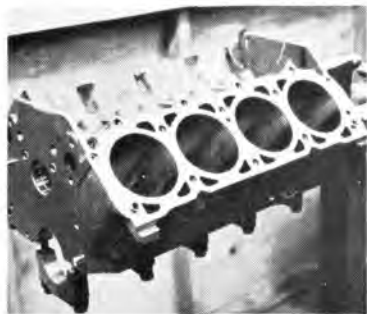


343-390 AM Blueprint Setup: Super Stocking The 'J' Car

With improved, performance-oriented 343 & 390 wedge options, the new-breed Javelin poses a serious threat in the lower Stock and Super/Stock ranks. Here's how to turn one into a strip star

BY MARTYN L. SCHORR



Ranger Rambler's Super/Stock Javelin was built as a rolling billboard for the dealer's Performance Division. Block was professionally-prepared to accept .030-inch over Crankshaft Co. pistons and a reworked crank with Chevy 350-cube rods. Block deck was parallel ground on a special machine. Joe Jill built the mill and decked it off with Doug headers, a deep pan and a re-jetted Holley three-barrel on a new 360-degree Offy manifold.



EVERYONE LAUGHED when American Motors announced that it was coming out with a competitor for the Mustang. And they laughed even harder, when they later revealed that they were coming out with a Corvette-type two-seater. And very few of the "in" crowd paid much attention to the leaders of the super-market sweepstakes when they spoke of going racing.

Well very few of the "in" crowd are laughing anymore. Especially Mustang owners. Because AM came out with the Javelin which comes off pretty damn well when compared to the Mustang on paper or side by side. And their two-seater AMX won't really do a job on Corvette sales, but it will sell. And, anyone who has ever run against a well-tuned 343-390 Javelin or AMX knows that for the first time in AM history (The old Bendix Electrojected '57 Rebel doesn't really count) they have some running machinery.

Because the basic 343-390 AM engine is a relative newcomer to the performance field, we felt it was time to seek out someone who was planning to run a track machine and find out exactly what's happening. Fortunately for us a local Rambler dealer (Ranger Rambler in Floral Park, New York) was setting one up as a rolling billboard to help pick up some performance-minded customers. The project was handled by Carl Schorr, one of the owners, and the work farmed out to Joe Jill at Speedwin Automotive (465 Jericho Turnpike, Mineola, New York) Since the guys at Speedwin had a lot of time to play with the car (343 Javelin) they experimented with various combinations until they came

up with what they thought would be the hot setup. As the finished product is shown here, it's legal for NHRA Super/Stock as well as a wide range of AHRA and local track classes.

Because of a wide range of unknown factors (Very few if any AM mills have been built up to all-out drag standards in the past) much attention was paid to the beefing up of the lower end to enable it to stand high rpm drag abuse. All components were laid out and a multitude of combinations were worked out on paper, then finally translated into what Jill considers the hot setup for the 343 engine. Before going any deeper we would like to explain that the 390 engine is basically an overgrown 343 and most all parts are interchangeable. However, the 343 uses an iron crank, while the 390 uses an SAE 1046 forged steel arm.

The lower end combination finally chosen is one which incorporates the use of a reworked 343 crankshaft, Crankshaft Company Dykes pistons, Federal Mogul Alcad bearings and Chevrolet 350 rods. To make the Javelin engine stand up under competition use, Jill found it necessary to adapt steel rods from a 350-cube Chevy engine to the AM setup. To use these rods, however, certain modifications had to be made to the crank and to the piston pin location in the pistons. This is necessary as the Javelin rod's center-to-center distance is 5.875 inches as opposed to the Chevy rod's center-to-center distance of 5.700 inches. This difference was made up in the pistons themselves by Crankshaft Company by relocating the piston pin bosses.

But there was more to it than that. The width at the bore end of the Javelin rod is .985 inches, while the Chevy rod checks out at .934 inches. This translates into an unreal side clearance of .051 inches. To decrease the amount of side clearance to the final .025 inches, the crank was shipped out to Storm Crank in Mount Vernon, N.Y. for special welding. To decrease the side clearance they built up the sides of the rod journals via a special welding process and then

Color roundup of AM's hot machines for '68. The 343 Javelin runs in G/Stock while the 343 Rebel is way down in I/Stock. The super-hot 390 two-seater AMX falls into E/Stock and Super F.



machined them for a total of .025 inches. A radius was also ground into the crank at the same time. Next the rod journals were cut .005 inches to bring them down to Chevy 350 journal size as the Javelin rod journal is 2.0955 inches as opposed to 2.100 inches for the Chevy.

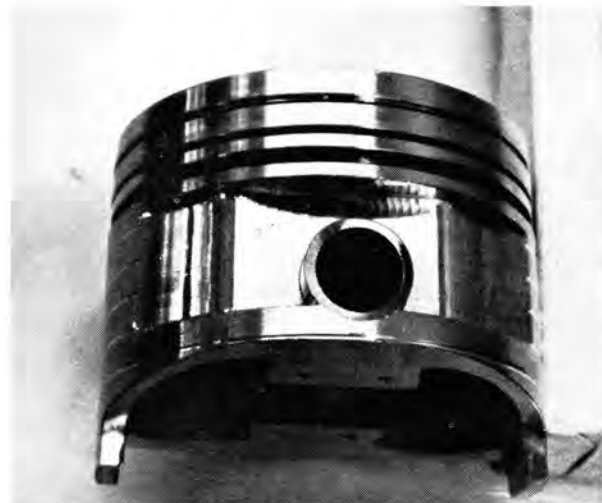
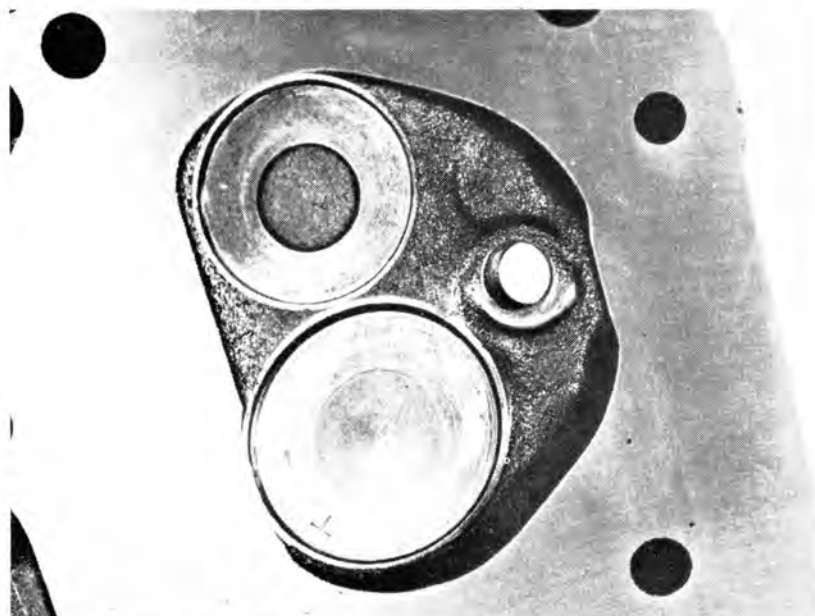
After the crank was returned to Jill, the rods were highly polished along the rails, shot-peened and magnafluxed to check for any flaws. Since the journals were welded and machined for 350 Chevy rods, narrower RA series (hard-soft bearings

to handle high shock loads) were fitted using a special machine tool in the lathe to narrow the bearings to perfect 350 dimensions. Normal factory fit usually means that some bearings will be hanging out while others sit too far in. This tool insures a perfect bearing fit.

The pistons used in this engine were made up by Crankshaft Co. to specifications supplied by Speedwin. First a plaster cast was made of the combustion chambers to show the exact dome configuration needed and then deck height and compression

specifications were forwarded to Crankshaft's Hank Bechtoff. The finished slugs sport Dykes-type sealing top rings and narrow middle rings, and full floating pins. With these slugs the following clearances are maintained: Ring end gap-.030-inch; ring land-.0025-inch; piston-to-wall-.009-inch; piston pin-.0008-inch; deck height-.050-inch; valve clearance-.092-inch.

To comply with NHRA rules, the heads were only slightly modified to insure better breathing. The stock 2.025-inch intakes and 1.625 exhausts



High-rpm valve control is handled by special spring-pushrod kit supplied with Isky 550 solid cam. Combustion chambers and ports were cleaned up and the valves treated to a progressive-angle job. The chambers were leveled off at 52.0 cc's.

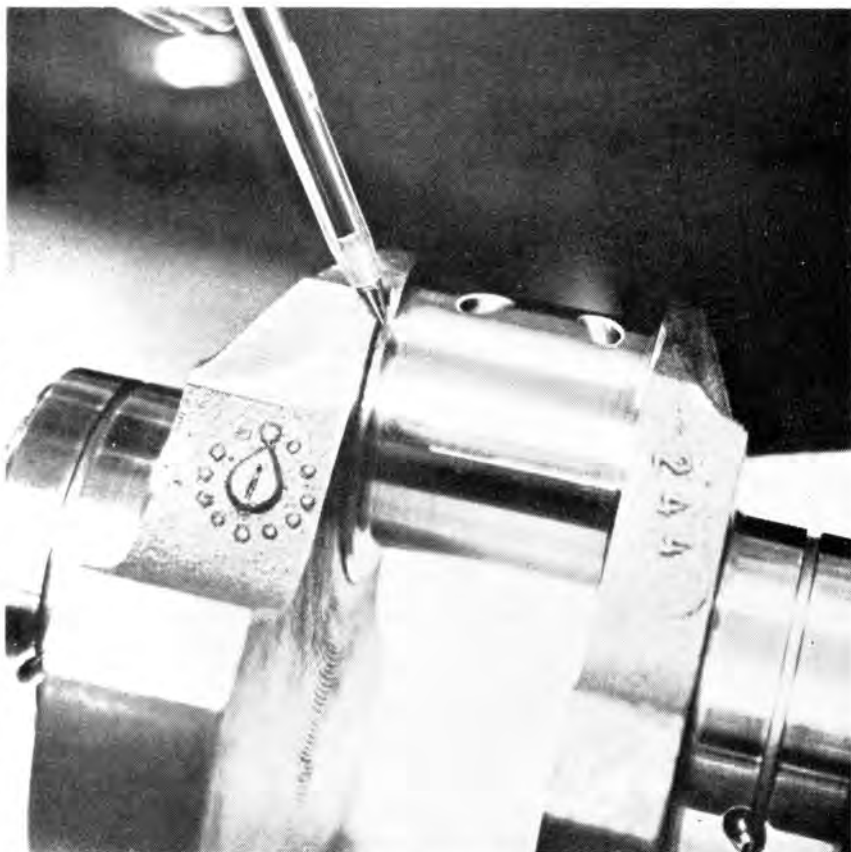
were retained, but fitted after a progressive competition valve job had been performed. All combustion chamber flashings were ground out to insure direct spark flow to the intake valves. The stock springs and valve train were left off in favor of an Isky high-rev kit with special springs and pushrods. The cam is a .544-inch-lift Isky 550 unit and valves are set hot at .030 across the board. For compression ratio of 12.40-to-1, the combustion chambers were checked out at 52.0 cc's.

To further increase the lifespan of the

engine, much attention was paid to the detail blueprinting, which in many cases is taken for granted. Since Carl Schorn decided to go for broke, the block was bored out .030 inches to 350 cubes and the holes finished honed with a 150-grit stone. Then the block was surface-ground on a special parallel rig which insures that the block's surface is 90 degrees perpendicular to the centerline of the crankshaft. The saddles were also align bored. To cut down on lower end friction the crankshaft was micro-finished, and all oil holes were chamfered for increased

efficiency. The mains were also grooved for increased lubrication at high rpm. Additional lower end strength is guaranteed thanks to the installation of special Crankshaft Co. 3/8-inch heat-treated rod bolts.

As soon as the bugs are worked out of the car, we'll go over the running machine and pick up on the tuning and track setup data. For a starter the engine will be fitted with Doug headers, custom-calibrated Mallory ignition, Schiefer clutch and a three-barrel Holley on an Offenhauser manifold.



Joe Jill uses a dial indicator to check deck clearance with the unique Chevy rod setup. Piston pin location has been altered to work with hybrid rods. Crankshaft Co. made up the Dykes-ringed forged 12.4-to-1 slugs. Storm Crank reworked the arm.

To decrease the amount of rod side clearance with the Chevy rods, the rod journals were built up and machined. The Chevy rods were magnafluxed and shot peened. Federal Mogul Alcad bearings are used to absorb the high shock loads. Rod bolts are super strong 3/8-inch jobs made up by Crankshaft Co. for this engine application.

