful place in the "Supercar" spectrum (CL, May '65).

Entrance to that particular segment of the marketplace requires a large quantity of available horsepower. This the Belvedere-Satellite can offer in two strengths—more-than-sufficient and who-needs-that-much? The wedge-head 383-cu. in. V-8 falls into the first group, the hemispherical combustion chamber "Street Hemi" 426-cu. in. V-8 belongs to the second category. A secondary requirement for Supercar status is that the car have relatively low weight for all that power to horse around. At 3780 lb. curb weight, the Satellite tested certainly was no lightweight, although at test weight it still packed only 12.9 lb. per rated horsepower—good enough to stay competitive with GTO, 442, Gran Sport, 396 Chevelle, Fairlane GTA (see Page 76) and Dodge Coronet. Most other models in Plymouth's Belvedere line are lower in weight, so the really ambitious enthusiast could save at least 200 lb. by ordering a "stripped" 2-door sedan.

The 383-cu. in. V-8 and 4-speed op-

tion adds 190 lb. to the basic weight of a Belvedere V-8 (standard 273-cu. in. engine). However, the other alternative, the 426 Street Hemi, is a 403-lb. option, of which 340 lb. rest on the front wheels. Thus some of the Street Hemi's advantages may be offset by extra weight where it is least needed. At 54.5% front and 45.5% rear, the 383-equipped Satellite has a reasonable (for this type of car) weight distribution. However, if it had a 426, the distribution would skid to 56/44.

CAR LIFE has long advocated the Chrysler Corporation's 383-cu. in. V-8 as the best combination bore, stroke, compression and power output for the larger Plymouths, Dodges and Chryslers. The weight factor is another reason it belongs high on the list of considerations. The engine scales around 650 lb. in this trim, which is neither dreadfully heavy nor very light for a modern big-inch V-8. Its rated horsepower of 325 at 4800 rpm is an honest appraisal of its ability—and it performs with enough enthusiasm to justify its extra cost over the lower-powered V-8s.

Key to achieving satisfactory performance with this engine—at least

enough to satisfy the enthusiastic driver—lies in specifying an adequate axle ratio. As noted in the previous Satellite test, a 2.93:1 ratio is just too "long" for this engine. It gave 27.3 mph per 1000 rpm, or 2200 revs per mile, which meant that at 70 mph, the engine was loafing along at around 2500 rpm, not even at the top of its torque peak. The 3.23:1 axle in the '66 test car lets the engine turn up to 2800 rpm at 70, which at least is at the torque peak. Better still for performance, we feel, might be the 3.55:1 axle which would give the Satellite 3100 rpm at 70 mph, or 22.5 mph/1000 rpm.

The Satellite, of course, is a top-of-the-line Belvedere—the flossiest of Plymouth's middle series. In dimension and cost the Belvedere fits halfway between Valiant and Fury, directly in what we call the "standard" (but what others call the intermediate) market. As such it competes head-on with its sister-ship Dodge Coronet, GM's Buick Special, Chevrolet Chevelle, Oldsmobile F-85 and Pontiac Tempest, Ford's Fairlane and Mercury Comet, and American Motors' Classic, all of which have equally flossy, top-of-the-line models. As these cars account for one-fourth of total sales, the competition is terrific.

What does the performance-minded buyer get for his money? In the case

of the Satellite, he gets a soundly designed unit-body chassis, a husky and hot-running medium large V-8, a faultless 4-speed transmission and a 5-year power train warranty. He gets a car that won't win any beauty contests, but which can prove its worth in more dramatic fashion at the nearest stoplight. In short, the Satellite is fully the equal of its touted competitors, in everything but the styling department.

Someone once said that the most practical shape for an automobile was the box. At Plymouth, this must be regarded as styling dictum; the two lines of larger cars are about as boxlike as an automobile can get. The Satellite comes out particularly rectangular, what with its squared-off front and rear ends, a hood-to-deck plane seemingly extending unbroken fore to aft, and its angularly braced roofline. The entire effect is as if the car was created by a milling machine which could only make right-angle cuts.

Then, too, the current Plymouths rate mention for superfluous adornment; bits and bangles of chromium and bright metal trim are slathered all about the surfaces. If the basic form of the car is at least ascetically pure,

the ornamentation is garish in excess. The top lines of the fenders are outlined in bright metal moldings; the bottom (rocker panels) also are delineated. There's a swatch across the *derriere* which matches up with equally belabored taillights. The frontal aspect is one of confusion, as round shapes are interjected among square or oblong ones. Grille cutouts inboard of the headlights house turn signal/parking lamps which remain alight whenever headlights are on, to give a yellow-eyed recognition to the car at night.

Someone else said not to judge a gift by its wrappings, and in the case of the Satellite, it's happily true. Underneath that tinsel trim is a mechanical heart of pure gold. Beauty, in the Plymouth, has to be more than skin deep.

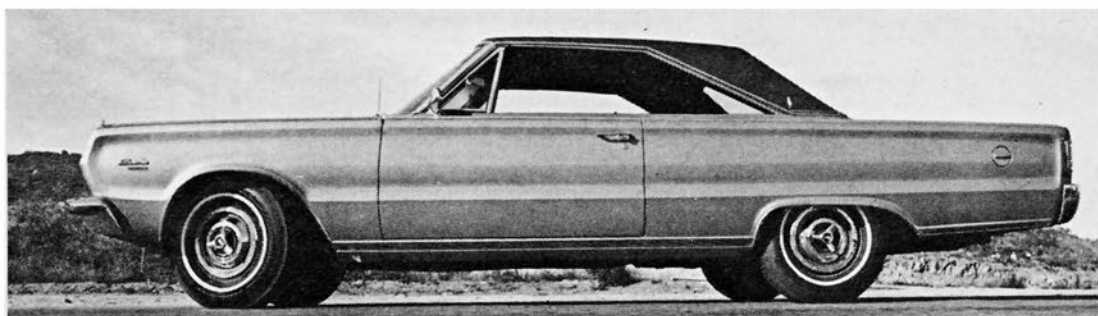
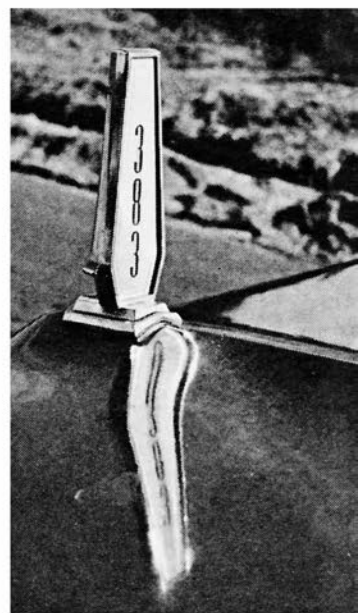
The 383-cu. in. engine, as we've said, represents one of the Chrysler's happiest and most durable designs. The 4-speed transmission, introduced two years ago, or the nicely-responsive TorqueFlite are virtually indestructible, even in dragstrip competition. The drive-train can take anything except running without lubricating oil. But what about the rest of the car?

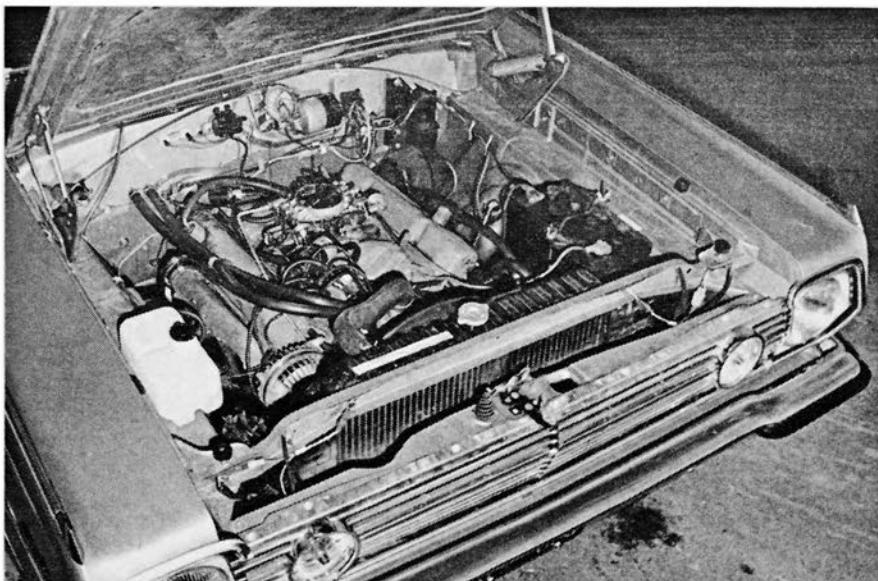
Body construction is unit; that is,

body and frame are all in one piece. Although outside sheetmetal was considerably reshaped for the '66 model, the same type of construction was retained. Thus Plymouths should maintain their reputation as solid-feeling, tautly-constructed automobiles. CL's testers prefer unit bodies for another reason: Better driving capabilities. With unit bodies, suspensions have a firmer platform from which to operate since the body or frame doesn't have to flex to help soak up wheel shocks. Wheels tend to go where they are pointed, the car remains more stable—or at least more predictable—on adverse road conditions and cornering doesn't produce any untoward actions. The driver doesn't get that disconnected-from-the-wheels feeling. True, unit bodies tend to rumble slightly more with wheel noise, but CL feels this is a small price for the superior roadability.

The suspensions themselves are classic in design, stemming back to 1957 when the Chrysler Corporation went to torsion bars for springs for its independent front suspension. As it was then, rear suspension is pure Hotchkiss drive with parallel, longitu-

CHAN BUSH PHOTOS





PLYMOUTH 383-cu. in. engine has just enough space around it for easy tuning accessibility, is big enough to give the Satellite "Supercar" status and action.

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dinal leaf springs. At the front, a 0.84-in. diameter stabilizer bar is optional, and would be helpful to the appreciative driver. Spring and wheel rates for

the Satellite are the same as for other Plymouths, which tend toward the soft rather than the firm side.

The test Satellite missed the anti-roll

stabilizer option and could have used it. The ride was soft, but not to the point of being mushy. Control was good, but would have been better had the body roll in cornering been less. A set of heavy-duty shock absorbers might have alleviated this, too. In all, though, the general handling and stability was above average for the class.

The braking capabilities were about average. Although Plymouth makes disc brakes available as an option for either the lighter S-package Barracudas or the heavier Furys, it has yet to offer them with the Belvedere-size cars, where they are just as much needed. Plymouth does offer a larger, fatter, drum brake (11 x 3 in. front, 11 x 2.5 in. rear; swept area 380 sq. in.) which does a good job for this car, but as these are manually adjusted—which greatly benefits drag racing enthusiasts—they are not generally specified. Instead, the 10 x 2.5 in. (front and rear; swept area 314.2 sq. in.) standard brakes equipped the test car. They were not power boosted, but still were strong enough to record 23 ft./sec./sec. deceleration on the first crash stop from 80 mph. On the repeat stop, fade lowered their effectiveness to 19 ft./sec./sec. and subsequent stops were marked by strongly uneven

1966 PLYMOUTH SATELLITE HARDTOP



DIMENSIONS

Wheelbase, in.....	116.0
Track, f/r, in.....	59.5/58.5
Overall length, in.....	200.5
width.....	75.5
height.....	53.2
Front seat hip room, in.....	2 x 22.0
shoulder room.....	58.0
head room.....	37.8
pedal-seatback, max.....	50.5
Rear seat hip room, in.....	60.6
shoulder room.....	58.0
leg room.....	34.3
head room.....	37.1
Door opening width, in.....	43.1
Floor to ground height, in.....	12.8
Ground clearance, in.....	6.0

PRICES

List, fob factory.....	\$2695
Equipped as tested.....	3646
Options included: 383/325 V-8, 4-speed trans., vinyl roof, 8.25-14 wsw tires, Sure-Grip diff., radio, power steering, tachometer, clock, bumper guards, outside mirror, tinted glass, power windows.	

CAPACITIES

No. of passengers.....	5
Luggage space, cu. ft.....	17.3
Fuel tank, gal.....	19.0
Crankcase, qt.....	4.0
Transmission/diff., pt.....	9.0/4.0
Radiator coolant, qt.....	17.0

CHASSIS/SUSPENSION

Frame type.....	unit
Front suspension type: Independent by short and long upper and lower control arms, torsion bar springs, tubular shock absorbers.	
ride rate at wheel, lb./in.....	100
anti-roll bar dia., in.....	0.84
Rear suspension type: Hotchkiss drive with parallel, longitudinal, semi-elliptic leaf springs; tubular shock absorbers.	
ride rate at wheel, lb./in.....	113
Steering system: Rack and sector gear with integral power assist; trailing, parallel idlers and equal-length tie-rods.	
gear ratio.....	15.7
overall ratio.....	19.0
turns, lock to lock.....	3.5
turning circle, ft. curb-curb.....	40.6
Curb weight, lb.....	3780
Test weight.....	4190
Weight distribution, % f/r.....	54.5/45.5

BRAKES

Type: Single-line hydraulic, self-adjusting duo-servo shoes in drums.	
Front drum, dia. x width, in.....	10 x 2.5
Rear drum, dia. x width, in.....	10 x 2.5
total swept area, sq. in.....	314.2
Power assist.....	none
line psi @ 100 lb. pedal.....	n.a.

WHEELS/TIRES

Wheel size.....	14 x 5.5K
optional size available.....	14 x 5.0K
bolt no./circle dia., in.....	5/4.5
Tire make, brand.....	Goodyear
size.....	8.25-14
recommended inflation, psi.....	24
capacity rating, total lb.....	4840

ENGINE

Type, no. cyl.....	V-8, ohv
Bore x stroke, in.....	4.25 x 3.38
Displacement, cu. in.....	383
Compression ratio.....	10.0
Rated bhp @ rpm.....	325 @ 4800
equivalent mph.....	119
Rated torque @ rpm.....	426 @ 2800
equivalent mph.....	69
Carburetion.....	1 x 4 barrel dia., pri./sec.....
valve dia., int./exh.....	2.08/1.60
lift, int./exh.....	0.425/0.437
timing, deg.....	14-62, 62-18
duration, int./exh.....	256/260
opening overlap.....	32
Exhaust system: Dual, reverse-flow mufflers	
pipe dia., exh./tail.....	2.25/1.88
Lubrication pump type.....	rotary
normal press. @ rpm.....	45 @ 2000
Electrical supply.....	alternator
ampere rating.....	n.a.
Battery, plates/amp. rating.....	78/70

DRIVE-TRAIN

Clutch type.....	Borg & Beck
dia., in.....	10.5
Transmission type: Manual 4-speed.	
Gear ratio 4th (1.00) overall.....	3.23
3rd (1.39).....	4.48
2nd (1.91).....	6.17
1st (2.66).....	8.59
1st x t.c. stall ().....	
synchronous meshing forward gears	
Shift lever location.....	console
Differential type: Hypoid with torque-bias limited slip.	
axle ratio.....	3.23

actions and still lower deceleration rates. Until Plymouth offers disc front brakes for this model, we recommend the 11-in. drum brake option for anyone who wants his Satellite to stop as well as it goes. Disc brake availability? Maybe next year.

Searching for flaws in assembly, CL's crew found little to criticize. Panels seemed to fit together well, even if not always quite zero-zero alignment; upholstery panels matched and were securely fastened; all the gadgetry worked as it should and there were no untoward thumpings and bumpings indicating loose underside members. In all, it was a tautly built car—a far cry from Plymouths of the not-too-distant past which required virtual rebuilding by the dealer before they were ready to give some measure of customer satisfaction.

Indeed, the Satellite proved quite delightful to drive under all conditions but the one where it should have been most outstanding: Dragstrip acceleration. There, a low float level in the carburetor, or weak fuel pump, prevented consecutive high rpm full-throttle quarter-mile runs. Fuel starvation at around 4800 rpm may have cost this particular Satellite a few tenths of a second on the recorded quarter-mile



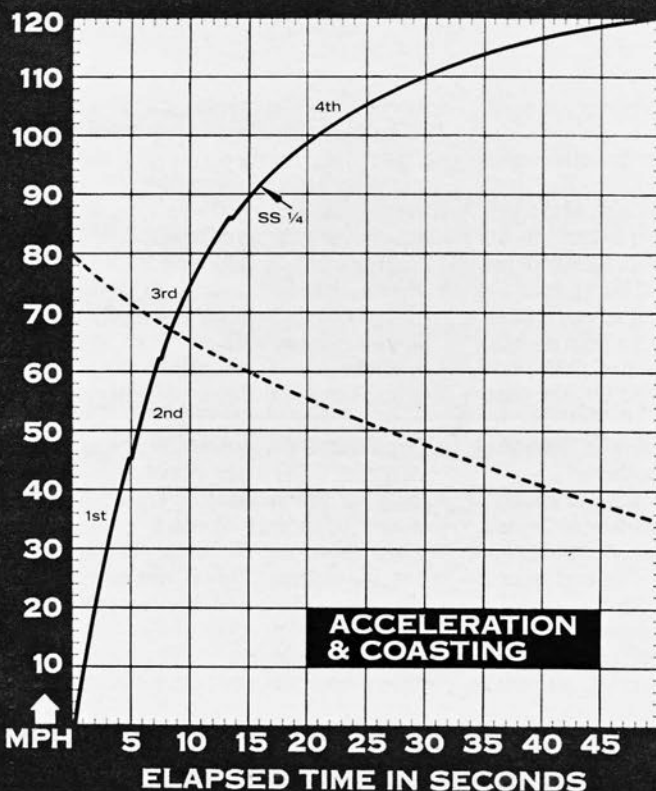
SPARE TIRE fits inside trunk well, leaving broad, nearly flat area for carrying luggage. Jack components are tied down by a spring to keep them from rattling.

—still, CL thought it a good enough figure to be representative of what an everyday, non-specially-tuned Plymouth 383 could do in terms of straight-line acceleration. No doubt fine tuning and the usual dragstrip accoutrements, plus a 3.55 or higher axle ratio, would lower that quarter-mile mark down into

the very satisfactory, very low 14s.

However, the greatest joy of the 383 Satellite is not on the dragstrip, but on the normal highways and byways. Here it does such a good, unprotesting job of rushing over hill and dale that one cannot mistake its true beauty under the rectilinear surface. ■

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CALCULATED DATA

Lb./bhp (test weight)	12.9
Cu. ft./ton mile	128
Mph/1000 rpm (high gear)	24.8
Engine revs./mile (60 mph)	2420
Piston travel, ft./mile	1370
Car Life wear index	33.2
Frontal area, sq. ft.	22.3
Box volume, cu. ft.	466

SPEEDOMETER ERROR

30 mph, actual	30.0
40 mph	39.9
50 mph	49.6
60 mph	59.5
70 mph	69.0
80 mph	78.4
90 mph	87.7

MAINTENANCE INTERVALS

Oil change, engine, miles	4000
trans./diff.	none/36,000
Oil filter change	8000
Air cleaner service, mo.	6
Chassis lubrication	36,000
Wheelbearing re-packing	as needed
Universal joint service	none
Coolant change, mo.	12

TUNE-UP DATA

Spark plugs	MoPar P-3-5P
gap, in.	0.035
Spark setting, deg./idle rpm	5/700
cent. max. adv., deg./rpm	35/4800
vac. max. adv., deg./in. Hg	29/16.5
Breaker gap, in.	0.019
cam dwell angle	32
arm tension, oz.	20
Tappet clearance, int./exh.	0/0
Fuel pump pressure, psi.	4-5.5
Radiator cap relief press., psi.	14

PERFORMANCE

Top speed (4850), mph	120
Shifts (rpm) @ mph	
3rd to 4th (4800)	86
2nd to 3rd (4800)	62
1st to 2nd (4800)	45

ACCELERATION

0-30 mph, sec.	3.0
0-40 mph	4.2
0-50 mph	5.5
0-60 mph	7.1
0-70 mph	9.1
0-80 mph	11.7
0-90 mph	15.2
0-100 mph	20.6
Standing 1/4-mile, sec.	15.6
speed at end, mph	91
Passing, 30-70 mph, sec.	6.1

BRAKING

(Maximum deceleration rate achieved from 80 mph)	
1st stop, ft./sec./sec.	23
fade evident?	no
2nd stop, ft./sec./sec.	19
fade evident?	yes

FUEL CONSUMPTION

Test conditions, mpg	13.4
Normal conditions, mpg	13-16
Cruising range, miles	247-304

GRADABILITY

4th, % grade @ mph	15 @ 70
3rd	20 @ 61
2nd	29 @ 48
1st	36 @ 39

DRAG FACTOR

Total drag @ 60 mph, lb.	140
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