

BIGGEST ENGINE YET IN A PONYCAR

440 'CUDA



440 'Cuda is a big jump up from famed 340-cid package. What has heavier, torque-ier engine done to the design?

CAR LIFE ROAD TEST

CUBIC INCHES TALK. Spurred by the war cries of the 429 Mustang, the 400 Firebird and the 396 Camaro, Plymouth has come up with a Barracuda with a 440-cid V-8, the biggest-engine production Ponycar

ever. It was bound to happen, too.

When it talks, performance fans will listen. At the same time, it's hard not to wish that the factory wasn't quite so willing to keep up with the competition, or at least would wait until the rest of the car could be kept in balance with the thumping great engine.

For the past two model years, the Barracuda has been offered with the 340-cid V-8, a mid-range engine with Supercar performance. Heeding the request of acceleration fans, in 1967

Plymouth engineers crammed the much bigger 383 V-8 into the car. To do it they sacrificed such niceties as power steering. For 1969, they caught up. With revisions to the linkage, power steering could be adapted to the 383 Barracuda.

The 440 puts the engine guys one step ahead, again. The 383 and 440 are the same basic engine. Their dimensions are almost identical. The designers said the change from 383 to 440 was easy. Maybe too easy.

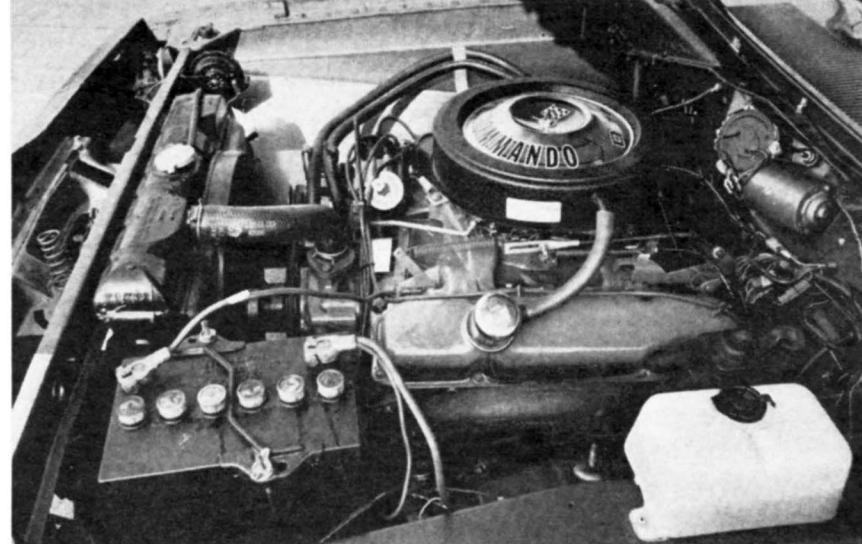
Not that the engineers botched the

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job or did sloppy work. They have the 440 tucked neatly in the 'Cuda; it looks fine there. The difficulty is that once again there is no room left for anything else. No room for power steering, which the 'Cuda 440 could use. No room for disc brakes, which the car needs badly. (The discs will fit the hubs, no problem. But because disc brakes do not energize themselves as drum brakes do, a booster is considered mandatory for discs on a heavy car. But there is no available space under the hood to put a booster.)

In choosing between the 'Cuda 340 and 'Cuda 440 then, it depends on what the buyer is looking for. If he wants acceleration and performance alone, the 440 will deliver, thank you. But for a "complete" car, one not so fast, but one that handles and stops, the obvious choice is the 340. Indeed, there are such obvious discrepancies between the superb way the 'Cuda 440 goes, and the way it does other things (like, for example, stop) that in many ways it is a disturbing automobile.

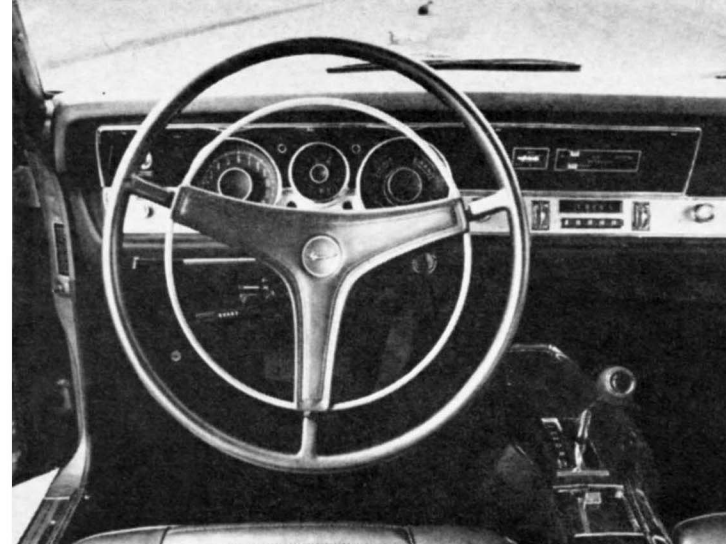


INSTALLATION of big 440-cid engine into small Barracuda compartment was easy. Fitting power steering linkage and brake booster is impossible.

CAR LIFE was disappointed in the 'Cuda 440. Even dragstrip runs with the car were not as rewarding as expected. It was 70-odd pounds lighter than the 340 CAR LIFE tested last year and the engine was, of course, 100 cid larger. When the 440 first arrived at our offices it was considered a possible contender for the quarter-mile record of 13.68 sec., held by a Hemi Charger 500 (see "The Crown Comes Back," April, page 29).

The 440 fell far short (best elapsed time was 14 sec. flat). The E.T., though, could probably have been pruned a little lower (but not much) through patient effort. Big-engine small cars such as the 'Cuda tend to be more difficult to drive on the dragstrip than big cars with big engines or little cars with little engines.

The test drivers experimented a lot while hunting for the best and quickest way to get the car off the starting line.



INTERIOR of the 'Cuda is spartan, but the instruments are easy to read. Steering wheel is too high and uncomfortable for long drives.

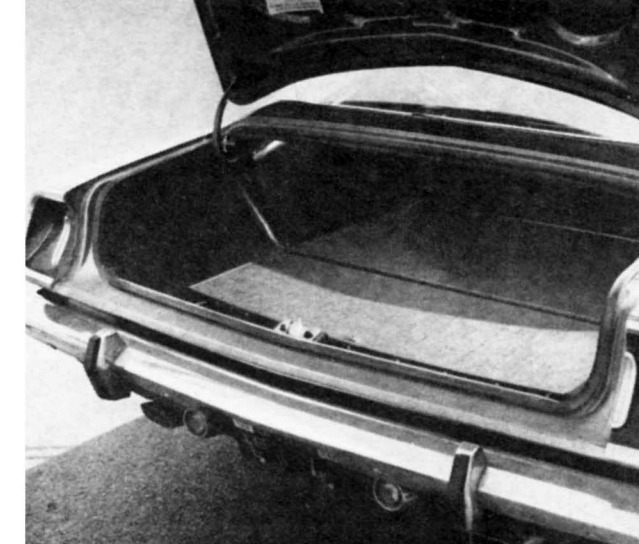
Too much throttle would smoke the tires, nothing more. The problem was to find traction. Best times were made by holding the brakes on hard, then "loading" the growling, impatient engine to 2000 rpm. At the signal to start, releasing the brakes let the car surge forward for a foot or so without putting on more throttle power. Then full power was applied, quickly, but not instantly. The 'Cuda shot forward, and the single four-barrel carburetor

kicked in willingly, especially the last two barrels.

Little help was provided by the TorqueFlite transmission. It did not shift crisply, but was mild and smooth and slow, seemingly out of place on this car. The explanation is that it has been lifted intact from the staid Plymouth sedans, just as the 440 engine was. Neither engine nor transmission have ever been thought of before as "performance" items and, in truth,

they are not. But where the engine behaves strongly in the 'Cuda, the standard transmission does not. The valves and clutches could stand some adjustment to make it shift faster.

Speak loudly and you don't get to carry a stick. A four-speed transmission? Like power steering and disc brakes, it isn't available on the 440. Engineers worried that the 'Cuda's rear end gears would not stand up to the shock of speed shifts with the



'CUDA is a performance car, yet trunk space is good, permitting stowage of several suitcases. Rear seat can be made to lay flat.

440 'CUDA



DIMENSIONS

Wheelbase, in.	108
Track, f/r, in.	58/56
Overall length, in.	193
width	70
height	53
Front seat hip room, in.	22.2
shoulder room	55
head room	37
pedal-seatback, max.	42
Rear seat hip room, in.	57
shoulder room	55
leg room	31
head room	37
Door opening width, in.	42
Trunk liftover	26

PRICES

List, FOB factory	\$2813
Equipped as tested	\$3931
Options included: 'Cuda Group:	
375/440 Engine, Torqueflite, H.D.	
Suspension, Wheels & Tires \$345;	
Sure Grip Diff, 3.55:1, \$42; Tach	
\$50.	

CAPACITIES

No. of passengers	5
Luggage space, cu. ft.	na
Fuel tank, gal.	18
Crankcase, qt.	4
Transmission/dif., pt.	18/4
Radiator coolant, qt.	16

CHASSIS/SUSPENSION

Frame type: Unitized	
Front suspension type: Short & long arms, torsion bars	
ride rate at wheel, lb./in.	110
antiroll bar dia., in.	94
Rear suspension type: Live axle, Multileaf springs	
ride rate at wheel, lb./in.	150
Steering system: Recirculating ball, unassisted	
overall ratio	29:1
turns, lock to lock	3.5
turning circle, ft. curb-curb	38
Curb weight, lb.	3405
Test weight	3740
Distribution (driver)	
% f/r	57.2/42.8

BRAKES

Type: Manual drums.	
Front drum/dia. x width, in.	10x2.25
Rear drum, dia. x width	10x1.75
total swept area, sq. in.	251

WHEELS/TIRES

Wheel rim size	14x5.5J
optional size	none
bolt no./circle dia. in.	5/4
Tires: Goodyear Wide Oval	
size	E 70-14

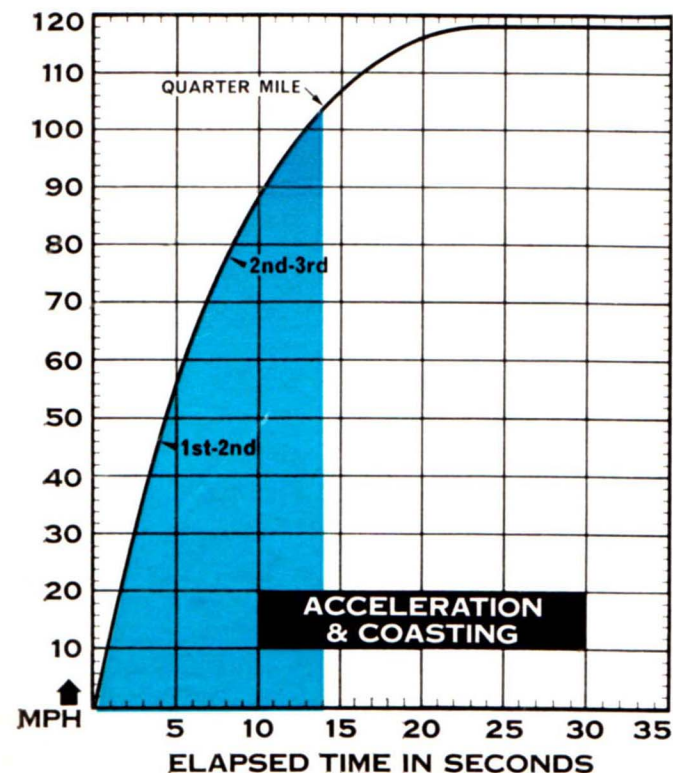
ENGINE

Type, no. of cyl.	V8
Bore x stroke, in.	4.32 x 3.75
Displacement, cu. in.	440
Compression ratio	10.1:1
Fuel required	Premium
Rated bhp @ rpm	375 @ 4600
equivalent mph	94
Rated torque @ rpm	480 @ 3200
equivalent mph	65
Carburetion: Carter 1x4	
throttle dia., pri./sec.	1.69/1.69
Valve train: Hydraulic lifters, push-rods, overhead rocker arms	
cam timing	
deg., int./exh.	21-67/79-25
duration, int./exh.	268/284
Exhaust system: Dual, reverse flow mufflers	
pipe dia., exh./tail	2.5/2.25
Normal oil press. @ rpm	.55 @ 2000
Electrical supply, V./amp.	12/46
Battery, plates/amp. hr.	78/70

DRIVE TRAIN

Transmission type: three speed automatic with torque converter Torqueflite	
Gear ratio overall	
3rd (1.00)	3.55:1
2nd (1.45)	5.15:1
1st (2.45)	8.70:1
1st x t.c. stall (2.00x2) 45	17.40:1
Shift lever location: Console.	
Differential type: Hypoid with limited slip.	
axle ratio	3.55:1

CAR LIFE ROAD TEST



CALCULATED DATA

Lb./bhp (test weight)	10.0
Cu. ft./ton mile	200.0
Mph/1000 rpm (high gear)	24.1
Engine revs./mile (60 mph)	2940
Piston travel, ft./mile	1840
CAR LIFE wear index	54.0

SPEEDOMETER ERROR

Indicated	Actual
30 mph	28.6
40 mph	38.2
50 mph	47.6
60 mph	57.3
70 mph	67.3
80 mph	68.0
90 mph	88.2

MAINTENANCE

Engine oil, miles/days	4000/90
oil filter, miles/days	8000/180
Chassis lubrication, miles	36,000
Antismog servicing, type/miles	
tune up; replace PCV valve/12000	
Air cleaner, miles	replace/24000
Spark plugs: Champion J-11Y	
gap, (in.)	0.035
Basic timing, deg./rpm	58TOC/600
max. cent. adv., deg./rpm	30/4800
max. vac. adv., deg./in.	
Hg.	21/16
Ignition point gap, in.	0.016
cam dwell angle, deg.	32
arm tension, oz.	18
Tappet clearance, int./exh.	2/0
Fuel pressure at idle, psi	4.5
Radiator cap relief press., psi	16

PERFORMANCE

Top speed (5800), mph	118
Test shift points (rpm) @ mph	
2nd to 3rd (5500)	78
1st to 2nd (5500)	46

ACCELERATION

0-30 mph, sec.	2.5
0-40 mph	3.4
0-50 mph	4.4
0-60 mph	5.6
0-70 mph	6.8
0-80 mph	8.4
0-90 mph	10.4
0-100 mph	13.8
Standing 1/4-mile, sec.	14.01
speed at end, mph	103.81
Passing, 30-70 mph, sec.	4.3

BRAKING

Max. deceleration rate from 80 mph	
ft./sec./sec.	24
No. of stops from 80 mph (60-sec. intervals) before 20% loss in deceleration rate	8 stops—14% loss
Control loss? Slight	
Overall brake performance	Fair

FUEL CONSUMPTION

Test conditions, mpg	9.8
Normal cond., mpg	10-12
Cruising range, miles	180-220



HAPPILY in its element on the dragstrip, the 'Cuda got right down to business and recorded elapsed time of 14.01 sec. Test drivers felt time could have been knocked still lower through patient effort.

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continued

bigger engine's torque potential.

From the dragstrip, the 440 was taken around CAR LIFE's road test track, which was not at all its piece of cake. The inherent understeer that is found in most of the big-engined Ponycars was there as expected. But it was much more severe than that found in the 'Cuda 340, the handling of which we had described as "quite good." Not this time. Powering out of corners with the 440, however, was easy; the limited-slip differential doing a good job of delivering the power.

The manual steering, unfortunately, was slow, heavy, sloppy, and incapable of coping with the 440's power surges. The testers soon grew weary of having to throw the wheel from lock to lock to keep the car pointed in the right direction. Things never reached the panic stage, possibly because the testers were used to these things and because all the action was occurring on an empty track. Still, the 'Cuda 440 badly needs quicker, more precise steering. But no relief is in sight. Quicker manual steering is available as an option, but with a ratio (19.15:1) that would require such strong-arming that no woman and few men could live with it.

The steering problem was aggravated, no doubt, by the steering wheel itself. The steering wheel is too high. One's arms get tired hanging onto it.

As for the interior, all 440 'Cudas are equipped with bucket seats and a console shifter. The seats are hard,

but not unbearably so. The backs are stiffly upright. A further annoyance was the armrest on the driver's side. Like the steering wheel it was too high to be used comfortably; many times the driver cried "ouch" when he bumped his elbow against it.

All the faults so far found with the 440 'Cuda could be lived with if it came down to that. The brakes were no better than average—and the 'Cuda 440 is not an average car. Its very name suggests, even screams, that it is bred for performance. Average brakes on a high-performance car do not make sense. Disc brakes would have made a difference, but they aren't available because of the aforementioned space limitations.

Does this braking problem mean that the 440 'Cuda is an unsafe car? No, hardly that. They will stop the car in a panic situation. But they are not as good as the brakes on the smaller 340 'Cuda (which were excellent) and they should at least be that.

The 440 was relatively unspectacular on the dragstrip, unimpressive on

the road test course, but absolutely in its element on the high-speed (70-mph limit) freeways of Southern California. The stiffer springs and bigger shock absorbers (same as on the 340) did not feel harsh, but secure. Engine noise was not excessive. Power for passing was there in abundance, as would be expected. What was worrying was the gearing of our test car. The small tachometer, located in the center of the dash where it belongs, stayed near the 3600 rpm mark at 70-75 mph. The engine was, in other words, spinning right along—too much so to our thinking.

Around town, the big 440 engine was not explosive. It idled down nicely at stop lights, and showed no objection to being driven docilely.

Possibly the 1970 model Barracudas will have suitable brakes and steering with the 440. But until they do the car will suffer. As it stands now, the 440 is not a good, or complete package. Everything it does, except for dragstrip performance, the smaller 340 'Cuda does much better. ■

HARD BRAKING brought out the worst in the 'Cuda. Drum brakes were no better than average. Regrettably, power-assisted disc brakes are not optional.

