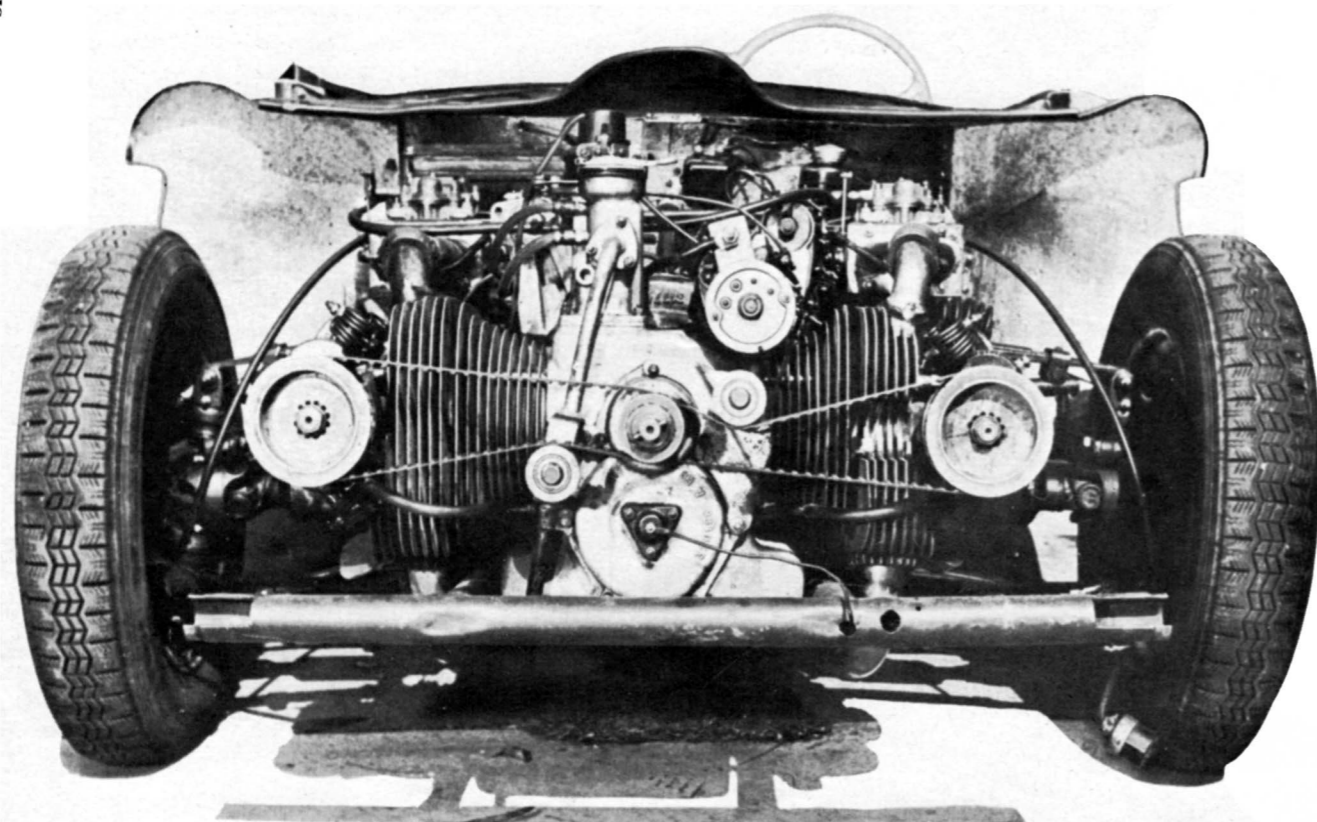


# SMALL BORE - BIG PULL



Front end packed with goods, including remarkable notched-belt drive for Norton cams. Cooling by forced draft only.

By OCEE RITCH

THIS is not so much the story of an unorthodox car as it is the chronicle of an unorthodox man. If the car is an interesting piece of machinery, its builder, a gentleman who has spent some \$75,000 on a dream, is even more noteworthy. Without his willingness to gamble on an idea and a determination which amounts to stubbornness, it is highly unlikely that the automobile which may be the prototype of a future breed would ever have come into being.

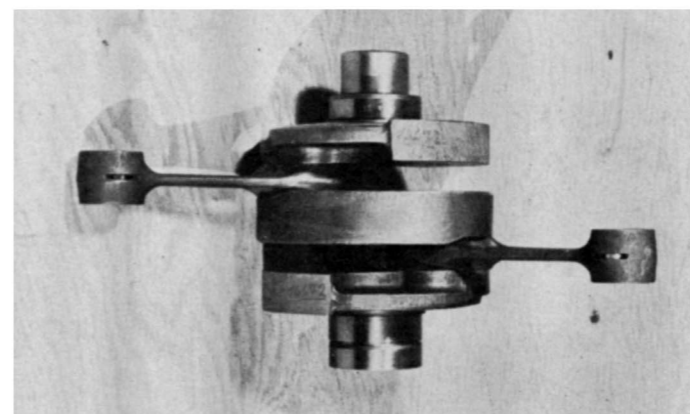
All these things could well be said of every automotive pioneer, it is true, but these are not pioneering days and innovations are not everyday occurrences. To qualify our subject (the car) as unique, let us depose that our other subject (the man) has wedded auto and cycle parts in a powerplant weighing around 135 pounds which develops nearly 80 HP from 750cc (44 cubic inches) . . . roughly the equivalent in displacement to *one cylinder* of a Chrysler. Furthermore he has mounted this screamer in a superlight chassis surrounded by a 75 pound body and the resultant bomb regularly finishes far ahead of many rivals one and two classes higher.

The man's name is Bill Devin, the car is the newest Devin Panhard and the 75 G dream is to produce duplicates for sale to the public.

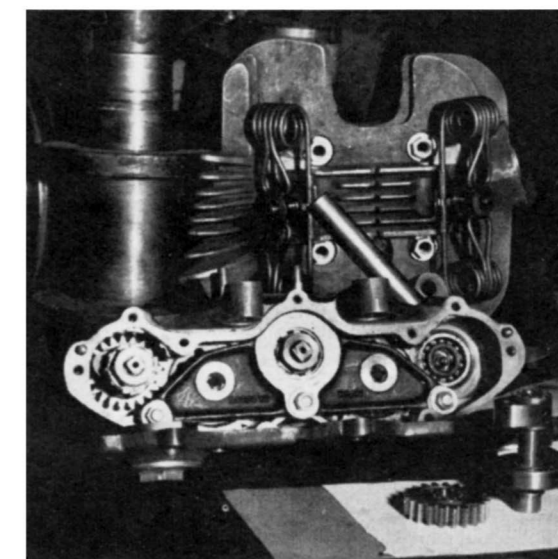
Few of our readers, unfortunately, have had the opportunity to drive a Ferrari. To many who have, this represents the ultimate in go-for-fun machines. To put it succinctly: when you push on the Loud Pedal in a Ferrari something happens and when you turn the wheel it turns. No nonsense, no arguments, or tricks; just stab it and steer it. Once bitten by the Ferrari bug, you've had it. But, at 12 thousand dollars, loosely speaking, how many can afford to have it? This is the feeling which courses through Bill Devin's nervous system and the idea which drives him to make it possible for anyone who has two or three thousand dollars to own a Ferrari. Not a prancing horse from Modena, true, but a tiny duplicate which will give that same feeling in the pit of the stomach when you turn on the pressure.

Devin is a refugee from the Detroit Iron business who made a fair sized fortune vending Chrysler products in his own agency. After the sports car movement began to grow

*Bill Devin is a man who believes in getting lots of power out of small engines. Here's the latest Devin-Panhard, a sudsy mix of cycle and car.*



Clean cut but not polished, sturdy crank is pressed together to allow one-piece rods and roller bearings throughout. More cycle than car in character, this goes well with Norton.



ABOVE: Now being reworked for latest Devin Panhard are "double-knocker" Norton heads. Simplification will cut out nine gears, many ball bearings. AT LEFT: Potent team of D-P's includes (L to R) Bill Devin, Jim Orr and Jean P. Kunstle. Not pretty but light and low, their record includes 41 class wins. BELOW: Cam shape and lift pattern remain constant, but relation of cam to cam and to crankshaft can be set to change opening points and overlap.

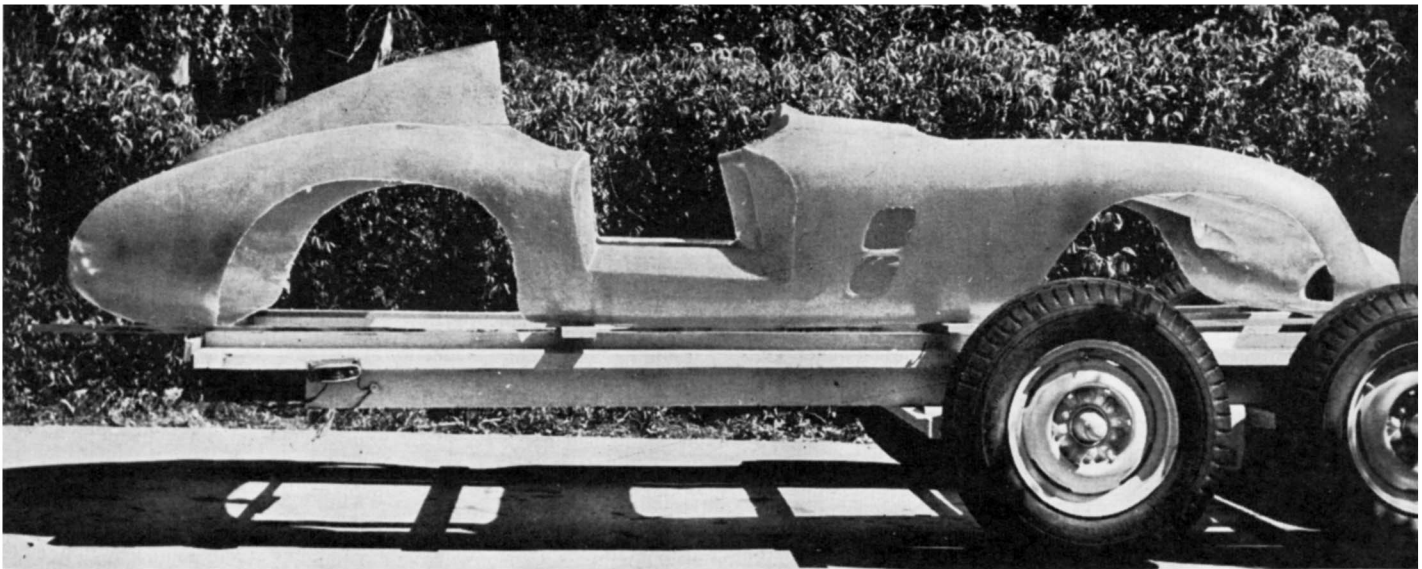


from a trickle into a streamlet he joined in the fun and games with a Crosley Special, built in his own shop, and competed quite successfully. This was back in the early 1950's when things weren't too well publicized, but many will remember the races at Walnut Creek, California, where Devin won the Under 1500 cc event and placed fifth in the main behind Jack McAfee (in Tony Parravano's Jag), Ed Cannon and Bill Stroppe who, needless to say, were wheeling potent big cars.

A feature on the Crosley, which won 20 races and failed to finish only twice, was the use of a scavenging exhaust system of "tuned" headers only now coming into widespread use.

These Crosley outings gave Bro. Devin a taste for bigger and fiercer action and, deciding that only the best would be good enough, he bought Phil Hill's Mexican Road Race Ferrari . . . a 2.6 liter coupe. After bringing the car back from El Paso Bill drove it to a third overall at Palm Springs behind Jack McAfee (4.1 Ferrari) and Howard Wheeler (2.6 Ferrari roadster). Not a bad showing for the relatively heavy coupe.





*Clean Ermini-inspired body is current mainstay of Devin line, may eventually cover entire US-built car. It's available in kit form, for touring or competition, finished or rough.*

The 2.6 was the first of an imposing succession of such automobiles which have been garaged at the Devin manse. A 4.1 Coupe driven at Le Mans by Simon, the ex-Rubirosa 12 cylinder 2 liter, and a 3 liter Farina Coupe head the list of uncle Enzo's merchandise. Uncounted are the ones ordered to run at Le Mans in 1953 which were not completed in time for the race. While in Italy, Devin made arrangements to import the Siata V8's into this country but lack of sales soon punched a hole in the project.

Other marques of which he has owned one or more specimens are enough to make a car fan drool, including OSCA, Arnolt Bristol, Porsche, Jaguar, MG, Citroën, Cord and Panhard. Notice please that the last three named have one thing in common: FWD.

A few years ago anyone who spoke out in favor of front wheel drive was regarded as an eccentric. Not so today, though, and Devin is in the forefront of those preaching the pull-instead-of-push sermon. It's not the purpose of this article to enter into the front-vs.-rear drive controversy, but merely to point out the performance characteristics observed in Devin Panhards which happen to be FWD. Observation: They go! And suffice it to say that the front-drive conception fits in perfectly with the plans of this man who says he wants to build cars with "lots of go for the dough."

Having established himself as a first class car nut, Bill was bitten by the virus which has infected so many in the post-war years. Unable to find exactly the car which suited him at a price he considered reasonable to the average man he decided to build one and, with the natural instincts of a dealer, to offer reproductions for sale to all comers.

This is, of course, a dark and dangerous road strewn with the carcasses of those with similar intentions. The Skorpion, Cheetah, Cunningham, Excalibur and Glaspar are a few American attempts which might be mentioned. Whether the Devin will join the roster of GM, Ford and Chrysler or will be listed along with the Bessemer, Croxton-Keating and Lutz Steamer in oblivion is being decided as you read this.

Seeing in the French Panhard a compact, well engineered small car which might furnish factory produced components for a special, Devin acquired a wrecked sedan and disassembled it completely. Here is what he found: A two cylinder, air cooled 850cc engine with interchangeable sleeves

to reduce it to 745cc (Racing Class H), rated at 45 and 40 HP for the respective displacements. "Sturdiness" would be a simple description of the mill, which uses one-piece castings wherever possible. The sump and crankcase unit, for example, as well as the cylinders and integral head, are one piece. No gaskets are used between cylinders and case, incidentally, and compression ratio can be varied by using copper gaskets or turning a few thousandths off the barrels. Aluminum alloy pushrods actuate valves inclined at 45 degrees and closed by torsion bars rather than coil springs.

One-piece connecting rods, sort of the ultimate in sturdiness, are assembled with the full roller bearing crank which is press-fitted. Roller bearing mains of approximately 3½ inch diameter support the short (4½ inches between centers) crank. Unless run absolutely dry, the odds against such a bottom end coming unglued are quite high. Oil is low-pressured out of a dry sump throughout the engine, including the needle-bearing-mounted rocker arms.

Power from the sturdy twin is delivered through a single plate 7-inch dry clutch to a "rear end" and gearbox unit weighing only 45 pounds complete with grease! A one-piece aluminum housing surrounds the four speed transmission and differential. Unusual, besides the extremely low weight, is the fact that the transmission is cable-operated and has synchromesh only on second and third gears. Being front wheel drive, the whole ball of wax is mounted in a unit between upper and lower transverse springs. Independent axle halves depend on a total of six universal joints for constant velocity drive. Such U-joints have been blamed for the downfall of Cord and others, but in combination with the factory-set front end alignment, which cannot be changed without altering spring length, this application has proven trouble-free for many years.

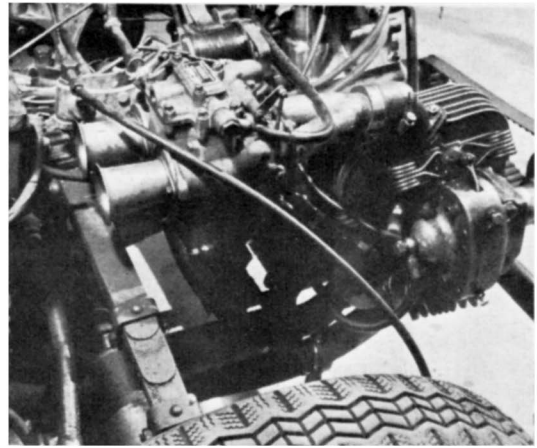
Adjustable Houdaille shocks control bounce and rebound on both front and rear . . . a semi-independent "V" axle arrangement. Torsion bars support the trailing vee tube and are splined for adjustment to half a degree. Brakes are Lockheed hydraulic with 10 inch drums front and 7 inch rear. Rack and pinion gives 2½ turn steering and a 27 foot turning circle.

Other dimensions include a normal 83¾-inch wheelbase,

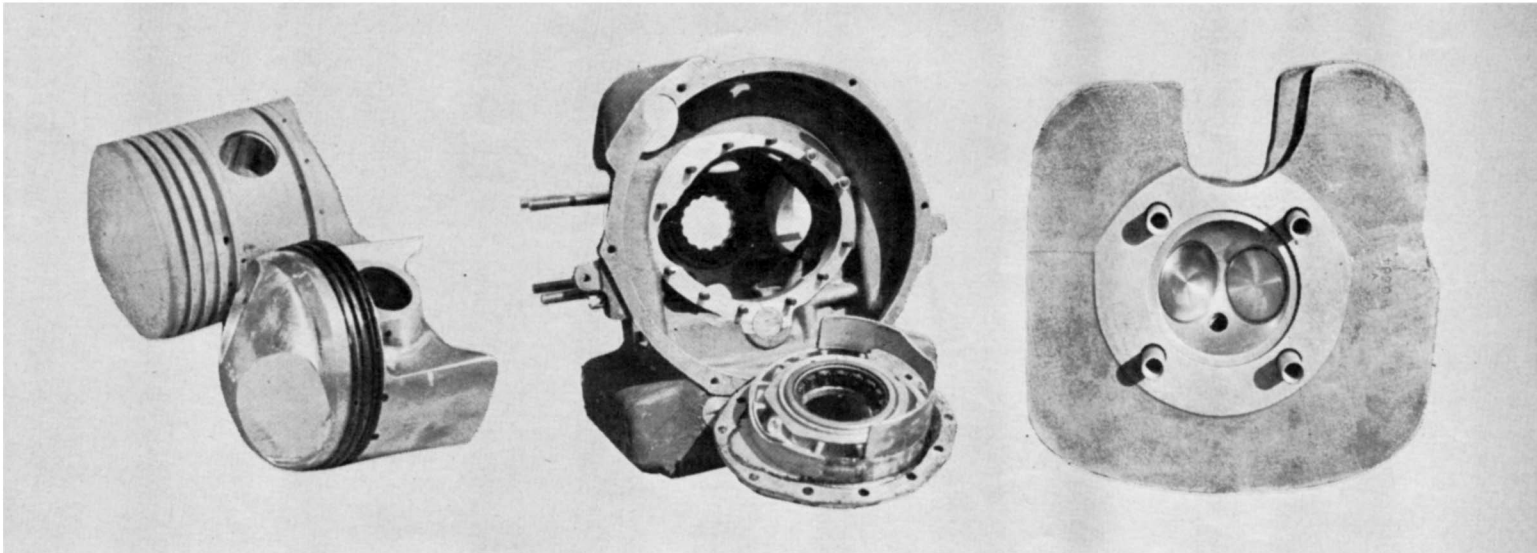
which can be infinitely varied because of the FWD, and a 48-inch tread.

So much for statistics. Those familiar with good engineering practices can see how such components, if bought cheaply enough, could be highly desirable in a land where everything has to be big to be good. "There is no excuse for a heavy car," is one of Devin's sayings and his ensuing experiments were to lighten the Panhard further as well as to put it into a reasonably attractive skin.

Beginning with a simple box frame of Shelby tubing,



*Racing factory Panhards used one twin-choke Solex carb for each cylinder, Devin has refined by using Webers. Horizontal (Solexes were down-draft), these meter fuel better than one big pot.*



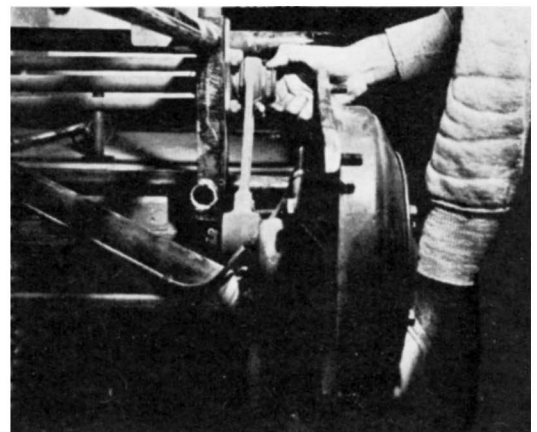
*Stock Panhard piston at top is no slouch, but slipper-type Norton slug has three instead of five rings, high dome, big valve clearance cutouts.*

*Reliability starts right here. Two big roller mains scale over three inches diameter. Rear main housing is removed to insert crankshaft.*

*Norton chamber is classic hemisphere, has intake port angled slightly toward offset plug hole. Big notch at top was for shaft drive to cams.*

designed to accommodate stock Panhard front and rear assemblies, Devin, with no pretense of being a body stylist, soon came up with a streamlined envelope shell molded in Fiberglas-plastic. The shape doesn't qualify as being either ugly or beautiful, but it is easy to mold and assemble. A number of these bodies were made and sold, principally in California. In a mid-fall excursion at Pomona, at least six roared off in one event. Most prominent was Jim Orr's blue-trimmed white skimmer which copped first in Class H and finished 12th overall in the Under 1500cc Main (out of 42 starters) with such company as four Porsche Spyderys, a 1500 OSCA, six Alfa Romeos, four Lotuses and all sorts of modifieds.

*(Continued on page 63)*



*Rear suspension is trailing "V" arm; angle of link to transverse torsion bar can be set within half degree. Frame is simple box of Shelby tube.*

## Devin Panhard

(Continued from page 43)

At Palm Springs (as well as the previously mentioned Pomona Show), a revised engine containing certain motorcycle parts was utilized. Here the blue and white roadster looked by far the best of the field running seemingly under wraps and took a class win as usual.

Using the Panhard crankcase, roller bearing crank assembly, and rods as a base, Devin has affixed a pair of Norton "Manx" motorcycle cylinders which are topped by an overhead cam layout. To drive these cams, one per head, a notched rubber transmission belt is used. It sounds easy enough and looks quite natural when viewed in the completed shape but the whole project has been carried on in the face of "it'll never get off the ground" type of predictions. "Anybody will tell you that you can't use a rubber belt for valve timing," Devin says, "but we are doing it anyway."

The use of notched rubber power transmission belts to operate cyclic or timed mechanisms is not unique, naturally, being in constant industrial usage, but this marks the first successful automotive application to our knowledge. Advantages of the 1½ inch wide belt of molded rubber, bonded to a continuous steel wire base, over the more conventional chain or gears, are many. Lighter in weight, therefore lower in inertia, far more likely to disintegrate slowly than to snap suddenly, and needing no lubrication nor housing, the U.S. Rubber product certainly gets the nod . . . if it doesn't stretch.

Such belts have been tried on superchargers to replace V belts, which suffer from considerable slippage, but sheared pulley keys and pins soon proved that their action is too positive. In this cam driving application the belt has proven admirably suited, although many prophesied that under severe acceleration there would be enough resiliency or backlash to foul up valve timing. But, no stretch!

A machine adaptation for the front of the cam housing on the Norton head, with its hairpin springs, eliminated the tower shaft and several gears. As she sits, a notched pulley with 14 teeth on the end of each camshaft is driven through its own belt by a 28-tooth pulley on the front end of the main shaft . . . a spot formerly occupied by the generator pulley. Two idlers maintain tension.

Grafting the Norton cylinders onto the Panhard case required filling the original stud holes with ¼-inch aluminum bolts and drilling new holes to accommodate the 7/16-inch Norton studs. There is no difference in displacement as a result of the switch, inasmuch as the bore diameter of both makes is the same: 3.12 inches. The Panhard stroke of 2.94 inches produces an oversquare engine. Although the Norton barrels are somewhat larger in overall size due to the greater fin area,

(Continued on page 64)



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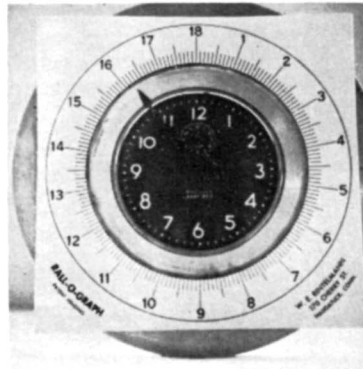
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## Devin Panhard

(Continued from page 63)

there is no appreciable gain in weight, inasmuch as the Panhard is cast-iron-sleeved and the Norton all lightweight alloy.

Superimposed over the stock but overstressed bottom end, we find a big-ported head, straight-through porting, monster valves . . . 1-27/32 inch intake and 1 3/4-inch exhaust. A compression ratio of 9.5 to 1, effected through the use of Norton hi-dome pistons, is about the maximum desirable for gasoline fed through twin-choke Italian Weber carbs on Y inlet manifolds . . . one for each cylinder. The fly-wheel has been lightened through replacement! Not to overlook details, Devin whittled out a duplicate in aluminum and pressed on the steel starter ring gear . . . saved 8 pounds and gained much acceleration.

With cams designed for cycle racing, a normal opening and closing sequence reads something like this: Intake valve opens 57 1/2 degrees BTC and closes 60 degrees ABC, Exhaust opens 85 degrees BBC and closes 42 1/2 degrees ATC. With 42 degrees spark advance this can be considered a bit radical but the best is yet to come: The cams are assembled, and lobes can be fitted onto the shaft at any degree relationship. Want to try opening the intake a couple of degrees sooner? Fine. Disassemble the cam, move the lobe a notch and put it back together! Endless possibilities.

What actual timing he will run on a different "New" engine, Devin keeps to himself. Data on the improved model is also confidential but, as one who has been permitted to view some of the actual construction, we can say that the latest cross-breed will employ FOUR overhead cams, twin ignition and fuel injection.

"What kind of a small car can a fellow buy today that can be driven to the track and stand a chance of winning," Bill asks, "and what do you have to pay for one? Almost as much as for a much bigger car. Anything in the 750cc class you have to build yourself. I've spent \$75,000 developing this thing and if I had another hundred thousand I'd build a hundred push-rod Devin Panhards. I've made arrangements with the factory for components and the bugs have been worked out of my new body. I could make and sell such a car, complete, for \$2,250 or \$2,450 with a hard-top. You could drive it on the street every day and yet go to the track and run with the best of them. I think I've proved that."

The story is familiar but the ending is yet untold. The difference in the plot as it looks from here is in the one word, "ability". Here is a man with ability. A man with a dream, true, but backed by enough persistence and know-how to go far beyond the conventional for a solution to his problems. Perhaps a financial solution will be found as well and we will be thrilled by the pants-ripping snarl of a flock of Devin-Norton-Panhards in future races.

Ocee Ritch

## Daytona

(Continued from page 31)

beach was no longer unknown, but still dangerous, as witnessed by a flipping T'bird that hospitalized its driver. In no time at all the line of cars began to move and we warmed up the Fury engine while getting familiar with the seldom-used clutch and cog box. Only three cars from the start line. The windshield was cleaned, windows checked, ventpanes set—then we had to move forward. Only two cars now. We tied the seat belt and latched the unused belt so there would be something to hold onto in case of a flip. Move again. Nothing more to do with the Fury, but watch how the preceding driver takes off. Not so good. He was caught in deep ruts.

My turn now.

I pulled left, straightened out into the trap over clean uncut sand. A dirty look from the steward. He had to move, but we got a good start. I checked the shift—it was already in low. Somebody yelled, "Stand on it." The idiot, what did he want me to do; plant an anchor? The window was up, the starter checked me out, flipped the green. We were off again.

The wheels spun a little, but the Fury really moved. At 50 I slammed through the gate to second. The car fishtailed under full power, but it made little difference. We were accelerating too fast to lose much from wheel spin. At 85 we tied to high, the first mile behind us, foot in it all the way. The beach was smooth, fast—then quiet. Markers seemed only inches away from each fender, spreading slightly apart to let us pass. The first timing cable came into view — the speedometer read 130. "Snap" the cable was underwheel, then behind. I was talking to myself, "Hold it steady, let power steering do the work, keep a light grip, where are all the people? Don't worry about the speedometer, it's not accurate anyhow. Don't get sleepy—this is no time for a nap. What odd things to think about. Whoops, here's the other end."

"Slap," and out of the measured mile with the huge grandstand only a black blur to the right. Now I sneaked a glance at the needle. It read 142. Slowly my number twelve backed off the "go" button and we slowed to 100. Then 80, finally 60 before brakes brought our flying Fury to a sedate pedestrian pace. The south turn flagman waved us to a line of cars ready for the northbound run, where we idled the engine for a few cooling minutes before shutting off.

Time was a thumping 124.181 mph, placing our Fury in the upper third of speed iron, the fastest of which hit 139.969. Not bad for a truly stock Fury, tuned by a dealer's mechanic, driven by a writer. This made it the fastest stick-shift stock Fury on the beach, and ours was the fastest run it made.

Next year, wind, waves, weather and NASCAR permitting, we'll be on the beach again, for an even faster run through the famous measured mile of Daytona Beach.

Bill Carroll