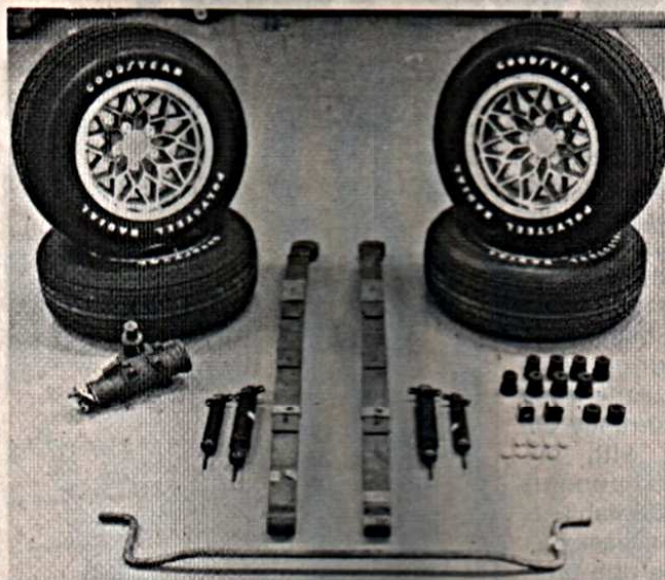


All too frequently, enthusiasts concentrate on maximizing engine performance for tire-smoking acceleration, and something approaching a "WARP 5" top end, without paying similar attention to the handling and braking capabilities of their awesome beasts. And in truth, we at HOT ROD have frequently fallen victim to those same tendencies; because, after all, we too are enthusiasts, first and foremost. However, a car that is all go, no whoa and about as stable in the corners as a skateboard can quickly get you into serious trouble on anything other than a drag strip. Consequently, we decided to take a typical late-model supercar and investigate just what can be done with existing OEM components to make it stick to the

road and stop like a thoroughbred race car while simultaneously retain-

ing a ride that wouldn't offend a member of the "over 30" crowd with



Shown are the components required to update a '77 or '78 Trans Am to the WS-6 handling package. Earlier Trans Ams, Firebirds and Camaros will require a few additional parts, such as front springs, front sway bar, brackets and hardware. These exact pieces must be used to achieve maximum handling, since these tires, wheels (including width and offset) and shocks have been designed especially for the Firebird/Camaro lines and in conjunction with the other components.

ONE GOOD TURN

SUSPENSION MODIFICATIONS FOR '70½ AND NEWER TRANS AM, FIREBIRD AND CAMARO SUPERCARS TO MAKE THEM HANDLE LIKE A RACE CAR—WITHOUT A RACE CAR RIDE

PART 1 By C.J. Baker

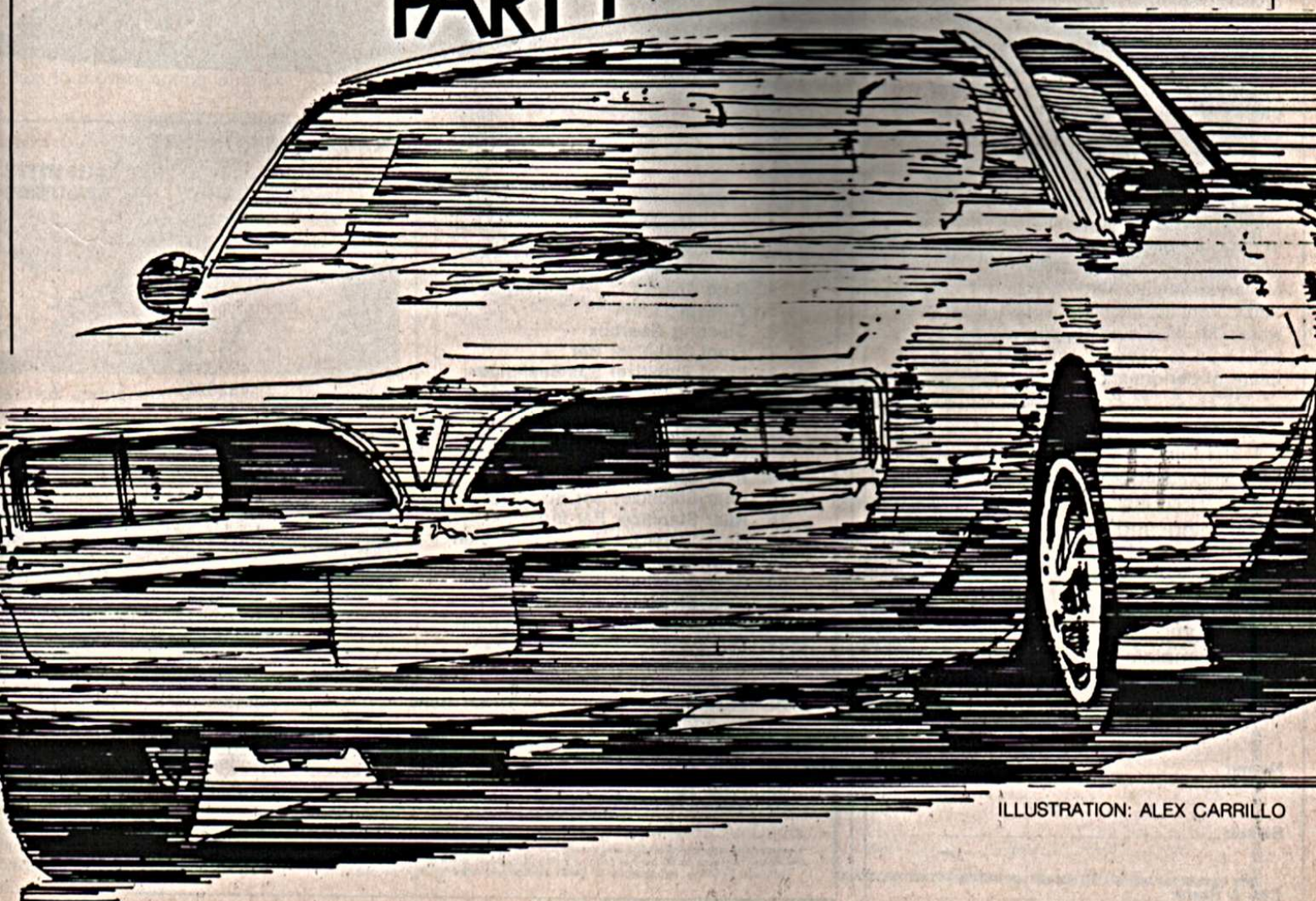


ILLUSTRATION: ALEX CARRILLO

ONE GOOD TURN

Next, we had to define the term "handling." Many hot rodders think of handling as nothing more than how fast a car can go around a cor-

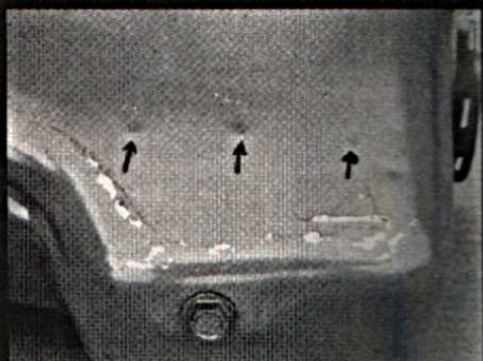
ner, but that's only part of it. Handling is also *how* the car goes around a corner—its tendency toward oversteer or understeer, the amount

of body roll, its stability, predictability and feedback to the driver. Handling is also the ability of a vehicle to make the transition from turning in

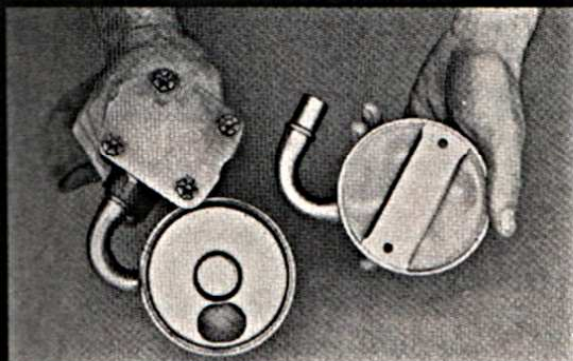
POSITIVE PRESSURE

With the anticipated increase in cornering capability of our modified Trans Am, uncovering the oil pump pickup became a very real concern. The last thing the Boss wanted was a connecting rod hanging out the bottom of his oil pan! In stock trim, oil control in cornering situations with a Trans Am is at best marginal. The factory has realized this critical problem and developed a baffled oil pan used on all '72 and later TAs with the high-output engine. This helps oil slosh which might uncover the pickup, but the problem can still pop up. Part of the problem has to do with an excessive amount of oil collecting in the valve covers at high rpm. This can be controlled with more restrictive TRW hydraulic lifters, but such lifters shouldn't be installed until after the engine has been "broken in," to assure adequate lubrication while the valvetrain components seat.

Another cure that is equally effective has been developed by the folks at H-O Racing Specialties in Hawthorne, California. They manufacture a swinging oil pump pickup that follows the oil as it sloshes around in the pan. They also offer an Oil Saver Kit that supplies oil to the engine if the oil pickup should become uncovered. Essentially, it is an accumulator that is pressurized by normal engine oil pressure. If the pump sucks air and loses pressure, the accumulator supplies pressurized oil to the engine in the interim. This device can be used successfully on any engine, Pontiac or not. **HR**



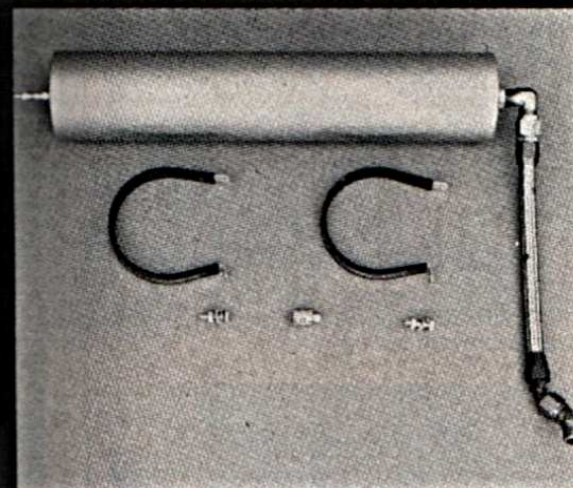
Without removing the pan, you can determine if a Pontiac engine has the baffled pan by checking for these three spot-weld bumps along the left side of the sump.



The late-model pump (left) features a pickup that uses only a small opening positioned roughly at the center of the sump, thus reducing the likelihood of sucking air during hard cornering.



This Pontiac oil pump has been fitted with the H-O Racing Specialties swinging oil pickup, thus greatly reducing the chances of ingesting air into the lubrication system. The swinging pickup is not recommended for use on serious drag racing engines, since the pickup point tends to be farther forward than with the stock oil pickup, but for handlers it's a must.



This is the H-O Racing Specialties Oil Saver Kit. It features top-quality construction, and it is beautifully simple. Even a special plug removal tool is included.



Shown on the left is the Pontiac oil pan without the baffle. The other pan, used on high-output engines, features the L-shaped baffle.



Even in the tight confines of the Trans Am engine compartment, the Oil Saver fits neatly behind the air cleaner and shaker hood scoop. If the car is fitted with cruise control, the actuator bellows will have to be clamped to the Oil Saver tank, as shown in this installation.

ONE GOOD TURN

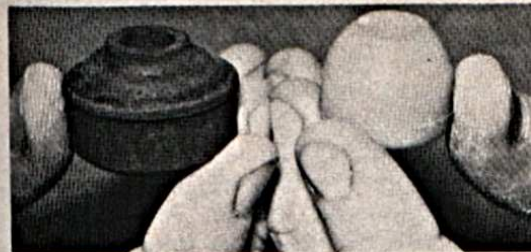
a Sunday morning hangover. Impossible, you say? Read on. You're in for a surprise.

Before we could realistically begin this project, we had to select a suitable car, determine our exact goals, and come up with a meaningful test to evaluate the final results. The car selected was a '77 Pontiac Trans Am, which coincidentally belongs to our publisher, Holly Hedrich. This turned out to be a particularly good choice, since the TA is currently enjoying such popularity with enthusiasts; virtually all components used would be equally adaptable to Camaros; and last but not least, our requirement for acceptable ride quality would be paramount, since the Boss does *not* like to have his morning coffee splash out of his coffee mug at every tar strip on the pavement as he drives to work!

(continued overleaf)



Nut-serts are a must on the sway bar brackets to prevent the bolts from pulling out of the frame with the increased sway bar loads.



The soft rubber front sway bar link bushing (left) is replaced with much harder polyurethane bushings. These bushings are the critical factor affecting front sway bar control. Installed as shown, these bushings will increase the roll stiffness of any front sway bar.



HELP US GET DETROIT INVOLVED AGAIN

At present, all of the WS-6 suspension pieces are available, but they must be purchased separately. Consequently, ordering all the pieces becomes a hassle, and the separate-piece pricing structure isn't as economical as it might be. However, Pontiac might be persuaded to combine all of the pieces into a complete kit for updating earlier ('70½ and newer) Firebirds, Trans Ams and Camaros with a much more attractive package price.

You can help make Pontiac aware of the number of potential customers interested in such a package by mailing the accompanying coupon to: Mr. Alex Mair, General Manager, Pontiac Motor Division, 1 Pontiac Plaza, Pontiac, Michigan 48053. If we overwhelm Mr. Mair's office, you can bet things will begin to happen, so invest 13¢ in the future of performance. Do it today!

Dear Mr. Mair:

I am interested in purchasing the handling components described in the July '78 issue of HOT ROD Magazine. You and Pontiac Motor Division could provide a great service to enthusiasts who wish to update their '70½ or newer F-body vehicles with these components by offering them as a complete kit at an affordable price.

Sincerely,

Name: _____

Street: _____

City & State: _____

SUPER HANDLING PACKAGE COMPONENTS

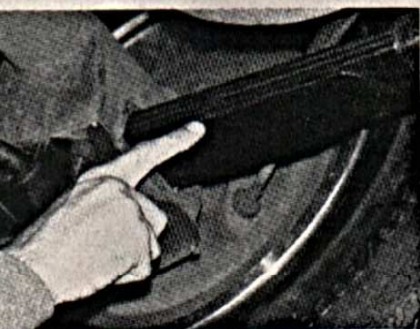
ITEM	PART NO.	QUANTITY REQUIRED
1. Front Springs	6262430 ₁	2
2. Rear Springs	481132	2
3. Front Shocks	22012400	2
4. Rear Shocks	22012401	2
5. Wheels	10002467	4
6. Steering Gearbox	7829773	1
7. Front Stabilizer Bar	356534 ₁	1
8. Front Stabilizer Bar Bushings	482331 ₁	2
9. Front Stabilizer Bar Brackets	482332 ₁	2
10. Front Stabilizer Bar Bolts	see dealer ₁	4
11. Front Stabilizer Bar Nut-Serts	see dealer ₁	4
12. Front Stabilizer Bar Grommets	10002641	8
13. Rear Stabilizer Bar	10000606	1
14. Rear Stabilizer Bar Bushings	10000784	2
15. Rear Stabilizer Bar Insulator	494600	2
16. Rear Stabilizer Bar Link Bracket	3883360 ₁	2
17. Rear Stabilizer Bar Bracket	3982300 ₁	2
18. Rear Stabilizer Support Bracket	486051 ₁	2
19. Rear Stabilizer Bar Bracket Bolts	see dealer ₁	4
20. Lock Washers for Bracket Bolts	see dealer ₁	4
21. Nut-Serts for Bracket Bolts	see dealer ₁	4
22. Rear Link Bracket Bolts	see dealer ₁	2
23. Nuts for Link Bracket Bolts	see dealer ₁	2
24. Lock Washers for Link Bracket Bolts	see dealer ₁	2
25. Rear Link to Bar Bolts	see dealer ₁	2
26. Nuts for Link to Bar Bolts	see dealer ₁	2
27. Lock Washers for Link to Bar Bolts	see dealer ₁	2
28. Rear Spring Shackle Bushings	499473	8
29. Tires—(Goodyear P225/70R15 Polysteel Radials—TPC Spec. 1033) ₂		

1—Standard equipment on '77 and newer Trans Am models

2—Adjust pressure to 30 psi hot (after 2 miles of highway driving) for street use. If tires are cold, inflate to 26 psi. For maximum off-road handling, inflate fronts to 34-36 psi hot and rears to 29-30 psi hot.



ome twisting and pushing is the new constant 14:1 power steering has slipped into place from beneath the stock variable-ratio box features until the wheel is turned more than 90 degrees, the new box provides full-time assistance for fast response. It also provides better road feel. When making the change, remove the old gearbox before removing the position of the pitman arm. Center the gearbox prior to installation. Once in place, attach the pitman arm in roughly the same position, making sure keyways line up.



Spring shackle bushings (top and bottom) are replaced with new ones at a 25-pound higher rate and one extra is added to prevent spring windup.



Car spring shackle bushings (top and bottom) are used with the new springs. The new bushing is already pressed into the assembly.



With the new rear shocks, the rear sway bar is replaced with a larger diameter bar, and the rear and insulator bushings, to make the ride more effective. Earlier cars will need all of the required brackets, bolts, nuts and lock washers, too, since in many cases no rear bar was included originally.

GOOD TURN

one direction to turning in another. Oversimplified, handling amounts to keeping the tread face of the tires in maximum contact with the road surface, control of the body in relation to the suspension, and basic drivability of the vehicle. This last point means that the car will be responsive to the controls. These are the things we wanted to optimize in our project.

Now that we had a car and a goal, we needed a realistic evaluation. The obvious answer was to arrange for a professional driver, who knows and appreciates good handling and braking when he experiences it, to test the finished car on a demanding road course. And that's how this two-part feature will culminate next month. We have arranged for one of the hottest shoes in the USAC Championship, IMSA and Formula 1 competition, Danny Ongais, to put our Trans Am to the ultimate test at Willow Springs Raceway.

We'll begin this month with suspension mods to the '77 TA, plus a few safety precautions in preparation for the Willow Springs test session. As it turned out, Pontiac Engineering had already done all of the necessary development work to provide a handling package for the TA that will make it do everything we had envisioned, and in fact, the handling package, dubbed the WS-6 option, is available on any '78 Firebird or Trans Am. So in the accompanying photos we'll show you what this package consists of, and how it can be backfitted to any '70½ and newer Trans Am or Camaro. It must be noted that to work properly, the total package must be installed using these exact components. Substitution of so-called equivalent parts could, and probably will, significantly detract from the end result, as each piece was specifically engineered to complement the other parts. It should further be noted that the inner wheelwell clearance on Camaros is slightly more restrictive than it is on Firebird and Trans Am models. Consequently, care should be taken to provide tire-to-inner-fender clearance at the top of suspension travel when these components are installed.

Next month we'll conclude this feature with the installation of the new '79 Firebird and Trans Am four-wheel disc brake package, which will be offered as an option. We'll also update

(continued on page 101)

SUPERCAR SUSPENSION

(continued from page 72)

the exhaust system to the less restrictive '78 system, and then it'll be off to Willow Springs to let it all hang out.

JUST IN CASE

Since our plans called for an all-out thrash at Willow Springs Raceway for 2, with none other than the current USAC Championship points leader, Danny Ongais, behind the controls, we deemed it prudent to add a bit of driver protection to our Trans Am. The good people at Hot Headers in Ontario, California, installed one of their really nice 2½-inch chromed rollbars. Installation takes the best part of a day, since the rear seats and rear window molding must be removed to provide removal of the interior panels that cover the inner wheelwells. It is these panels that must be cut for the rear diagonal supports of the rollbar, and to gain access to attaching the rear diagonal struts. The interior pieces are reinstalled, providing a factory look to the whole installation. Rear-seat access and utility are virtually unchanged after the rollbar is in place, and the rollbar certainly adds authority to the already attractive Limited Edition Trans Am.

After installation of the rollbar, we took the car to Deist Safety Equipment in Calexico, California, where Jim Deist installed a set of his competition seat and shoulder harnesses, thus providing excellent protection for anyone who drives or rides in the Boss's car.

