

PROJECT STRAT-O-STREAK '55



Above & Right — The finished product incorporates big 1963 drum brakes, cool aluminum eight lug wheels and ball joints through the use of 1958 upper and lower A-arms. Even the stock '55 sway bar is still in use. A nice blend of Pontiac parts.



Swapping A-Arms on a '50s Ride: Balljoints Instead of Kingpins, Easy Adjustment, and Cool Wheels are just a few of the benefits!

by Gerry Burger

In our last installment on Project Strat-O-Streak we installed a Saginaw 605 power steering box (see RD #62). The installation went easily, and updated the steering. The next job at hand was to upgrade the front suspension. We decided it would be neat to run a set of old eight lug wheels like you used to see on '61-'64 Grand Prix, Catalina, Ventura and Bonneville (actually these wheels were produced from 1959-1967, they sure looked good on '61 Venturas, with 421 flags... but back to our story). The question was how would it all work out?

Well, to start we knew that 1958 Pontiac lower A-arms would bolt in place (thanks to Jim Campbell at Bingham Automotive in Denton, NC, for that info) and these units would provide us with lower ball joints. The stock '55 front suspension was still a king pin design. The stock '55 front suspension was also

adjusted by a series of eccentric bushings on the spindles and we wanted to eliminate that system in favor of the more modern shim system. That meant either adapting ball joints to the stock '55 upper A-arms or using a later model unit. We opted for the 1958 Pontiac upper A-arms too. This gave us ball joints on upper and lower A-arms, and a set of '63 Pontiac spindles, brakes and hubs bolted in between these ball joints, providing the desired 8-lug aluminum drum wheels and a lower stance, but I'm jumping ahead of myself here. First the upper A-arms had to be adapted to the '55 chassis.

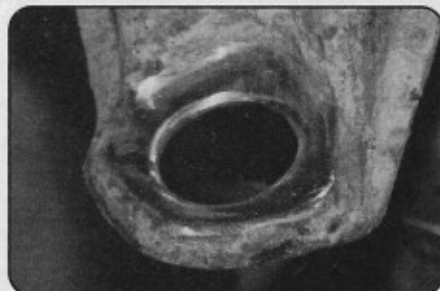
Since my car was still up at Buster's Frames and Components in Rock Hill, S.C. (803/366-2390) we decided to do the A-arm swap there before putting the '55 on the trailer and hauling it home to Florida.

Our first job was a trip to Bingham

Automotive in Denton, North Carolina (7799 NC Hwy 49, Denton, NC phone 704-869-5880), to pick up the Pontiac parts. We originally went to get A-arms and spindles, but when we arrived we were just a bit overwhelmed by all the neat stuff he that Jim and Terry Bingham had in the yard. That included a very nice set of Pontiac 8-lug wheels... we left with a Jeep full of Pontiac parts. As a side note these guys are great to work with, they're hot rodders themselves, they help you get the stuff you need, and at fair prices. They have a very large yard full of forties through seventies stuff, with the main focus being on fifties and sixties cars. While we were there we did a little bench racing, told a couple lies, took a couple photos of Jim Campbell's rare '53 Pontiac Woody, and even found out I was traveling with a famous video guy, but that's another story. With the parts in



Above — Our A-arms came from Bingham Automotive (704-869-5880) but were sans ball joints. We adapted '69 Chevelle units



Above — One hole lined up, the other original holes were welded closed and ground smooth.



Above — Transfer the bolt pattern of the Chevelle ball joints to the A-arms and drill.



Above — The finished ball joint is bolted in place with the supplied bolts, just like factory, but easier to find than the 1958 ball joint. All this will come apart later and be sand blasted and powder coated or painted.

the Jeep we turned south towards Rock Hill.

Once inside the shop, we unbolted the stock '55 front suspension from the car. If you have never disassembled a coil spring front suspension follow instructions in a Motors Manual or Chiltons, even better have a buddy around to give you a hand who has done one before. You sure don't need coil springs flying around the room! The front of the frame was already on jack stands, at this time we jacked up the rear of the car to give the car the "proper stance". This is the angle that you would like the finished car to rest at. Keep it pretty close to level since the engine will drop the front. We did this operation by a combination of "eye" & the use of a level, with the resulting slight forward rake to the empty frame.

After stripping the chassis of front suspension we bolted the lower '58 Pontiac A-arm in place, and sure enough it was a bolt in operation. That located the center



Above — With 4-1/2° king pin inclination, and a level outer hub, the top A-arm mounting bracket was tacked into place.



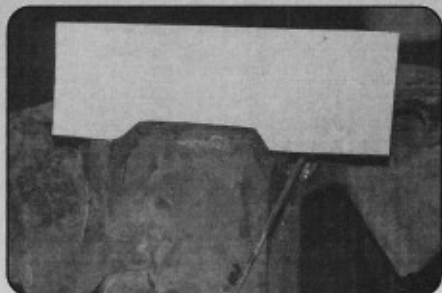
Above — The 1963 Pontiac brakes and aluminum hubs bolt to the bottom A-arms. The lower arms are 1958 units, and they bolt into place, same as the original, except they have the needed ball joints. The '58 upper arms are bolted to the '63 spindles, and Larry Long locates the upper A-arm bracket location on the chassis by using a level to get the hub perpendicular.

of our spindle for us. A floor jack raised the lower A-frame to a level position. Then the '63 spindle, hub and brake drum assembly was bolted to the lower A-arm via the lower ball joint.

The upper '58 Pontiac A-arms that we had purchased were missing ball joints, our local parts dealer didn't have two '58 ball joints in stock (I tell you, these parts stores just don't carry the right stuff!) So, we opted to adapt a set of '69 Chevelle ball joints to the upper arms. The process



Above — The bracket and A-arm assembly is tacked in place, measurements re-checked and then final welding is completed, suspension work should always be welded by a certified welder.



Above — That upper bracket must be fabricated. We started by making a cardboard template, then cut the finished bracket out of 3/8-inch steel. Clean and simple, when in doubt make it stout.

is really quite simple. First slip the ball joint in place on the A-arm. You will note that one stock hole lines up. Using this hole as a guide we transferred the centers of the other three holes using a transfer punch (hence the name transfer punch). Buster's main man, Larry Long, drilled the holes in one A-arm while we filled the unused stock holes with a welder and ground the welds flush. The results are a nice set of '58 Pontiac upper A-arms with later model ball joints, and yes they are the same taper as the 1963 Pontiac spindles. With that done we carried the A-arms over to the car, and bolted them via the ball joint to the top of the spindle.

At this point we have a 1963 Pontiac spindle attached to 1958 Pontiac lower and upper A-arms. The remaining task is to mount the upper A-arms to the '55 chassis and then get the '55 steering connected to the '63 spindles, keeping good geometry in mind at all times.

The original '55 A-arms were bolted flat to the top of the chassis. We mounted the new '58 A-arm 90° to the chassis so shims could be used for final alignment using a simple fabricated bracket (see photos). A template was cut from card stock and fit to the chassis. We dropped



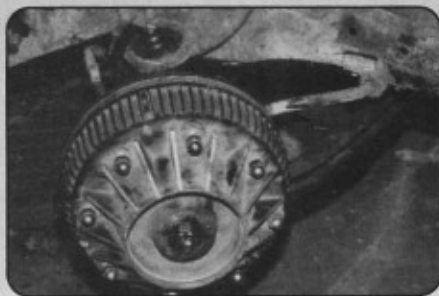
Above — The A-arm is removed for final welding. Here you see the inner side of the bracket fully welded. By dropping the bracket down on the front of the cross member we stiffened the bracket. The crossmember was ground clean before welding; never weld on rusted, dirty metal.



Above — The outboard side of the bracket in finish welded state. We used the stock shock tower as a gusset, welded it in place and to the new bracket to act as a gusset.

down to the front of the crossmember with the bracket for added strength. Anti-dive was built into the upper mount by having the front of the upper A-arm higher than the rear of the A-arm. Use a degree indicator to match the anti-dive measurements of the A-arm donor car.

This cardboard template was then transferred to steel and cut out of 3/8" plate. Two holes were transferred from the '58 A-arm shaft to the brackets and drilled. The A-Arm was bolted to the bracket. We used four washers between the A-arm and the bracket to simulate shim space for future alignment. The upper A-arm was located by using a level across the face of the outer drum to bring it to perpendicular (90°). Then the bracket was located on the '55 chassis, and the level checked to 90°. Buster had a wheel alignment gauge so we mounted that to the hub and marked the proper location of the bracket for camber & caster. Our Chilton's Manual shows that the king pin inclination in degrees is 4-1/2° with -1° to 0° degrees caster (-1/2° preferred setting) and 0° to +1° camber with a +1/2° being the preferred setting. These are the specs for stock '58 Pontiac. We got close to these settings, but without the engine in place for weight we could not really set the front end. We did want to be certain we were "in

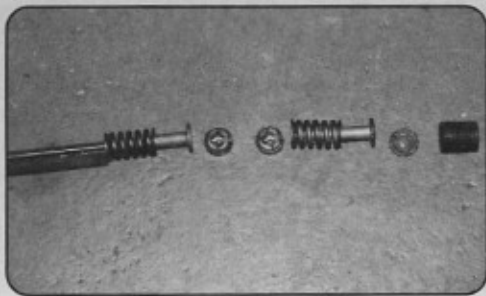


Above — Both A-arms are bolted in place and the '63 hubs and drums are mounted to the '63 spindle. These wheels will look super once they are detailed.

range." Then the bracket was tacked in place. Stand back, think, measure, double check the level and alignment gauge (a degree indicator can be substituted for the alignment tool) before final welding.

We felt a gusset would be a good idea to additionally strengthen our new upper A-arm bracket. Rather than fabricate a gusset we used the stock shock tower. It was originally bolted in place but required a little judicious grinding to fit back in the original location. The bolts were forgotten and the shock towers were welded in place on the frame and to the back side of our new A-arm bracket providing the additional gusset. That completed the A-arm swapping portion of the job, now we had to connect the steering.

Since we had already adapted the '55 pitman arm and connecting rod to the new 605 box, we knew the '55 tie rods must remain. The '63 steering arms swept back towards the center of the car more than the old '55 units, so the connecting rod and tie rod rods were effectively too long. We took care of this by removing approximately 3" (check your own measurements in case steering arms vary, etc.) on each side. We did this by cutting the tie rod ends in the straight portion of the rod. The ends of each remaining half were chamfered and

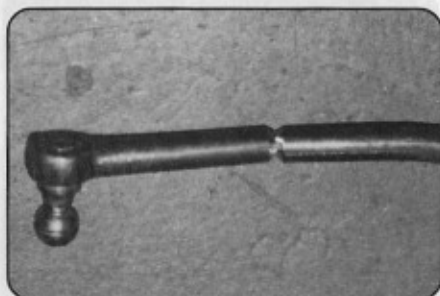


Above — The tie rods were too long so we removed them to shorten each side. They are held in by a series of springs and spacers and a larger tension plug in each end.

welded together. That weld was ground smooth and then a split sleeve was placed over the weld portion of the tie rod and welded length wise and around the ends of the sleeve. These welds were lightly dressed for appearance, then both units were magnafluxed to check for structural integrity of the piece (Obligatory Legalese: if you are not a certified welder, find someone who is for this job, but we shouldn't have to say that, should we?).

With the tie rods shortened equal amounts, the '55 tie rod ends slipped right into the bottom of the '63 steering arms. That's the good news, the bad news is when the tie rod ends were put in the bottom of the arms, the tie rods were not parallel to the lower A-arms, and that folks is a formula for bump steer. The solution was easy enough, we re-tapered the '63 steering arms from the top down, loosened the tie rod ends and rotated them and slipped them into the new taper on top of the steering arm. The project was complete. The steering worked fine lock to lock. All our geometry was looking good, the only thing left to do was install the coil springs.

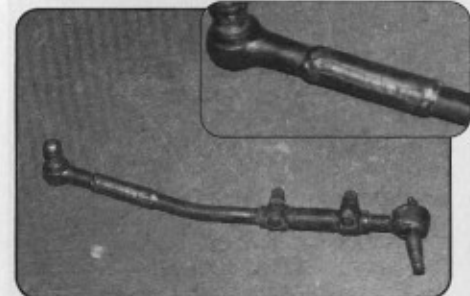
We had to cut 3/4 of a coil from the bottom of the '55 spring (we're not sure but '58 units may work uncut) because the spring pocket is deeper on the '55



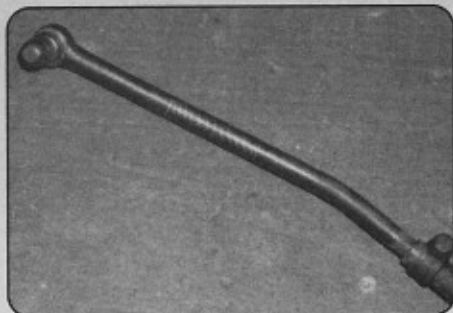
Above — After cutting the tie rod, chamfer the ends to allow for good weld penetration. This type of suspension welding is best left to the pros . . . magnaflux the parts before use to ensure the weld is structurally sound.



Above — Now take the two pieces, clamp them into a piece of angle iron to be sure that they are straight; then tack weld, rotate, tack weld and rotate and tack. Then make a good hot pass to burn it all together. Dress the weld smooth with a grinder. Let all parts cool slowly, do not cool rapidly by dunking in water!



Above — We fabricated a split sleeve from heavy wall tubing to slide over the welded area. This sleeve is then welded around the end and down the center seam to ensure that the repaired rod will not fail. A light dressing with a grinding disc makes it look presentable.

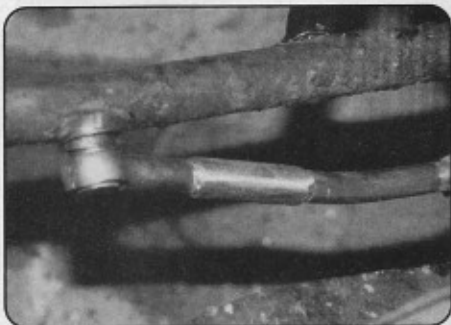


Above — The stock tie rod end was marked, we removed approximately three inches (see text). Cut the tie rod in the straight area, NOT in the bend.

lower A-arm than it is on the '58 A-arm. After installing the springs the eight lug wheels were bolted to the big Pontiac hubs and Project Strat-O-Streak hit the ground with a much lower altitude. This lowering with full suspension travel is due to the difference in the spindles. The '63 spindle has the bearing stub located in the middle of the spindle, while the '55 spindle has the bearing stub on the very bottom of the spindle. One last turn lock to lock to be certain every thing cleared, then a couple of us stood on the chassis to imitate the weight of an engine, you know the routine (no, motor sounds were not a part of it). The suspension suspended, the steering steered, the Pontiac eight lugs looked great and the car was sitting nice and low . . . a good week-end's work.

The shocks will be installed later, in stock fashion. We anticipate finding a later model gas shock to mount inside the coil spring; since it's a double stud design it should be easy to find one the proper length. When we do we'll publish the shock number that fit for us.

The Pontiac was rolled up on my borrowed trailer (thanks Richie Weber) and the 600 mile trip home was a driving experience, but the '55 is now safely in my own shop, next step is to build the motor mounts for the big 421 and four speed combo, then clutch and brake pedals . . . stay tuned, Project Strato-O-Streak is on a roll. **RD**



Above — The completed finished unit is reinstalled into the stock 1955 connecting rod. All this will come apart later for final assembly and detailing.

(Continued Next Page)

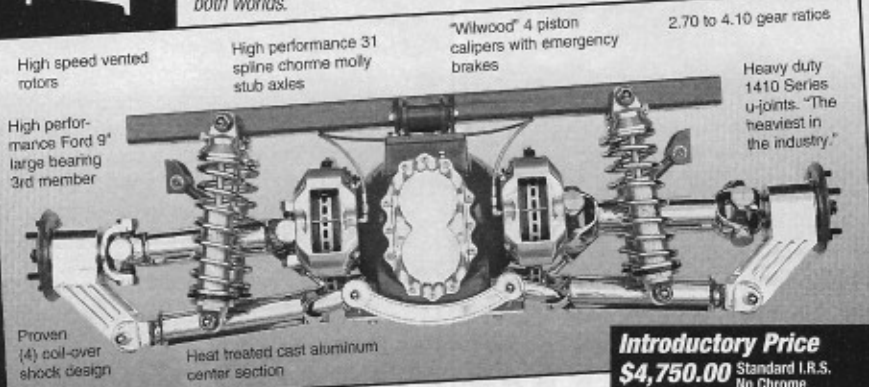
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Rear

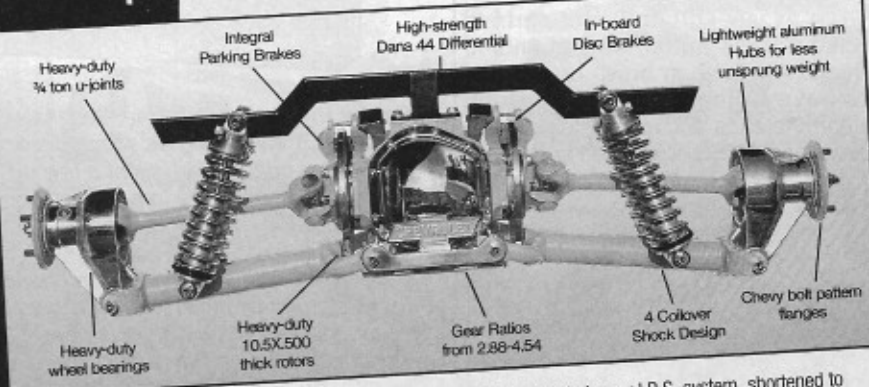
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Project Strat-O-streak

Continued from page 33

Below — The completed unit gives us 1963 wheels, big drum brakes (yes we will be adapting '63 brakes to the rear) and the good looks of eight lug wheels. All of this is in keeping with the concept of the car, that is use the best parts you could find in the mid-sixties. So far so good, if you wanted late model disc brakes up front it would be as simple as finding a spindle and brake set up from a late model, then employ the same basic principals as we have here. We like our approach: it's different, it's Pontiac, it's low buck, and it all works well and can be done at home by most experienced rod builders. Next step: engine mounts . . .



Above — We shortened the bottom coil about 1-1/2 inches to compensate for the shallow spring pocket in the lower A-arm of the 1958 Pontiac units. The '55 pockets were deeper. It's best to use a die grinder to shorten the springs, if a torch is used be certain to let the spring cool slowly. We had to heat the lower coil to bend it flat so it would sit in the pocket correctly.



Below Right — Did we mention that Bingham Automotive has some fifties and sixties cars? This is just a few of them, we'll show more in a later issue . . . 704-869-5880 . . . Tell 'em RD sent you!

Below — Project Strat-O-Streak heads for home. Thanks to Buster's Frames & Components for storing the car and working with us on the front suspension installation. Buster can do anything from turnkey cars to basic hot rod repair, he can be reached at 803-366-2390. Also thanks to Richie Weber for loaning the trailer and the guys at Bingham Automotive for coming up with the right parts.



☆ Pontiac Suspension Parts Used ☆

1958 Upper & Lower A-arms
1969 Chevelle Upper Ball Joints
1963 Spindles & 8-lug Brakes
1955 Springs, Tie Rods, Sway Bar

