



# Buckeye Triumphs Newsletter

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 6-Pack Chapter  
 Center of Triumph Register of America  
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## 20th Annual Immke Classic Auto Show & Cruise-In - July 5th and 6th



If you don't attend any other car event this summer, you should attend the Len Immke Arthritis Foundation Classic Car Show and Cruise-In on July 5th and 6th at the Dublin Metro Center.

The Cruise-In takes place Friday, July 5th. Based upon previous years, Cruise-In attendance will exceed 1,000 antiques, classics, street rods and sports cars. If you want to park with other Triumphs, plan to be there by 4:00 PM. Awards will be given in multiple classifications. Friday night's entertainment will be provided by the nationally-known Elvis impersonator, Mike Albert.

The actual Car Show takes place on Saturday, July 6th. The show begins at 9:00 AM and runs most of the day. Thanks to Murry Mercier, there will be another Triumph Show-Within-A-Show with awards given for the various TR classes. After all car show winners have been chosen, there will be a parade of the first-place award winners. First, second and third place winners will be announced and first place folks will be given their plaques during the parade ceremony. Saturday evening's entertainment is "Phil Dirt and the Dozers", a well-known 50's and 60's singing group.

If you haven't registered already, you can contact Murry Mercier for details or get them on-line at [www.arthritisautoshow.com](http://www.arthritisautoshow.com). Tickets at the gate will cost \$15.00 for the Friday evening Cruise-In, \$25.00 for the Saturday Car Show or \$30.00 for the weekend.

Plenty of food and drink vendors will be on-hand, so you need not go hungry or thirsty. Plan to attend and don't forget to bring your folding lawn chairs.

## BT Driving Event - Saturday, July 20th

As was discussed at our winter schedule planning meeting, we will drive to the Longaberger Basket Factory on Saturday, July 20th. We decided to go there to check it out for a 6-Pack TRIals event. John and Charma Huddy will be our hosts for the tour, which will leave from downtown Granville, in front of the Aladdin restaurant, at 10:00 AM.

(Come early, if you want to eat an excellent breakfast.) We will head to Dresden, by way of BFE, using only "blue" (secondary) roads. John will lead us in his TR6 and he promises not to exceed the posted speed limit (by more than 50 MPH). Once we arrive at the Longaberger Factory, we will take a tour of the facility, and then, press on to the Longaberger Homestead for a lunch stop. From there, we will proceed to Tom's Ice-Cream Bowl, in Zanesville, for a bit of dessert. After saying our goodbyes, we will all scatter in our own directions.

If you plan to attend, please let John or Charma know by July 14th. Their phone number is (614) 846-2321 or their e-mail address is [jhuddy@columbus.rr.com](mailto:jhuddy@columbus.rr.com).

## Report from the Mid Ohio Vintage Races

*Editor's Note: Robert M. Lang is a frequent contributor to the 6-Pack Digest pages, and he is the editor of the New England Triumphs newsletter. I found the following account of the event entertaining and I think you all would too...*

Date: Tue, 18 Jun 2002 13:11:04 -0400 (EDT)

From: "Robert M. Lang" [lang@isis.mit.edu](mailto:lang@isis.mit.edu)

Subject: Re: News on Mid-Ohio

Hello. The event at Mid-Ohio was a resounding success. The turnout was a bit different that we might have expected, but awesome nonetheless. The Triumph feature race had over 50 cars take the green, and I recall from the time sheets that about 45 took the checkers. So - it was awesome.

There were so many highlights, that it's hard to summarize. But a short list of highlights would have to include Triumph over adversity, folks chipping in to help fellow competitors and in some cases just plain bad luck.

On the serious side, one of the British drivers in a TR5 (not injected, but Weberized) that can only be described as "wicked fast" looped his car during a Friday practice and crashed pretty hard into the wall after turn 14 - with the front of the car. The driver was uninjured and with several well known Triumph "friends" pitching in was able to take the car to a local frame shop and get everything in order to make the all Triumph feature \_and WIN\_. WOW.

*Editor's Note: here is a picture:*



There was a TR4 rollover in one of the Friday practice sessions, but that car made the feature. And there was another rollover during the all Triumph practice session on Friday (George Wright) that was a bit more serious in nature as an axle broke in turn 8. Various circumstances surrounding that episode led to an early departure by the participant. There were no bodily injuries to the drivers, to the best of my knowledge.

On the lighter side, the Brits were really fun to have around. The preparation of their cars is amazing, and they were all really good drivers. They like to have their fun too, so there was lots of fun. Stateside TR3 driver Mike Jackson was fast as usual - perhaps a bit too fast for an unsuspecting skunk who happened onto the track during a practice session. As the announcer related - the remains were left at turn 10. And 11 and 12. The corner workers rewarded Mike with an autographed checkered flag and a salute to the car now named "Petunia" by holding their noses as he drove by.

Kas Kastner seemed to be enjoying himself going around talking to all the Triumph racers as well as signing autographs etc. ADU 4B made the scene in the exact livery as the car was raced at Sebring in '65 - by Mr. Kastner. TRF brought the #25 TRS LeMans prototype, a fitting reminder that this weekend was shared by the 2002 edition of this famous race. A cool car, indeed.

Crabtree was there taking panoramic pictures, one of all the racing Triumphs assembled at the infamous "keyhole" and one of all the cars on the show field for the participants choice on Sat. I'm sure these pictures will be hot sellers.

Oh, the car show! I lost count of the Triumphs. There were at least 200 on the show field on Sat., and that was a minor miracle owing to the "delightful" weather, if wind-driven drizzle is your idea of delightful. The temps. in the lower 50's didn't help much either, but it was an impressive array of Triumphs large and small. I'll bet that there were at least 65 TR6's and a similar number of TR3's/TR2's/TR3A's/TR3B's as the TRA National was held nearby the week prior and many caravanned over to the Mid Ohio Sports Car track for the Sat. show.

There was so much more too! This writer had difficulty calling the event over and was seen pushing Triumphs bound back to Britain into the "articulated lorrie"... the spinning TR5 was not the only British casualty of the weekend. One chap was unable to get his TR6 to fire after the feature, some sort of ignition problem, one Spitfire had a piston disappear from his 1296 motor and a TR3 had a connecting rod ventilate the engine block. Several other folks including Dave Massey were also pushing cars back onto the trailer.

And then it was over. Driving back out to the interstate for the 750 mile drive home was sort of surreal... the sun was shining, the shadows growing longer the smell of fresh-cut lawns. Ah the joys of driving a Triumph! This event was "one for the books".

I'm glad to have been part of it. respectfully,  
 rml - Bob Lang Voice:617-253-7438 FAX: 617-258-9535

**Editor's Corner**

Well, summer has finally arrived. It is almost too hot to work on our Triumph Projects. Ryan is now a "free" man.



He has been quite busy on the 250 projects. When we "acquired" the '69 parts car 2 years ago we were pleasantly surprised to find that the last 2 digits of the serial number were "HE" - which indicates that it had "factory" high compression. (Yum) Ryan has this engine about 70% rebuilt and we should have a "smoke test" by the end of the week. He received a digital camera for one of his graduation presents and has been documenting the rebuild.

Nelson and Ryan hooked up our Mig welder last week and he has also been busy reinforcing the 250 frame. (It looks quite nice)

The weather was terrible for the first 4 hours of the Vintage races at Mid-Ohio. Our "parade lap" was not without incident. Be sure to ask Ryan about his "detention" when you see him this week at the Immke show.

I have never seen so many Triumphs in one place as we saw at the Saturday show at Mid-Ohio. Even though the weather was terrible, nice to see all of you that made it.



Here is Carl and Elaine Moore, Bob Mains and Kas Kastner with his wife.

I did not make it up for Sunday, but Ryan made the trip on Sunday, too. As you can see from the picture, the weather was much nicer on Sunday. (See Bob Main's article for additional details)

Nelson has been busy working at his painting skills. I am always amazed to see how he "dives" into these projects. (and I suppose envious of his unemployed status) He stopped by to show off his new front end and it looked great. The bumpers are off of the rear of the car and the rest will be shot this week sometime. The heat is affecting him, too. (We could sure use some of that cool weather from 2 weeks ago to "even" things out.

Nelson likes driving events (and I suppose the social "eating" events that we like, too) but he is not real big on "car shows". (He says that the older he gets, the more he acts like a hermit) I have come to understand that he does not care for "car shows" - but it is hard to explain to everyone else, especially with his "presence" on the internet these days. At Mid Ohio people would find out that we were from the Buckeye Triumph club and their first question would be "Where is Nelson?". Well folks - we will see him at TRials for sure - and I am hopeful for TRF's Summer Party.

Nelson has also been busy assembling data to cure the problems common to the TR6 clutch "issues". Look for this data in the August addition. This month we are going to all get a lesson on camber.

There was some discussion that our "first Tuesday meeting" policy was not working out for some of our club members. I know that the end of the month always sneaks up on me for the newsletter. If you have any suggestions, please let any of the officers know.

Speaking of which, it is July 1<sup>st</sup> today and we will be published by noon (as soon as I get the article from Ryan, my last contributor).

Stay cool folks; see you in the shade at the Arthritis Show!

**Bruce Miles** [bmiles@INTInfo.com](mailto:bmiles@INTInfo.com)

And now also: [Bruce.Miles@BuckeyeTriumphs.org](mailto:Bruce.Miles@BuckeyeTriumphs.org)

P.S. Don't forget to get you "official" BT email address!

Contact [Nelson@BuckeyeTriumphs.org](mailto:Nelson@BuckeyeTriumphs.org) for details.

Next Newsletter Article Deadline - July 25th, 2002

## June Meeting Minutes

Minutes of the June 4th Meeting:

Nine people attended the meeting at our house on the 4th-- where was everybody??

In June was the TRA meeting and the bag stuffing must have gone on without a "hitch" as no one called to ask for volunteers!! More about the event elsewhere in this newsletter.

The Mid-Ohio event was great, even though the weather was so cold and wet that the guys could see their breath on Saturday morning!! The afternoon cleared out and the races went better.

Don't forget Immke on the 6th of July. We will also have a drive on the 20<sup>th</sup>.

August will be a busy month with the Dayton Miami Valley event on the 3rd, a tentative business meeting/ social event at Quaker Steak and Lube on the 6<sup>th</sup> and the TRF Summer Party on the 9<sup>th</sup> through the 11<sup>th</sup> --Be there or be square!! Hope you all have your reservations!!

We still need a volunteers to plan the business/social meeting in Sept., if for no other reason than to tie up loose ends for the TRials. T-shirts are being made and coffee cups were hopefully ready for TRA for advertising. Hotels are filling up in Granville, so get your reservations now!!

See you all on the 5<sup>th</sup> and 6<sup>th</sup> at Immke!!

Respectfully submitted, Margo Washburn, Secretary

## President's Corner

July, 2002

Our June 4th Social/Business meeting was a rain-out affair, partially due to the weather. Jim and Margo were great hosts to the few diehards who gathered for the backyard affair that moved in and out of their home depending upon the liquid sunshine and the need for other liquids provided by our hosts. The social emphasis was welcomed as we agreed to speed through the business side of our get-together. Thanks Jim and Margo.

Our club was well represented at the Mid-Ohio Vintage Races on Saturday 6/15 and several cars drove the back way up to the track. Buck Henry's newly united TR6 body and frame had an engine run-in as we raced to get there. The event was a spectacular gathering of Triumphs even though Mother Nature delivered a fair share of British weather for our Little British Cars. The dampness had little affect on the enthusiastic folks there for the awesome cars and great racing. Well, maybe some affect on those who joined the crowd for the lap around the track; just ask Ryan and the local county ranger who both discussed the merits of some 'over steering' that was evident in the LBC Ryan piloted down the track and through the Esses. It was a busy day and some great action on and off the track.

Sam Halkias was in a support role for two of his long-time friends as he 'wrenched' the #83 and #72 TR6's. Both needed to be re-worked following some 'incidents' during Friday's practice. A new clutch for one and some new rear sheet metal and a fuel cell for the other was accomplished just in time for both cars to qualify well up in the grid for Sunday's race. Both cars did well in the All-Triumph race Sunday afternoon.

July events will begin with a Triumph-only Show within a Show at the Immke Classic on Saturday July 6th; please bring out the cars and plan on another fantastic day with tons of cars of every shape, size and finish. Friday night is the Cruise-in for the Muscle Cars and modified LBC's; ask Bill Blake about the size of those trophies!

Then we will gather for a Saturday driving event on July 20th where we can stretch our legs and enjoy the highway miles

from our own preferred vantage point, in the seat of our own LBC. Look for more details in the newsletter from John and Charma Huddy as they take us on a "dry run" to Longaberger . We will complete the day at Tom's ice cream bowl in Zanesville.

Please consider the rapidly approaching deadlines for cost saving registrations for the TRF Summer Party in August and the 6-Pack TRials in September.

We can still use some help in planning for our local social activities and drives, please raise your hand and take on an event that keeps us excited about our cars and our club.

Please renew you memberships by sending your check to Jim VanOrder and plan to participate in our next events. See ya real soon. Bob Mains [bob.mains@ode.state.oh.us](mailto:bob.mains@ode.state.oh.us)

## A Chronicle of Triumph: how I became addicted

*Editor's Note : Finally some words from Ryan and a few interesting pictures, too.*

What happened to June? Oh well, at least I have gotten a lot of work done in the garage. Unlike last summer, I have been working hard despite the heat. In the past four days I have assembled the majority of a fresh TR250 engine that may be installed in time to go to Roadster factory. Who knows, but I will try my best to get it going in time. I have also been welding on the frame for the other car, and am pretty close to completing it.

I guess I should mention for those that I haven't talked to, my Dad finally convinced me that there are two TR250's to be had from the parts that we have. I checked it out, and I now believe that he may be correct. One will be the autocross machine, and the other will be pieced together from parts we already have with a low budget. I am working pretty much all day, and have been getting a lot accomplished, but it remains to be seen how it will all turn out. I hope to see everyone at Immke, and TRF. Stay cool, and happy motoring.

Member Rod Yost thought this looked funny:



Work well under way on the HE rebuild:



Ryan [rjhmile@yahoo.com](mailto:rjhmile@yahoo.com)

### Officers and the Fine Print

The Buckeye Triumphs Newsletter is a publication of Buckeye Triumphs, and the content herein is not officially endorsed by the staff or members of Buckeye Triumphs, their families, or lawyers. If you decide to follow the advice of anything inside this newsletter, you do at your own risk. We are all adults here, so if you do something stupid, own up to it and don't sue the club. Heck, we don't have any money anyway...  
Club address: Buckeye Triumphs, P.O. Box 584, Lithopolis, OH 43136-0584

**Annual Dues: \$20.00** General email: [buckeyetriumphs@ameritech.net](mailto:buckeyetriumphs@ameritech.net)  
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Our current crop of Buckeye Triumphs Officers include:

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 Affiliations: 6-Pack Chapter -- Center of Triumph Register of America -- VTR Zone Member

**Buckeye Triumph Upcoming Events**

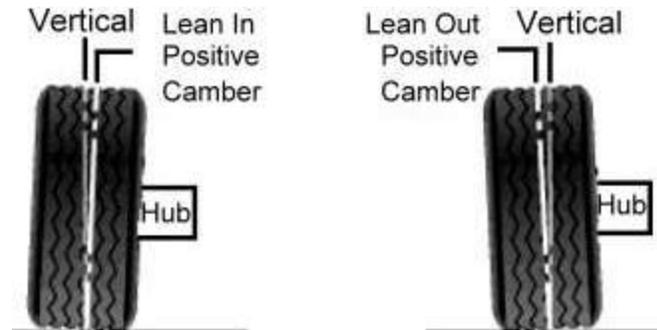
Date	Event/Location	Host
July 5-6	Len Immke Auto Show – Dublin Metro Center – Dublin Ohio	<a href="http://www.arthritisautoshow.com">www.arthritisautoshow.com</a>
July 20 <sup>th</sup>	TRials Dry Run to Longaberger	John Huddy (Details on Page 1)
Aug 3	British Car Day 2002 Eastwood MetroPark Harshman Rd., Dayton, Oh.	Miami Valley Triumphs & MG Car Club, SW Ohio Centre  Phil Daye, chairman, 513-423-8175
Aug 9- 11 <sup>th</sup>	The Roadster Factory Summer Party 328 Killen Road, Armagh, Pennsylvania, USA	The Roadster Factory (800) 234-1104 <a href="http://www.the-roadster-factory.com">www.the-roadster-factory.com</a>
Sep 15	11th Annual North Coast Triumph Association Fall British Car Show - National Packard Museum in Warren, Ohio (formerly at Alpine Valley)	Cindy Palmer <a href="mailto:CPalmer799@aol.com">CPalmer799@aol.com</a>  330-274-0017
Sep 26 - 29	6 Pack TRials 2002 Granville, OH	Murry Mercier <a href="mailto:TRSixer@Yahoo.com">TRSixer@Yahoo.com</a> Home: 614-888-0838 Work: 614-424-7291

**Notes from Nelson:**

**TR Website:** Blake Discher up in Detroit has a neat website at <http://www.fireflystudios.com/triumph/> with photos of his Stag and TR6. He also has a cute game called **DON'T CRASH THE TRIUMPH**. The site has a very interesting hit counter near the bottom --- apparently manufactured by Lucas:



**Rear Wheel Camber Adjustment:** The Independent Rear Suspension (IRS) on the TR4A, TR5/250 and TR6 is prone to camber misalignment. The design incorporated a toe-in alignment (wheels point in or out) adjustment capability through the use of shims between the trailing arm brackets and the frame. There was no arrangement for camber alignment. The next sketch illustrates the concept of camber.



The most common camber misalignment is excess negative camber, where the top of the wheel leans in toward the car. I can think of five possible causes of this:

- Severely sagging or broken frame.
- Worn out trailing arm bushes.
- Broken trailing arm mounting brackets.
- Weak or too short replacement springs.
- Misalignment of the trailing arm mounting brackets or frame cross member to which they attach.

Frame problems are common for these vehicles, especially those that have been driven in the presence of road salt. Much of the frame is covered with oil from the always-present leaks and not prone to rust in these areas. However, the oil usually doesn't coat the frame cross members to which the trailing arms mount. If the frame is not solid, it must of course be repaired.

The factory apparently realized there was a camber problem as early as '69-'70 because they made available a spacer to put between the top of the springs and the frame suspension cross member and redesigned the brackets.

Fortunately, the camber can be adjusted by manipulating the configuration of the mounting brackets and through the use of spacers on the springs.

The first thing I do is determine if the camber is misaligned and if so, how much and in what directions. (Remember, if it ain't broke, don't fix it --- or, don't treat a well patient cause you might make him sick.)

**Measurement:** All that is needed to get a rough measure of the camber is a flat surface such as a garage floor, a large square and a ruler, preferably calibrated in tenths. The next photo shows these tools in action. (Notice the clean hands, almost like a surgeon.)



First and most important, all tires must be inflated to equal pressure and the car pushed unoccupied to the place of measurement. If the car had been turned or worse, the back end jacked up and then put back down, the suspension will not be at equilibrium because the bottom of the tires are restrained from moving in or out by the floor.

Next, the square is set on the floor and positioned near the tire with the vertical side of the square aligned with the center of the hub and as nearly vertical as possible. Oh, forgot to mention to remove those wheel trim rings. Next, measure and record the distance between the square and lip at the top of the wheel. Then, without moving the square, measure and record the distance between the square and lip at the bottom of the wheel. Next, subtract the measurement at the top from the measurement at the bottom. If the two measurements are equal, then the camber is zero, great! If the result is negative (top measurement larger than the bottom measurement) the camber is negative; the top of the wheel is leaning in. A positive difference indicates a positive camber; the wheel is leaning out. I take three sets of measurements for each side. If the computed difference varies more than ten percent on one side I keep taking the measurements until I get consistency. One more measurement that is needed is the diameter of the wheel between the points where the other two measurements were taken. My wheels measured 16 1/8 inches. The subsequent calculations work only if the diameter and the other measurements are in the same units (inches, feet, millimeters, furlongs, etc).

I also measure the height of the lip of each fender (both front and back) directly over each wheel at the same time I take these measurements.

**Computing:** All that is needed now is a little trigonometry to convert the measurements to the camber angle. For those of you that remember more about the young women in your trig class than small angle approximations or worse yet, took a woman's studies class rather than trig, I'll help you out:

The tangent of an angle in a right triangle is the ratio of the opposite side to the adjacent side.

The tangent of a small angle (5 degrees or less) can be approximated by the radian measure of the angle.

The radian measure of an angle can be converted to degrees by multiplying by 57.3.

It follows then that the camber angle is:

$\text{Camber} = 57.3^\circ (\text{difference between top \& bottom}) / \text{diameter}$

Example, if I measure 2.3 inches at top and 1.8 inches at the bottom, then the difference is:

$1.8" - 2.3" = -.5"$ , and the camber angle is:

$57.3^\circ \times (-.5") / 16.125" = -1.8^\circ$

This wheel should have a noticeable lean in. If I do the measurements and computations and the results don't match what I observe (such as wheel leans in and I compute a positive camber or the wheel that leans in the most seems to have a smaller computed negative camber, etc) I consider that:

- I made an error on slide rule or calculator.
- The floor isn't very flat.
- The square isn't square.
- If none of the above, I might consider having someone drive me to an optometrist or psychiatrist

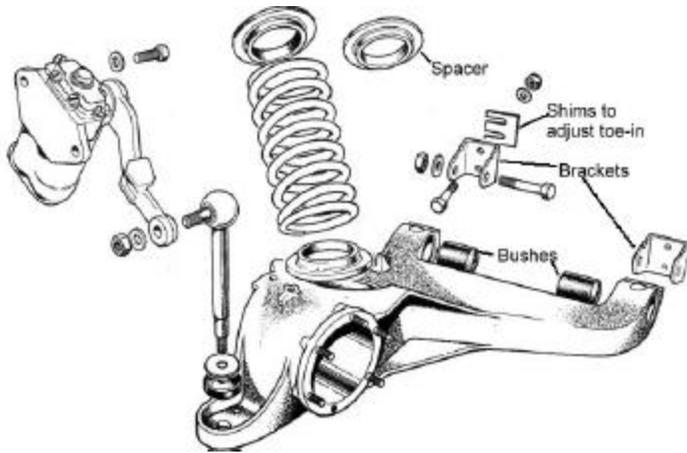
The correct rear wheel camber is from  $+1^\circ$  to  $-1/4^\circ$ . If my camber is in this range, I go worry about something else. If it's 1/2 degree outside of this range, I won't worry about it or would have it measured by an alignment shop; the measurement technique used here isn't that precise.

Once I decide to do something about the camber, I use the following sequence:

- Renew the rear suspension bushes.
- Deal with any spring issue.
- Alter the bracket configuration.

The following sketch from TRF catalog shows the rear suspension components.

If you look closely at the sketch you'll see that the axis of the bushes is not parallel to the axis of the hub that fits in the round cylinder with the studs protruding. Because of this, the camber changes as the trailing arm moves up and down. For example, when load is added such as people getting in, the back of the car goes down and the camber changes in a negation direction. A slight positive camber with no load will give a nearly vertical wheel under moderate load.



**Bushes:** The standard bushes are made of rubber with metal sleeves in the middle. After years of use, the sleeves tend to migrate to one side of the bush. Since the forces on the inside and on the outside bushes are different, the amount of sleeve movement can be different enough to cause several degrees of negative camber. The next photo shows a pair of bushes removed from the trailing arm on my '70TR6. Notice that the sleeve on the left has migrated to the top more than the one on the right.



If the bushes are more than ten years old I'd suggested replacement before doing anything to adjust the camber. The standard bushing as well as up rated rubber and poly bushes are available.

**Springs:** the next thing to look at is the springs. Recall that I mentioned measuring the height of all four fenders at the same time the camber was measured. There are two things to consider:

- Is the back too high or too low?
- Is one side too high or too low?

Jay Welch in his TR6 Shop Reference Data (on the BT Website in the technical area) lists the fitted length of the standard spring as 8.61". I measured the fitted length of the springs on my '76 as follows:

1. Measured fender height.
2. Put floor jack under trailing arm in area of rear axel.
3. Jacked up trailing arm and removed wheel.
4. Lowered jack so that height was same as in step 1.
5. Used steel rule to measure from bottom of spring to near mid point and made mark on spring.
6. Measured from top of spring to mark in 5.

7. Added measurements from 5 & 6 to get fitted length.

I was careful to get the end of the ruler inside the lip on the rubber packing pieces when taking measurements in steps 5 & 6. This measurement is probably subject to an error of 0.1" or so. I measured about 8.6" so it appears that my springs have collapsed little as any.

Later when I removed the springs I measured the free length of both to be 11.5".

**Data for my '76 (starting point):**

	Left	Right
Front Fender Height	28.0"	28.2"
Rear Fender Height	28.1"	28.2"
Rear Spring Fitted Length	~8.8"	~8.8"
Rear Wheel Camber	-2.3°	-1.6°

The height is good and the right side is very slightly higher --- not enough to consider trying to fix --- I wouldn't worry about any difference less than 1/8" inch. The only problem seems to be the camber.

**New Packing:** When measuring the fitted spring length I noticed the rubber packing pieces at each end of the springs were in bad shape so I decided to replace them first. I purchased the up rated poly packing pieces from TRF. The rubber packing pieces are about ~0.25" thick and the new poly packing pieces are ~ 0.29" thick (see photo). I decided to install the new packing pieces and measure everything again.



**Data for my '76 (with new packing pieces):**

	Left	Right
Front Fender Height	28.0"	28.2"
Rear Fender Height	28.4"	28.4"
Rear Wheel Camber	-1.6°	1.3°

The rear height increased and the camber improved because of the ticker packing. The rear height on the two sides became equal. I noticed that part of one of the old packing on the left side was not under the spring, which explains how the height changed more on the left side.

**Try Spacers:** As mentioned earlier, the factory made available spacers to put under the springs to fix the negative camber problem. I decided to try a set of spacers next. The

spacers (next photo) raise the springs 0.44" and are placed between the spring and the lower packing piece.



**Data for my '76 (with 0.44" spacers):**

	Left	Right
Front Fender Height	28.0"	28.2"
Rear Fender Height	29.2"	29.2"
Rear Wheel Camber	-0.4°	-0.2°

The 0.44" spacer raised the height 0.8" and increased the camber (in a positive direction) by a little over one degree. The wheels look pretty good with this setup but I think the height is too high. I also expect the new poly packing to compress slightly making the camber more negative. I decided to remove the packing to lower the height and work on the brackets instead.

**The Brackets:** Triumph made three different brackets for the trailing arm as shown in the next photo. The number of notches in the top edges identifies the brackets and is marked on each bracket in the photo. Up to CC61570 a 1-notch bracket was used on the inside and a 2-notch bracket on the outside. Beginning with CC61571 a 3-notch bracket was used on the inside and a 1-notch bracket on the outside.



Brian Lanoway of Winnipeg, Canada ([brian\\_lanoway@standardaero.ca](mailto:brian_lanoway@standardaero.ca)) struggled with and successfully solved this problem. He sent a note to the Triumph list in August 1998. Part of that note is reproduced below with Brian's permission.

*It's now taken me 2 years, but I finally think that I've got the camber on both my rear wheels right and I thought the list*

*might benefit from some of the 'science' I've applied to the task. There's been some traffic on the list last spring about this subject, but I haven't seen a comprehensive approach to this yet. I hope this helps.*

*First some background. Last year, I installed new trailing arm up-rated rubber bushings, springs and rubber spring packings, only to find that the rear camber was still excessive - with the driver's side sagging more than the other. This spring, I mixed and matched the trailing arm brackets - using the same mirror-image combination on both sides - the net result being the proper camber on the passenger side with some sag still remaining on the driver's side. Finally, I removed the brackets on the driver's side alone to get that right. I now have both sides at the proper camber angle - primarily through using various trailing arm bracket combinations.*

*Since there are 36 possible trailing arm bracket combinations with the one notch, two notch and three notch brackets - either in the 'up' or 'down' positions, I measured the bracket and trailing arm geometry, applied some trigonometry, and then created a table to determine the range of camber adjustment possible using the 36 combinations.*

I've had several discussions with Brian and as a result revised his original table to account for several additional variables. (That exercise is documented on the website under the Rear Suspension Geometry topic.) The resulting table is shown below. The camber angle and ride heights are relative between bracket configurations. Also note that the negative camber angle DECREASES as you go down the table. By the way, 3U means positioning the bracket with the three notches up, etc.

Relative Camber Angle and Ride Height for Various Trailing Arm Bracket Configurations		
Bracket Configuration Outer-Inner	Total Camber Angle (Degrees)	Ride Height (Inches)
3D-3U	-4.5	0.0
2U-3U	-4.0	-0.1
1D-3U	-3.4	-0.1
3D-2D	-3.3	0.1
1U-3U	-2.8	-0.2
2U-2D	-2.7	0.0
2D-3U	-2.3	-0.3
1D-2D	-2.1	-0.1
3D-1U	-2.1	0.1
3U-3U	-1.7	-0.3
1U-2D	-1.6	-0.1
2U-1U	-1.5	0.1
2D-2D	-1.0	-0.2
1D-1U	-0.9	0.0
3D-1D	-0.8	0.2

Relative Camber Angle and Ride Height for Various Trailing Arm Bracket Configurations		
Bracket Configuration Outer-Inner	Total Camber Angle (Degrees)	Ride Height (Inches)
3U-2D	-0.4	-0.3
1U-1U	-0.3	-0.1
2U-1D	-0.2	0.1
2D-1U	0.2	-0.1
1D-1D	0.3	0.1
3D-2U	0.4	0.3
3U-1U	0.8	-0.2
1U-1D	0.9	0.0
2U-2U	1.0	0.2
2D-1D	1.5	-0.1
1D-2U	1.6	0.1
3D-3D	1.7	0.3
3U-1D	2.1	-0.1
1U-2U	2.1	0.1
2U-3D	2.3	0.3
2D-2U	2.7	0.0
1D-3D	2.8	0.2
3U-2U	3.3	-0.1
1U-3D	3.4	0.1
2D-3D	4.0	0.1
3U-3D	4.5	0.0

With the spacers removed, I was at:

**Data for my '76 (with new packing pieces):**

	Left	Right
Front Fender Height	28.0"	28.2"
Rear Fender Height	28.4"	28.4"
Rear Wheel Camber	-1.6 <sup>o</sup>	-1.3 <sup>o</sup>

Brian suggested that it's best to change only one bracket per trailing arm at a time, which makes sense. I started with the standard later 1U outer 3U inner configuration. The inner bracket bolt was installed with the head toward the inside and I didn't know if I could get the inside bracket off easily so I decided to try to correct the problem by changing only the outside bracket. (The configuration shown in the manuals has the bolt head toward the inside. In the future I'm going to assemble them with the inner bolt head to the outside and the outer bolt head to the inside to facilitate changing the bracket configuration.)

The 1U-3U configuration has a relative camber of -2.8 degrees. Moving down the table then next entry with the 3U inner bracket is the 2D-3U configuration that has -2.3 degrees relative camber. That is an increase of 0.5 degrees-- not enough. I needed between 1.3 and 1.6 degrees to get to zero camber (the spacer had been

removed). The next entry down with the 3U inner bracket is the 3U-3U configuration that has -1.7 degrees relative camber. This is an increase of 1.1 degree. I would have liked a little more increase, but the 3U-3U configuration is the combination with the greatest positive camber with the 3U inner bracket. So I tried that. The results were:

**Data for my '76 (with new packing pieces & 3U-3U Bracket configuration)**

	Left	Right
Front Fender Height	28.0"	28.2"
Rear Fender Height	28.5"	28.5"
Rear Wheel Camber	-0.4 <sup>o</sup>	0.0 <sup>o</sup>

This was a slightly greater camber increase than expected and very close to the +1 degrees to -1/4 degrees specification. The road height increased slightly rather than decreasing as predicted from the data in the table. The ride height increase is due to a small second order effect explained in the Geometry note on the website. These results are barely acceptable. I'd be much happier with the left at about + 0.6 degree and right at +0.3 degree since the left side load is nearly always more than the right side load. I decided to run it for a few weeks and then measure it again.

Nelson Riedel -- [nelson@buckeyetriumphs.org](mailto:nelson@buckeyetriumphs.org)

**Late TR Guy**



July 2002: By Bruce Clough ([clough@erinet.com](mailto:clough@erinet.com))

**The Gauntlet's Been Thrown!**

From the June 2002 Buckeye Triumphs Newsletter - The Editor's Note waving the red flag in front of the bull just to see if he'd bite:

*"..nothing from Bruce C. this month. Bruce – be sure to ask Ryan about his term paper on the history of the TR automobile – and ask about the affect that the "Wedge" had on the company."*

In a way he's right. Yes, Bruce – pick yourself off the floor. I agree. The Wedge ended up being the final nail in a coffin

that the British Sports Car industry had been building for itself for a long time. Lack of recapitalization, lethargy and inefficiency brought on by socialized industry, labor-management relations that make GM and the UAW look like newlyweds, and no shared vision to where they wanted to go built the coffin. The Wedge was just one of the final nails. And it's a shame, to quote the Klingon commander when a war between the Klingon Empire and the Federation was banned by an advanced alien race: "*it would have been glorious...*".

The early wedges were miserable. Underpowered (but they did get decent gas mileage), unreliable, and shoddily built, they still sold due to the uniqueness of their design, even though they were coupes! By the time BL figured it out (convertible with Rover V8) BL had split up and the strong Pound drove the cost of a TR8 pretty much past a Corvette! But just think of the "could have beens":

- BL decides to gamble that the US Congress would not pass a bill banning convertibles and designs it as a convertible from the start?
- BL spends a bit more development dollars on building the 16V Dolomite Sprint engine to meet EPA regulations rather than going with the 8 valve version.
- BL starts offering the 3.5 litre V8 from the start. (If you've never driven a TR8, I'd suggest it – it's fun!)
- BL invests in build quality right from the start.

Yes, the strong Pound might still have spelled doom for the British Sports Car industry, and the labor issues were institutional, but we'd have more convertible wedges running around! But in defense of the wedges still out there:

- A stock TR7 handles better than any other stock TR, period. I know, I've had them all! The TR7 is the little biplane while the earlier TRs are more like medium bombers. The TR7 is nimble, something that I'd never say about earlier TRs. Sure, it can't out-power them (although as long as you keep the rpms up you can give it a go), but on a road like US 250 from Huttonsville, WV to Churchville, VA I'd take it hands-down from any other TR! (that is an extremely fun road- trust me)
- The TR7 is safer. Let's face it, it was built with crash test guidelines in effect – designed for 5 MPH crashes with increased side protection (crumple zones, collapsible column, etc.) from a decent uni-body design. Our daughter rides with us in the TRs. Let's see, put her in the TR4, or do I get a TR that can take a side hit and fit a modern child's car seat? As a dad, not much of a choice. (Although I need to eat a bit of crow here – she wanted to ride to and around TRA '02 in the TR4, not the TR7, so I spent a day fitting a modern car seat to the TR4 including installation of a fitting for the seat's rear strap.)
- The TR7's seats don't kill your body. I can't ride in a TR3 anymore for more than a hour before my back starts hurting. The TR4 is a bit better, almost three

hours. I can sit in the TR7 all day long. The seats are comfortable.

- The TR7 doesn't beat you with wind (yes, convertible, by definition the coupe doesn't have this problem). When I was younger, my claim to fame was I could drive a TR3 all day long with the top down. Sure, it beat you up with the wind, but I was young and stupid. The TR4 isn't a whole lot better, along with the TR6 (at least with the high-back buckets on the 6 the hair had a little chance). The TR7 is pleasant – you can actually hear the radio without turning the volume up all the way.
- Styling is still fresh. The wedge design wears well, predating other wedge designs (Nissan Pulsar, et al) by years. It still looks "modern".

So Bruce, that's about it. The bungled execution of the TR7 by BL certainly hastened it's fall and has provided a few chuckles along the way (I nominated the 1975 TR7 as the worst car of the century a few years back in "Click and Clack's" Worst Cars Of The Century competition. Sadly, it was beaten out by Vega's and Renault Dauphine's. I guess they have a point, as miserable as the early 7's were, they pale in comparison to the Renault!). However, BL would have folded under the weight of it's own pondering ineptness anyway, so does it matter much?

All I know is that when I drive the wedges around now folks point to the car and ask me if it's a Ferrari. I need a pony for the hood badge....

Next month I'll put in here a product review. I was going to do it this month, but the pictures were late, files were on the wrong computer, dog ate the paper, yadda, yadda, yadda...

## This Month's Wedge Tech Tip

More stuff off the wedge email list. You can always tell when I have a busy month – I suck information that I find for the column. This month's been a bit busier than the rest, and it shows no signs of stopping. This month the topic is one of my favorites, alternator conversions.

Dan wrote:

*I remember that there is a GM alternator that fits our TR8's but don't remember what the part number is or what the cost should be? Can any one recommend an alternator for me?*

*I need one pronto before next weekend's British Car Days. Thanks for any help you can provide. Dan*

To which Don replied:

*If you find a source for this (that has more than one, or has components), please let me know. My TR8's alternator is acting a bit strange. Twice now, the ammeter will peg to indicate very high charge after driving for several miles. I pull off the road, turn off the engine, restart and go. Then it's OK. I wonder if there are components available so that my own unit can be rebuilt. The problem is likely the voltage regulator, I would guess.*

Then Bill Sweeting chimed in:

*There was an overcharging problem caused by the battery sense wire poor connection. This is located in the passenger footwell under the dash. In the 1980s early road tests of a TR8 the vehicle being tested was over charging and boiling out the battery. They took it back to the dealer but they couldn't find the problem so advised them to run with the headlights on!*

*Hahahhaaha. What a comment to have show up in a road test article. The culprit, we know now, was the alternator gets its battery sense voltage level from a wire that has a connection under the passenger side dash. A poor or erratic connection causes the alternator to think the battery has low voltage and turns on the alternator full. Don't know if this is the same problem as you are experiencing but may help to know there was this other similar problem. Some have taken the voltage sense wire and moved it to the starter ( I think).*

*I would have to research past TR8CCA newsletters to read more about solutions people have used. I looked in the TR8CCA Newsletter Index and Issues 27-17 (Issue # 27 Pg 17), 48-16, 49-12, 1-13, 2-35, 7-29 all have something to say about Battery Over charging and Issues 49-12 and 53-14 are listed for Battery Sense Wire info.*

*I converted my TR8 Coupe to a Delco Alternator and that info with pictures is in issue #62 Page 7 here's a partial capture from That article: Replacement for 25ACR Alternator (80 Carb'd car with A/C) I found my Alternator!!!! A DL7127MDP (plug at the 3PM Position-looking at front of alternator) It was \$33.95 and a \$15.00 core charge 63 Amp (25ACR is 65 Amp) I went to Pepboys and Advance Auto and looked up a 78 Buick LeSabre with 5.7 liter V8 and both stores didn't show a double pulley model only the single pulley model. So it's not as easy to find it as one might think. (Dave H., I don't know where you got the 10SI, 12SI or 15SI designations? In US looks like it is 7127) Then went to AutoZone and they had lots of the 7127 double pulley alternators.*

*Looked up the 78 Buick on their computer and it didn't show whether it was a single or double pulley model so we went and looked on the shelf and they must have had 5 or 6 of the double pulley ones with connector plug in different positions.*

*The above conversion isn't a one for one replacement. It takes some modifications. I think Ted S. still sells a Delco Replacement Alternator with brackets and plugs included!!!*

That's all for this month. See you at the TRF Summer Party!



**Classifieds:**

These classifieds are free to BTC members, given, of course, that they relate to Triumphs, and are for private (not business) use. No, you cannot sell that old couch here! We'll run classified ads for two months, beyond that you'll have to ask for an extension.

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