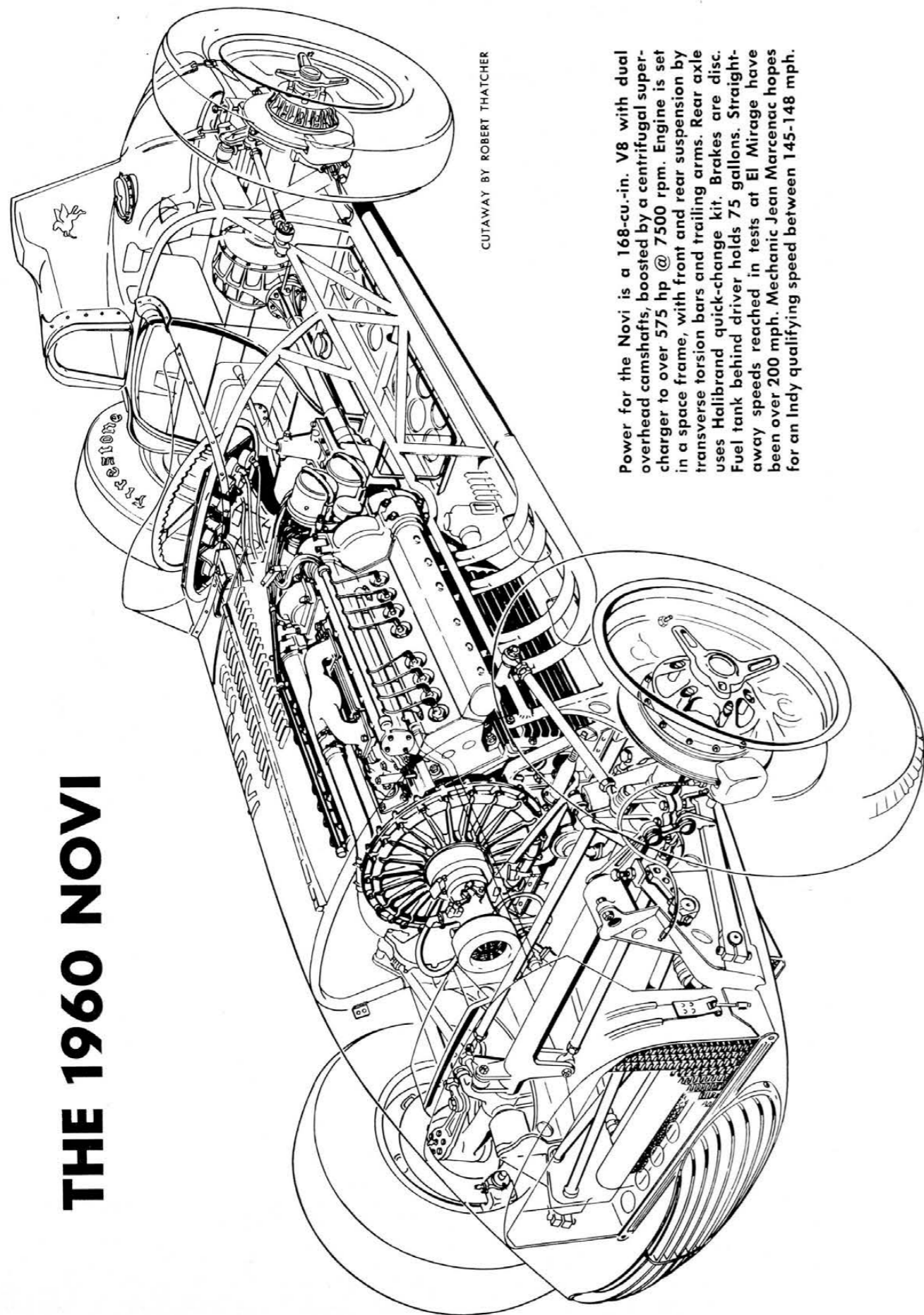


THE 1960 NOVI



CUTAWAY BY ROBERT THATCHER

Power for the Novi is a 168-cu.-in. V8 with dual overhead camshafts, boosted by a centrifugal supercharger to over 575 hp @ 7500 rpm. Engine is set in a space frame, with front and rear suspension by transverse torsion bars and trailing arms. Rear axle uses Halibrand quick-change kit. Brakes are disc. Fuel tank behind driver holds 75 gallons. Straight-away speeds reached in tests at El Mirage have been over 200 mph. Mechanic Jean Marcenac hopes for an Indy qualifying speed between 145-148 mph.

Can the **NOVIS** lick the Indy jinx?

"... Anyone who has seen these brutish cars in action ... will agree that once the combination is found and the engine lives for 500 miles, the competition will never know which way the Novis went. This could be that time."

by Bob Russo

EVERY SPORT HAS its perennial favorites. Baseball has the Yankees and Dodgers; football has Notre Dame; boxing has Sugar Ray while auto racing ... well, racing has the Novis, a pair of sleek, low-slung automobiles that have captured the hearts of Indianapolis 500 viewers for more than a decade, even though they have never reached Victory Lane.

There are several reasons for the immense popularity enjoyed by these supercharged V8 creations. Their unmistakable banshee wail as they sizzle down the main straightaway is like no other sound in racing, and to watch them gobble up competition when everything is right is a sight unequaled at Indianapolis. But most of all, it is the relentless work that has gone into these machines in an effort to rid them of various mechanical ills which have plagued them almost from the beginning. Today, the Novis are the only threat to the domineering four-cylinder unblown Offenhausers which have won all but three Indianapolis races since 1934. Nearly everyone would like to see them succeed.

Originally conceived in the minds of Bud and Ed Winfield, the Novi engine was designed by Leo Goossen, chief designer for the famous Miller Eight racing engine which eventually was reduced to four cylinders and which is known today as the Offenhauser. Financed by Lou Welch, the first Novi powerplant was completed in 1941 and placed in a 1935 front-drive chassis. With Ralph Hepburn driving, the car finished fourth in 1941.

When racing was resumed following World War II, Welch had a new front-drive chassis constructed to house his powerful engine. A year later, he added a second mount. Both of them came to be known as Novis, since Welch has business interests in Novi, Mich. The cars set new speed marks and one of them finished fourth in the 1947 race. But, despite their speed and power, mechanical failure plagued them time and again.

The original Novi engine (there have been five since 1941) was much the same as those which will power two cars at Indianapolis this year. Boosted by a centrifugal supercharger designed by Winfield, the V8 powerplant contains double overhead cams and, originally, had a piston displacement of 183 cubic inches. Capable of more than 550 hp, the original engine employed three carburetors.

For nearly five years, the Novis were the most feared competitors at the Speedway. Time and again, they conquered pole

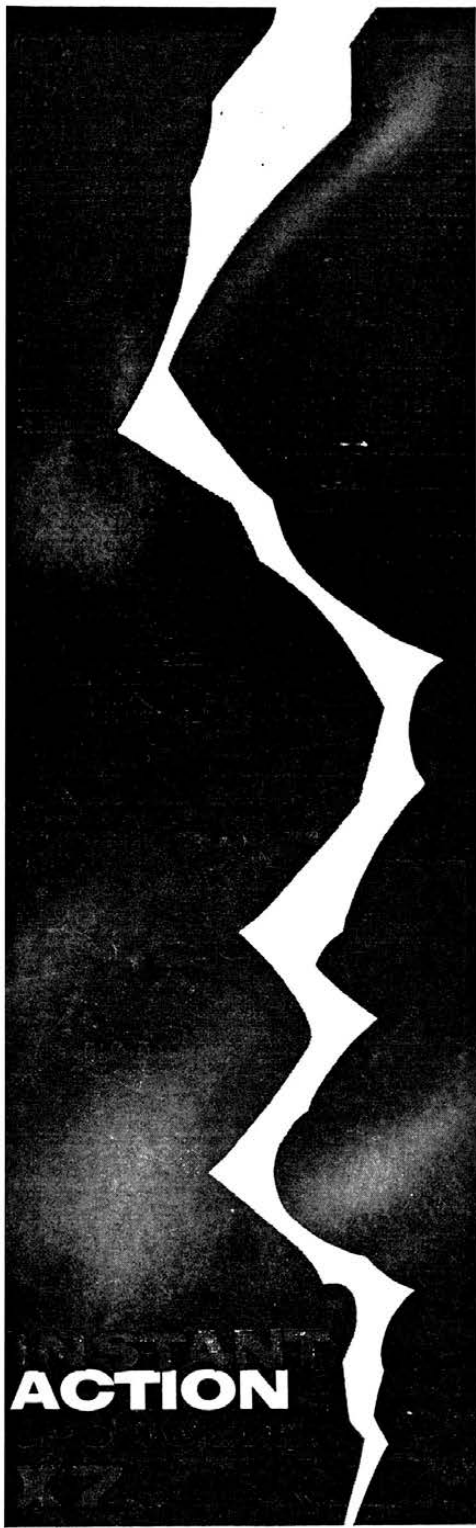
position, sometimes out-qualifying the next fastest car by as much as five mph. But except for another fourth-place finish in 1948, the cars have come no closer to Victory Lane. Supercharger troubles, burned pistons, ignition failures and a variety of other mechanical ills took these cars from the lead on numerous occasions and sent them to the pits for good.

Each year Novi specialist Jean Marcenac, complete with beret, has worked without letup to overcome his problems. He reduced the number of carburetors to one, relocated the blower and added another spark plug for each cylinder. His efforts bore fruit, for the engine troubles vanished in time, but the years had created a new problem. With engine efficiency on the increase, race speeds also began to soar, and once they reached the 130-mph mark, tire wear became a critical problem for the heavy, front-drive cars. In just a few laps they wore through front tires and were forced to pit. Speed and time gained on the track were lost in numerous pit stops.

In the winter of 1955-'56, Welch gave in to his long-time urge to switch to rear-drive mounts. Many felt that the powerful engines would be too much to hold in anything but a front-drive. Again, Welch and Marcenac refused to lose faith. Two new rear-drive chassis were constructed by Frank Kurtis and when they showed up at the Speedway, onlookers were still skeptical.

One car qualified, and with veteran Paul Russo at the wheel, the Novi Vespa Special blasted into the lead on the 11th circuit. Roaring down the main straightaway, Russo blew off everything in sight—including the first- and second-place cars. He stretched his lead up the backstretch and was nearly out of sight of his competitors in three more laps. On the 19th lap he averaged 144.416 mph, setting the fastest leading lap ever recorded. But on the 22nd the plague struck again. Going into the first turn, the right rear tire came apart and the car skidded into the wall. Fortunately, Russo escaped injury but the car was through for the day.

Once again, Marcenac returned to his shop in Burbank, Calif. to prepare for the next race. Both cars made the 1957 starting field, but carburetion troubles restricted their speeds and they placed fourth and 15th. The following year, an accident caused one car to be sidelined while the other, troubled with poor handling, placed 10th. *continued on page 90*



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Last year, neither car made the starting field. In an effort to eliminate the added weight of a 22-pound Holley carburetor, Marcenac switched to a six-pound fuel-injection unit. But, at high rpm the fuel flow would cease for a fraction of a second and the engine would "sneeze," or backfire. With 120 inches of manifold pressure (40 pounds), three sneezes ruined three blowers and even buckled the cowlings on one of the cars. And though Marcenac went without sleep for days, he could not find a cure in time to qualify.

Since last May, Marcenac has been busy trying to eliminate the problem. The injectors used last year have been replaced by a modified Stromberg aircraft carburetor, which operates in conjunction with a diaphragm regulator. The regulator is modified for use with nozzles made of magnesium and contains 36 holes that atomize the fuel ahead of the impeller for more even distribution.



"How about going with me to the stock car races next Thursday, Alfred?"

Except for this major change in carburetion, the engine will be exactly as it was before. It now has a displacement of 168 cubic inches (slightly under the maximum allowance of 171 cubic inches), and has 8 to 1 compression. It has a bore of 3 $\frac{3}{16}$ and a stroke of 2 $\frac{3}{8}$. For fuel, Marcenac still runs the same blend developed by Winfield in 1948: 80 per cent methanol, 10 per cent 130 octane gasoline, 10 per cent acetone.

This will mark the 15th year at Indianapolis for the Novis. It seems logical that, with all their troubles, at least some of the potential would be worn off. Nothing, however, could be further from the truth. Anyone who has seen these brutish cars in action will agree that once the combination is found and the engine lives for 500 miles, the competition will never know which way the Novis went. This could be that time.

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