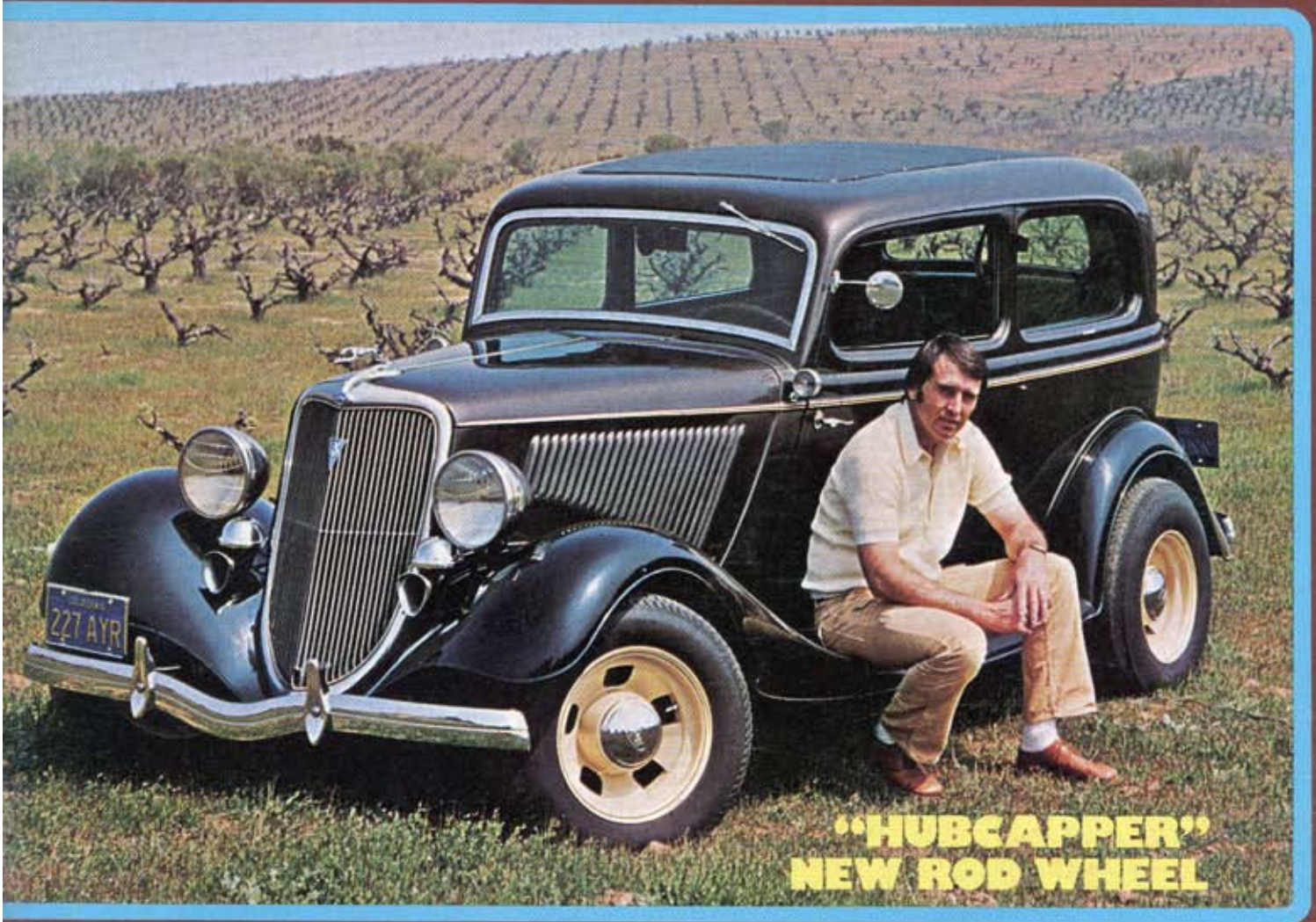
ALL ABOUT CRUISE CONTROLS

RODDER

STREET RODDER

59076-1

JULY 1976
VOLUME 5, NO. 7
$1.25
U.K. 45p
TRM PUBLICATIONS
PDC



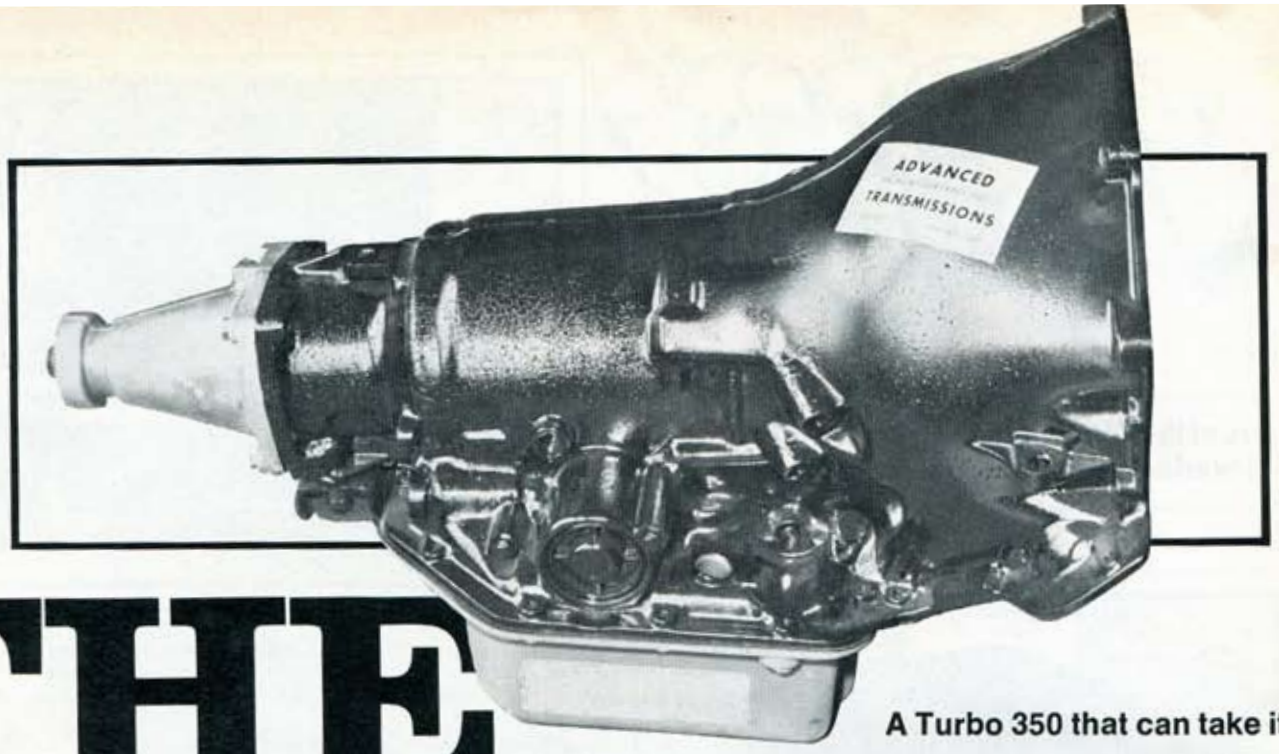
"HUBCAPPER" NEW ROD WHEEL

HOW TO: POWER STEERING FOR STREET RODS

PORTLAND ROADSTER SHOW

TOUGHEN-UP THE TURBO 350

0 07 71658 59076



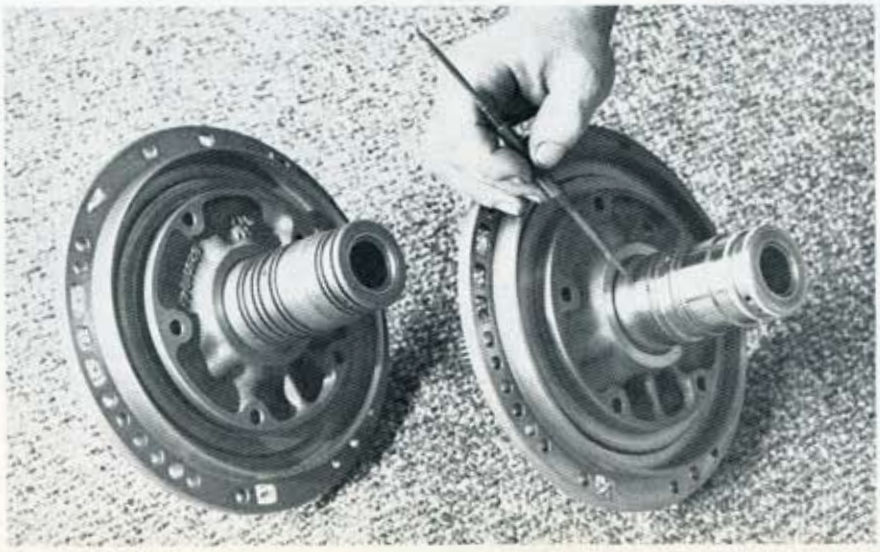
A Turbo 350 that can take it.

THE BULLDOG

by Pat Ganahl

RIGHT—Here's the big problem with Turbo 350's: the high gear/reverse clutch drum begins to wobble on the front pump reaction shaft.

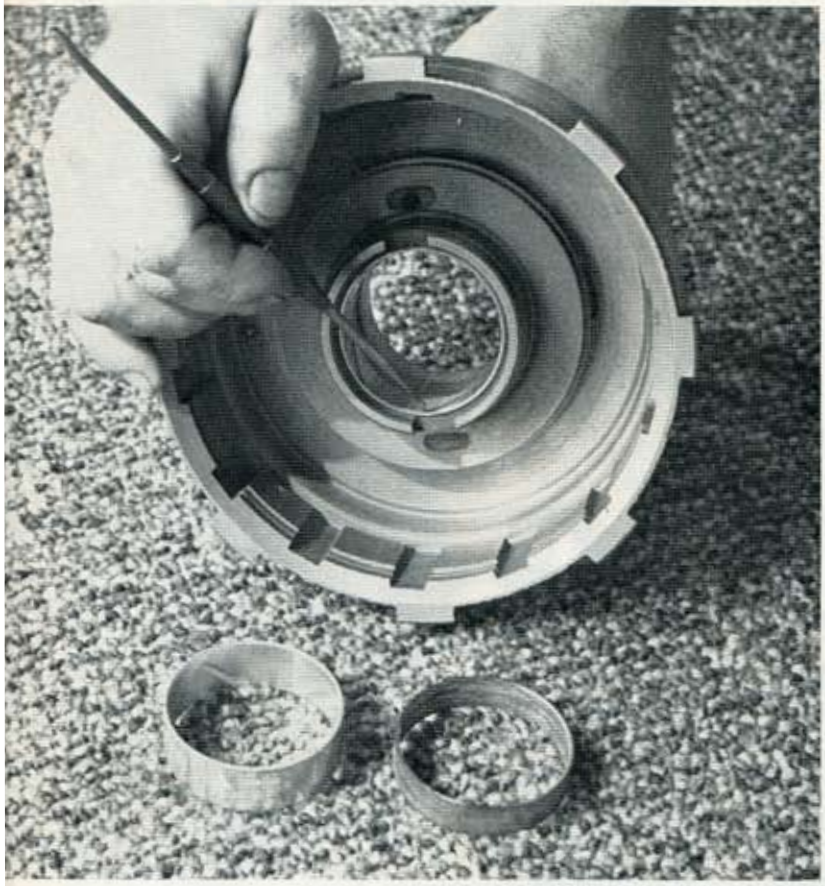
BELOW—And here's the solution: Jim machines a new bearing surface which is pressed over the turned-down shaft. Pointer shows wider bearing surface in the Bulldog.



GM's 3-speed automatic, the Turbo 350, would be a great transmission if it weren't such a piece of junk. In stock form, it's lucky to outlive its one-year warranty; using it for high-performance driving or racing would be foolish. Those who want a tough automatic behind their GM have to take the big and heavy — though rugged — Turbo 400. Street rodders, because of space and budget limitations, often stick with the Powerglide 2-speed.

Until now, apparently no one thought the Turbo 350 worth messing with. If it could be toughened up, however, its advantages look attractive. The Powerglide (although it doesn't slip-n-slide like it used to) is an outmoded transmission. When speaking performance and efficiency (read 'economy') the more gears your tranny's got the better . . . and the P-G's only got two. That means lots of wasteful slipping in the torque converter getting going and shifting gears. The neat thing about 'Glides — especially recent aluminum models — is their compact size, light weight, and most importantly their direct interchangeability with Chevy standard transes. The Turbo 400, on the other hand, offers three speeds and plenty of brawn, but it is longer than the

BELOW & RIGHT—Jim also machines the drum to accept much larger bushings, front and back. Note scored surface of smaller stock bushing, below. New bushings are made of superior material, too.



other GM units, requiring repositioning the rear crossmember and shortening the driveshaft, not to mention hogging out the floor for its bulk. Plus, a good 400 doesn't come cheap at the wrecking yard.

In the new car line, the T-350 is offered as a second-best. If it could be whipped into shape, however, it would make a perfect compromise between the big 400 and the Powerglide, offering the lighter weight, smaller size, and the standard mounting dimensions, along with three forward speeds. Obviously, I wouldn't be writing this story unless somebody had figured out how to make 350's work.

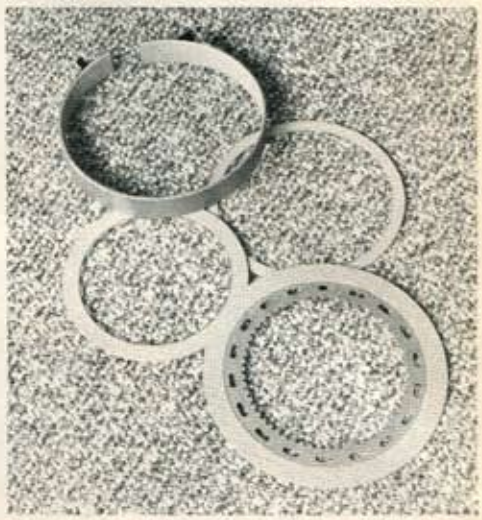
ABOVE—The clutch drum also receives a groove and four small oiling holes to provide lubrication and cooling for the band. LEFT & BELOW—The entire front pump shaft and clutch drum assembly rides on this narrow input shaft, which in turn is supported by the tiny bushing (made of babbitt or even teflon in new 350's) seen at bottom in lower photo. Jim installs a tougher oil-lite bushing, and drills a larger lubrication hole in the shaft (upper shaft in lower left photo).

His name is Jim Galatioto and he runs a shop called Advanced Racing Transmissions out in Ontario (1156 W. Holt Ave., Ontario, CA 91761). Jim builds all sorts of automatics for street, strip, and off-road use, but his baby is the Turbo 350. After several years of studying the carcasses of dead 350's, Jim finally discovered what it was that made them fail. Then he set about devising a cure. He calls his rugged, vaccinated Turbo 350 the Bulldog, and he backs it up with an unconditional, parts and labor, 15-month/15,000 mile guarantee. Perhaps even more impressive, Jim recently tore down a Bulldog that had

LEFT—Jim uses heat-treated sprag race (stock one cracks), and latest Bulldogs will have a new Borg-Warner 36 element sprag-strongest one now available. Retainer ring (bottom) is also slotted to provide extra oiling.

RIGHT—A large groove is cut in the front planetary to allow substitution of roller bearing (right) for the stock babbitt thrust washer.

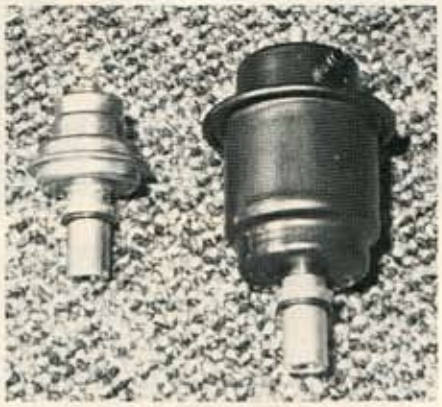
THE BULLDOG

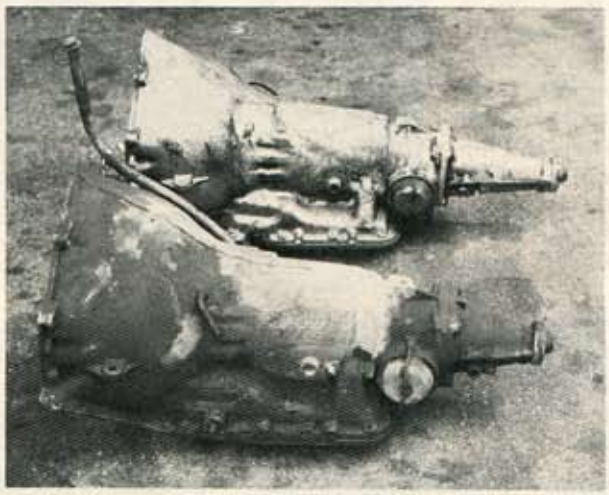


ABOVE—Of course all of the clutch discs and the band are replaced with improved components made with tougher wearing surfaces. LEFT—In case you've got cramped quarters around the tranny, this new mini vacuum modulator (left) helps out.

raced the entire torturous Baja 1000 in a 4x4 pickup, and not a single part had to be replaced!

Jim found that the biggest problem in the 350 — apart from generally insufficient bearing surfaces and lubrication — was the fit of the high gear/reverse clutch drum on the front pump shaft. In most 350's the bearings wear, the drum begins to wobble on the shaft, and then you've got a mess. To keep things where they belong, Jim installs substantially larger and tougher bushings on both sides of the drum, and he also machines a complete new bearing surface for the front pump shaft, which is pressed into place over the turned-down stock shaft. This combined operation gives 65% better support to the drum, eliminating wobble and substantially increasing the life of the transmission. When Jim's done with all the changes, what you have is a Turbo 350 that not only performs much more responsively and operates more efficiently, but which isn't going to wear out for a long, long time. It will cost a small chunk to have built, but we think the money would be well spent in the long run.





LEFT—The standard Turbo 350 is the same length and uses the same mounts as the Powerglide or Chevy stick. Some Canadian and commercial T-350's have longer tailshafts, such as rear trans. 350 cores, like these, can be picked up reasonably at junk yards.

Another unusual feature of the Bulldog automatic is its versatility. Jim actually custom tailors each transmission for the specific vehicle in which it will be installed. Along with an order he asks for the weight, gear ratio, horsepower, cam specs, tire size, and intended use of the vehicle. The transmission comes in three basic varieties, The Super Heavy Duty Automatic for RV's, motor homes, 4x4's, etc., the Street and Strip "automanual," and the Racing Automatic. He also offers four variations in valve bodies which can give regular automatic shifting, automatic/manual, manual only, and a specially reworked valve body to allow a reversed pattern manual shift (PRN 123) for racing which eliminates the possibility of hitting neutral instead of third. Add to this a choice of converters: street/strip, competition, stock, and a special "low stall" unit for big blocks, and you begin to see the variations possible. The photos will point out some of the highlights of a Bulldog rebuild, but for more particulars we suggest you write for a catalog or give Jim a call. The number is (714) 984-3418.