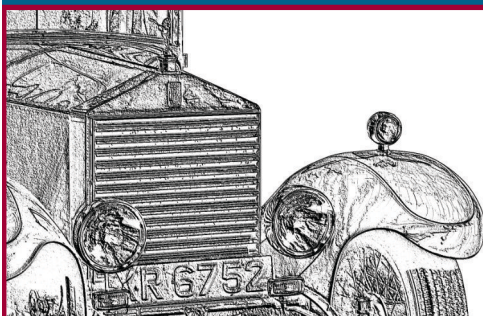




# The Goshawk Society

## *Flier*



Issue #19-2

December 2019

## A Family Car for the Generations

*Story by Bill Rogers (written ca. 2000) ~ Illustrations by John Rogers*



*Simon Curzon presents the Trophy for Best Formal Pre-War car at the Troy meet to John and Dana Rogers, father Bill Rogers, and daughter Rebecca Rogers. (Photo: Gates)*

Ah, the joys of our family pet, the old “pre war” Rolls-Royce! She is an elegant and sturdy 1936 Park Ward limousine on a model 25/30 chassis. The 25/30 designation refers to a horsepower rating under the British RAC system of 29.9. Though very large, both in height and length, by late twentieth century standards, this model was known as one of the “smaller” Rolls-Royces in the 1930s. It had just evolved from the 20/25 hp model that had appealed to customers because it was more efficient, maneuverable, and economical to operate than the grand Phantom I or Phantom II that had preceded it, or the Phantom III which was its contemporary. At the time of its manufacture, Rolls-Royce in Crewe, England, supplied chassis to any one of six or eight “coachbuilders”. Park Ward was one of the most popular using elegant and well balanced lines with a somewhat conservative body style.

This particular chassis carried the serial number designation of GXN – 19. It has a straight six cylinder engine, Lucas electrics including separate circuit breakers for every major electrical system and rebuildable fuses, 12 volt battery, self-lubricating system for the chassis, built-in jacks, thermostatically controlled radiator louvers, servo-assisted brakes, dual electric fuel pumps, gated springs, P80 headlamps, central fog lamp, and dual Lucas trumpet horns. In short, it was strong, smooth, quiet and reliable – and still is!



*Bill Rogers and John Rogers with GXN-19 (Photo: Rogers)*

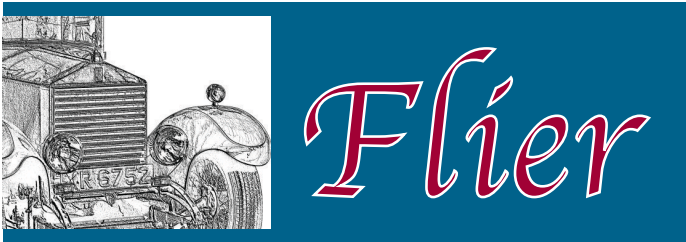
The Park Ward coachwork that was fitted to GXM – 19 was a 7-passenger limousine with a dividing window between the front and rear compartment. The rear seats, including two “jump” seats that fold down, were upholstered in English wool cloth, while the front seats were covered in pleated black English hides. The rear accommodations were enhanced by a magazine shelf, cut glass lamps, cigar lighter, quick-release window shades, sheepskin carpet, and personal telephone to the driver’s compartment. What class! All the coachwork was built from aluminum over oak frames, with steel fender liners to prevent stones from nicking the softer aluminum. The front doors were hinged to open from the front for easier access, the rear doors opening from the rear. An integrated fold

*Continued on page 4*

# The Goshawk Society of the Rolls-Royce Owners' Club

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The Goshawk Society *Flier* is the official publication of the Goshawk Society, an affiliate of the Rolls-Royce Owners Club, Inc. (RROC). The RROC is dedicated to the maintenance and preservation of Rolls-Royce and Bentley automobiles and its 9,000 members who own or admire the marques. Member submissions are welcomed.



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## Chairman's Message

Greetings,

I hope each of you enjoyed the fall weather and took the opportunity to drive your PMC. As winter settles in most of us will be putting up our cars for the winter in a nice and dry garage. Don't forget to keep a maintainer on the battery during the winter so when the Spring arrives, and you are ready to drive, she will fire up on the first try.

Speaking of seasons, I hope you are planning to participate in Post Annual Meet Tour Mary White is organizing. The information is available on the RROC Website and I encourage you to sign up for the tour. It would be great to have a long line of pre-war PMCs driving along the country roads. We are in the process of planning other tours, perhaps in conjunction with other Societies so that we can enjoy our cars even more.

I encourage all of our members to send in pictures of their cars along with a story of who you acquired the car or your favorite trip in the car. For those of you whose car has been "in the family" so to speak, I would especially encourage you to send in a short story of how the car came into the family and where it has been during the time with the family. I know there are several cars who have been in the family for over 30 years – so we would love to hear from you and see pictures of your car and your family.

For those of you wondering about Ernestine, she is still in the shop receiving some body care.

I wish each of you a Happy Thanksgiving and a very Merry Christmas. See you in 2020 in Gettysburg.

Cheers! Keep Motoring On!  
Al Briseno II



*Ernestine's Front Fenders receive some attention in preparation for next year's events!*

## CALENDAR OF EVENTS

### 2020 RROC NATIONAL MEET IN GETTYSBURG, PA

#### Tuesday, June 23

Pre-war Beginners Driving School. It will be designed for spouses, family members and those who are interested in acquiring a pre war RR/B. The morning class will be a practical tutorial based on the Rolls Royce's original owners manuals. Those students who have access to a pre-war car and are already able to drive stick-shift cars will get a driving lesson with one of our coaches in the afternoon.

#### Wednesday, June 24

9-11:00 AM

Goshawk Tech session by Tim Jayne

11-12:00 PM

Goshawk Society Business Meeting

12 -1:30 PM

Goshawk Society lunch \$25 per person

Courtyard by Marriott - courtyard & garden

Join enthusiasts of the small horse power Rolls-Royce cars (20hp, 20/25, 25/30, and Wraiths) for a casual lunch in the private courtyard at the Marriott. An hour long driving tour of the battlefields will follow.

#### Thursday, June 25

Bill Casey is leading a pre-1940 Vintage Drive to Catocin that will include lunch.

#### Friday, June 26

12:30-3:30PM

The PA College of Technology students will have a hands-on demonstration of Restoration Skills. They've been working on the RR Foundation's 20/25.

#### Saturday, June 27

Show Day

## ARE YOU A MEMBER?

This is the last complimentary issue of the Goshawk Flier for all RROC members who are owners of a small horsepower Rolls-Royces. Subsequent issues will only go out to members of the Goshawk Society. If you are not a current member, now is the time to join (or rejoin) to continue on the mailing list. The annual dues were decreased to \$5 this year, there is no excuse. John Rogers is writing a series of tech articles on his restoration of GXM – 19 and Pierce Reid will have Part 2 of his tech article as well. More owners are sharing their small hp car's story. Don't be left out! Join when you renew your annual RROC membership or by contacting: RROC Headquarters at: [RROC.org](http://RROC.org) or 1-800-TRY RROC



*Bill and Bev Rogers with their 3 children John, Nancy and Sue with GXM-19 in London 1966 (Photo: Rogers)*

down rear luggage rack was incorporated to accommodate touring trunks – a feature which we later put to good use. There were three separate and well stocked tool storage areas, a front fender mounted spare tire (tyre) and a fold-out windshield (windscreen).

This “proper motor car” was first registered in April, 1936, and given the license number DLD584. In Great Britain, this number typically remains with the car, along with a registration log, no matter who the owner. The number plates still remain, but unfortunately the registration log had to be surrendered when applying for title and license in the USA.

Sir Frederick H. Hamilton was the first owner, and the car was apparently used for his private service in London. Sometime after the Second World War, the car was sold to a livery company situated on Pall Mall in London (according to the log). After over a decade of use in formal and ceremonial occasions including funerals and weddings, GXM – 19 was offered for sale. It was purchased by a man in Banstead, Surrey, England who had a hobby of purchasing Rolls-Royces to modestly restore and put up for resale.

Here is where the Rogers family comes into the picture. In 1962, I had accepted a teaching and counseling position at Earlham College in Richmond, IN. Among other academic features, Earlham had an excellent international studies program. And in the 1965-66 academic year, Bev and I agreed to take responsibility for the spring semester study program in London. We made all the arrangements for living quarters (digs), classroom space, faculty,

and educational tours, and for the most part thoroughly enjoyed being with the twenty-four students in our group. I also taught a course in Psychology and Religion, with special emphasis on Humanistic Psychology and Psychoanalysis – using some of the facilities of the Tavistock Clinic and Institute of Human Relations in London.

Our family leased an attractive town house at 43 Flask Walk in Hampstead, London NW3. John (8) and Sue (5) were enrolled in the “third form” and the “first form” respectively of the local Hampstead School, while Nancy (3) was at home. All of us had a thoroughly stimulating and enjoyable time exploring London, riding the “tube”, visiting parks like Hampstead Heath, going to historical museums and art galleries, and working on our English accents (Nancy was the best). But at the end of the Spring semester, we planned to travel – first around England, and then over to the continent.

Hence we needed a car that would hold all family, and also a large German tent, sleeping bags, clothes, folding table and chairs, stroller and other miscellaneous gear – a big order! At first I thought we should get a “practical van” – most likely a used VW microbus. But at heart I was much more intrigued by the possibility of what I called an “interesting” car. I hoped for something with unusual character, interesting history, great design, prospects of increasing in value, uniqueness, reliability, economical operation, and still very affordable, since our budget at the time was very crimped. Great Britain had no auto superstores or big used car lots, so I checked out every little corner garage I could find that had a few cars for sale. That was fun, and yielded a few “interesting” prospects: an open Alvis, a MG Magnette, a Lagonda, and one or two Rolls-Royces. Curious about the possibility of a Rolls-Royce or Bentley (which I regarded then and now as the finest marque in the world), I ventured down to visit all the major dealers in London. There I found a number of very elegant examples – but virtually all of them far beyond our means, even among those previously owned.

Then I began to look for private advertisements. But the London Times and other major papers had nothing like the classified ads I was used to in the New York Times and elsewhere. Instead I discovered a number of journals and magazines that did have interesting ads. The best of these was Motorsports, a fortnightly (published every two weeks). I telephoned about several possibilities listed there, but found most either already sold, too far to go see, in too poor condition, or still too expensive. Not easily discouraged, however, I resolved to buy a copy of the magazine the very Thursday night it came out next time, and begin calling right away. That I did, and one of the cars I called about was a Phantom III limousine in Banstead (south of London) which sounded good. This too was already sold, but the man who owned it had made arrangements with a salesman friend to buy DLD584 from someone up in York, knowing it needed a little work, but hoping to refurbish it after delivery and then resell it. A week or so later, he called back and told me the car had arrived, and although he had not done anything yet, he was willing to have me come look at it. I did. We loved it. It was only 275 Pounds Sterling (about \$750)!! And we bought it! (Our second choice would have been a 1937 Freestone and Webb razor-edge Bentley 3.5 sedan with green leather that we had seen at Margolis Motors in the wonderful

## A Family Car for the Generations (continued)

“mews” near Queensgate for 700 Pounds – now I wish we could have purchased both.) Clearly the Park Ward limousine had about twice the room, was classic and handsome, and had the additional advantage of a divider window between the back and the front, which we rightly judged would make travel somewhat quieter.

After purchasing the Rolls-Royce, we took it to our home on Flask Walk, had the vehicle inspection performed at Hampstead police station, and got it properly licensed in my name – with the DLD584 tag in place still. We also got it insured for a very reasonable cost, and purchased British AA service membership which included road service towing, and even shipment “home” to England if we should experience a “breakdown” on the continent of Europe. This service, remarkably, cost less than \$10.00! And it included a key that would fit little call boxes located about every mile along all major highways in case we needed help. Our membership number was 31FE2/001/263. This service also entitled us to the yellow and chrome badge that still is attached to the front badge bar on the car.

The car needed some repairs, and for that we discovered the marvelous services of Adams and Oliver, Ramsey Road, Warboys, Huntingdon – Cambs- PE17 2RP. Their “spares depot” was in Great Gidding, Huntingdon – Cambs, and what an interesting place that was. It included a “breakdown yard” where there were a number of old Rolls-Royces being systematically dismantled for their parts, and a number being rebuilt. This location is in the middle of England, north of London, and we had to leave the car there to have some of the work done - opening the frozen rear luggage rack, repairing a window winding mechanism, servicing the engine, and install a new muffler and tail pipe - a five foot affair that was guaranteed for 20 years. Adams and Oliver has proven to be a great parts source even after returning to the States.

Once on the winding country roads and byways of England, it was a delight to drive the Rolls-Royce. Sitting behind the big steering wheel, mastering the spark advance and adjustable shocks, looking out over that long, long hood (bonnet), seeing the big chrome Lucas P80 headlamps and the elegant “Flying Lady” mascot on the radiator, gliding smoothly on the big 19” wheels, and hearing the quiet purr of the engine – it was a visceral pleasure!

We loved the small engineering touches too. The built-in jacks on all the wheels, the thumb adjustment on the radiator belt, the adjustable grease nut on the water pump, the spare coil that could easily be plugged in (or unplugged to provide an almost undetectable theft deterrent), the spare starting crank in case the battery died, the flip-out turn signals, the rear window shade controlled from the driver’s seat, the wheel knock-off spanner for the locking hub nuts, and then all the tools nearly tucked away in three different custom tool storage areas.

When the end of the academic semester arrived in June, we loaded all of the camping gear in the back of the Rolls, piled the kids in on top of neatly spread out sleeping bags, and set off for an experimental junket up to the north of England, home of the Romantic Poets. The car ran wonderfully, and we found a great camp site right next to Hadrians Wall (from Roman times) and near the lakes that Keats, Shelly and Coleridge had written about so beautifully. The fact that Bev and I had both been literature majors in college and had both particularly enjoyed the Romantic period



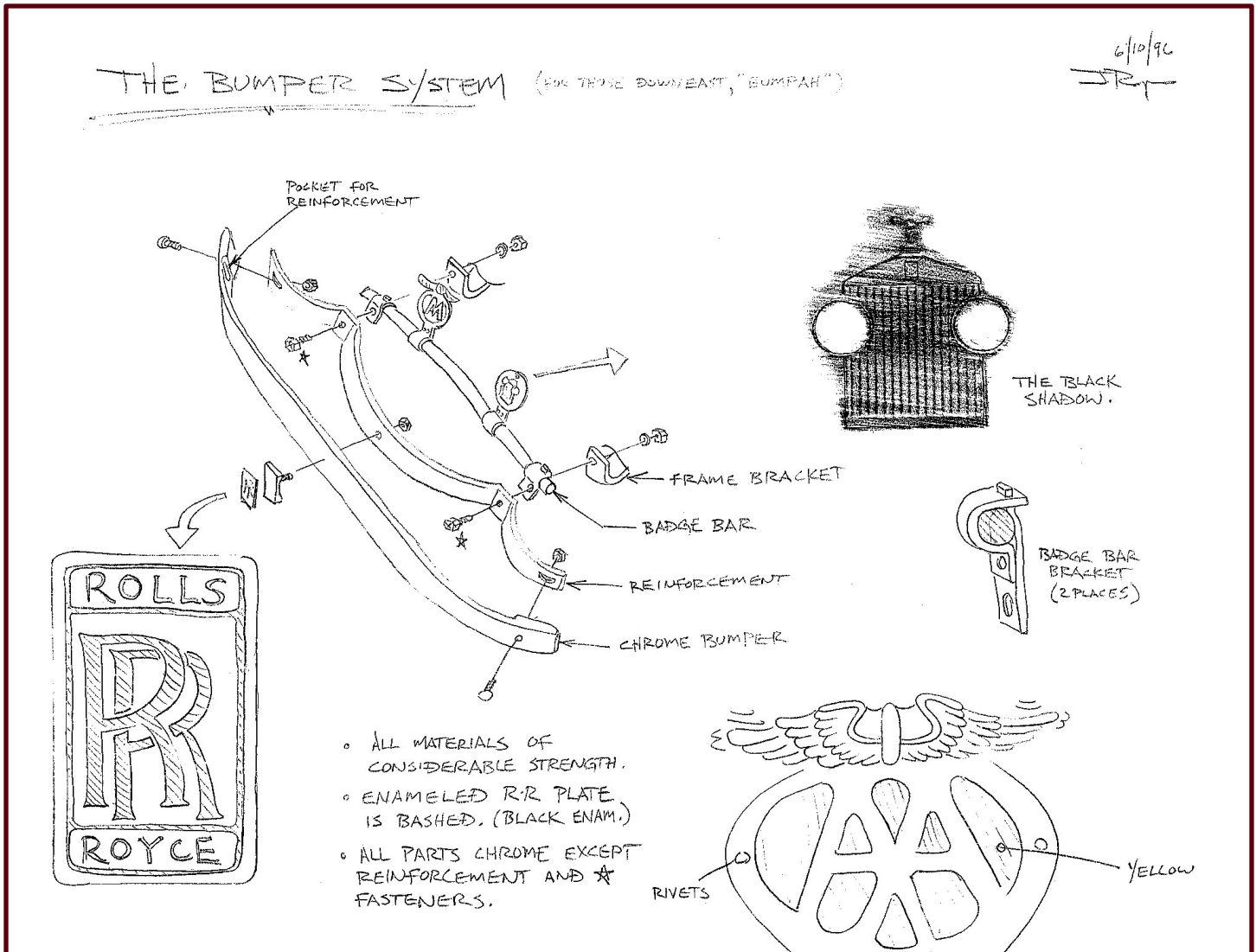
*GXN-19 tent camping on the continent. Photo: Rogers)*

of British poetry, added to the fun of this adventure. It also added to the fun to find that we could put John and Sue and Nancy to bed in the inner room of the new tent, and then go out to the back seat of the car, turn on the cut glass lamps, read and write letters and even sip a little Cherry Herring. One night, the adventure went a little further and we discovered steak and kidney pie and a wonderful gooseberry wine in the local pub, while a friendly English couple watched the kids.

We returned to London with confidence that we might now set out to explore the continent in a similar fashion. We packed up and moved out of 43 Flask Walk, thanking the mother of the owner again for a fine stay. And we set off for the ferry from the port of Dover. I remember getting slightly lost on the way and having to really “push” the car on some very winding roads to make it to Dover on time. It did just great! Sailing out past the white cliffs of Dover, made famous during the Second World War as a protective barrier for the British, was a handsome sight.

When we arrived in Calais, France, we spotted what looked like a perfect camping ground right up on a high promontory overlooking the harbor and the English Channel. In fact, we discovered an available campsite right at the very top with a fabulous view in all directions. All was well until the middle of the

## A Family Car for the Generations (continued)



*Detailed drawing of the bumper system for GXN19 with comments - Illustrations by John Rogers*

night a ferocious wind came up. The tent rippled and pulled at the moorings. The whole apparatus seemed like it would be lifted up and blown away. It seemed too dark and scary to try to take it down and move, so I simply drove the Rolls up in front of the tent, tied as many lines as I could to the bumpers, axles and door handles, and hoped for the best. Fortunately, we came through the night unscathed – but wiser. Our Rolls had proved to be an extraordinary guardian.

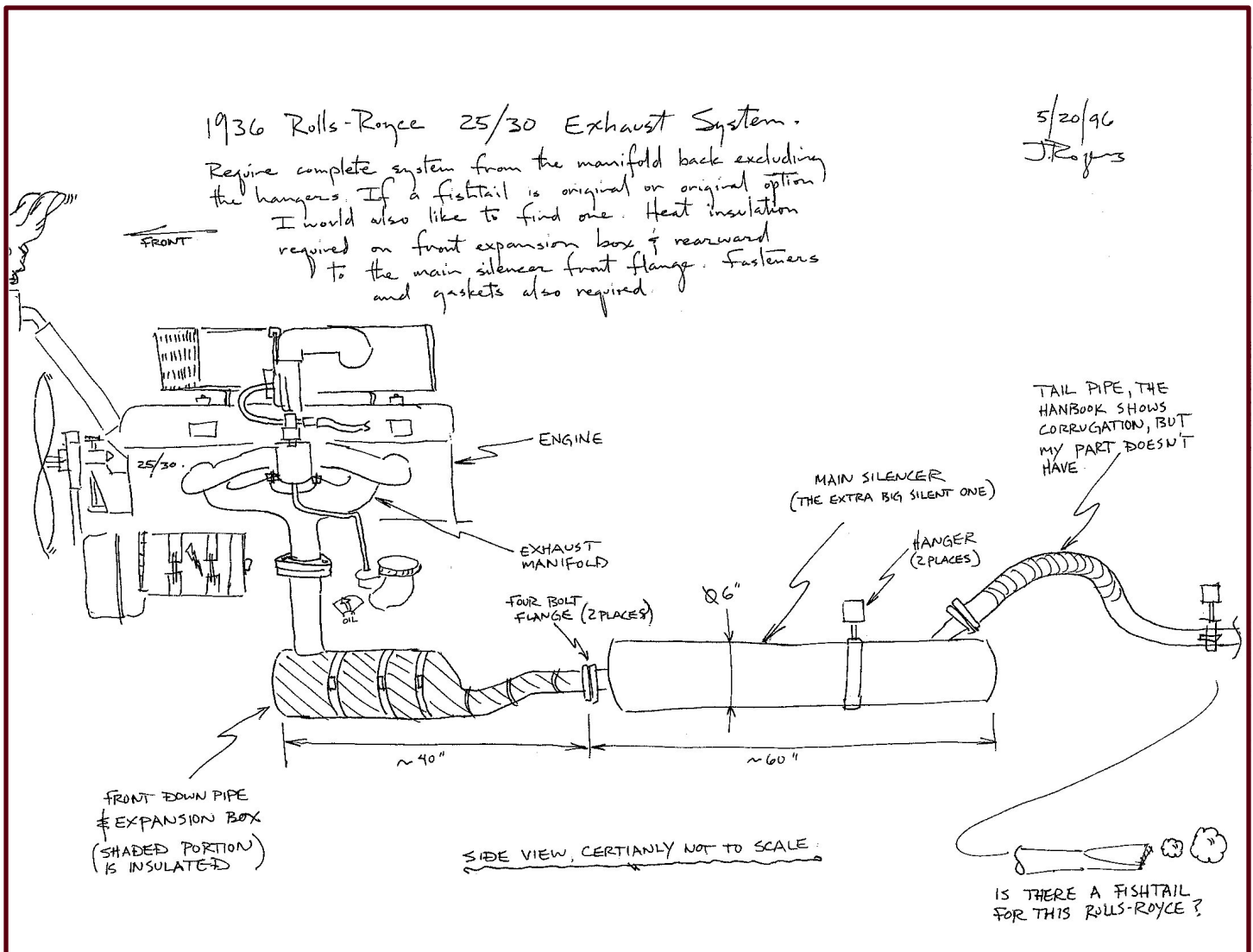
We went on through France, Holland, Belgium, Denmark, Germany and Switzerland, found wonderful campsites, enjoying the vistas and the coast, exploring streets, museums, churches and galleries in the towns and meeting fascinating folks from all over the world. These opportunities to meet and enjoy new friends were a special bonus for the kids, as they often played in the campsites late into the evenings, chattering on in dozens of languages at games they all seemed to understand quickly. The French would help us find the bakeries, the Germans would help us tighten our tent lines properly, the Dutch would often salute as though we were the royal

family, and the Aussies would regale us with down-under stories.

Perhaps the most beautiful stays during this summer odyssey were in Switzerland. I will never forget the campsite at Lätterbrunnen near the foot of the majestic Jungfrau mountain and close to the mist from the elegant "horsetail" waterfall. We bought hiking boots and lederhosen for John and with the girls we hiked like troopers past rustic chalets, and fragrant fields of alpine flowers on trails up to Wengen – a town completely inaccessible by roadways. We also went up First mountain on a chair lift, then hiked down. The pictures from there look equally romantic and majestic against the backdrop of mountain glaciers.

When it came time finally to return to the USA, we went to La Havre, France, and made arrangements to ship the car while we took a taxi (with all of our gear!) to a ship on which I was to work for the Council for Student Travel. Leaving the car which had become our security blanket as well as our transportation, closet and living room for some ten weeks was like being set adrift. We shipped it on the French Line, using services of Continental

## A Family Car for the Generations (continued)



*Plans for the exhaust system to be fitted to GXN19 with notes - Illustrations by John Rogers*

Forwarding, Inc of 82 Beaver St., NY, NY, international shipping agents and custom house brokers. The total cost including insurance was \$412.00 – which at the time seemed like a lot – and we had very little paper work to prove the car was even ours, having given up the log, the keys, and the license to the shipping workers.

Imagine our distress then, when we arrived back in New York state and I went down to the docks with my dad to pick up the car, discovering it was nowhere to be found!! We even went to look aboard the ship – the “Gautatyr” - which it had on the manifest. But the hold was empty – and so was the big net suspended between the ship and the dock “just in case.” I had visions of some dock hand taking it for a joy ride around New York – or worse, of someone having stolen it. We had to leave town and go out to Richmond Indiana in order to begin the new school year at Earlham College with the mystery still unsolved. We didn't discover until the middle of September that the car had been back-listed and sent later on the “Washington.” Dad went down from Hudson, NY to pick it up, only to discover that they had damaged the front end

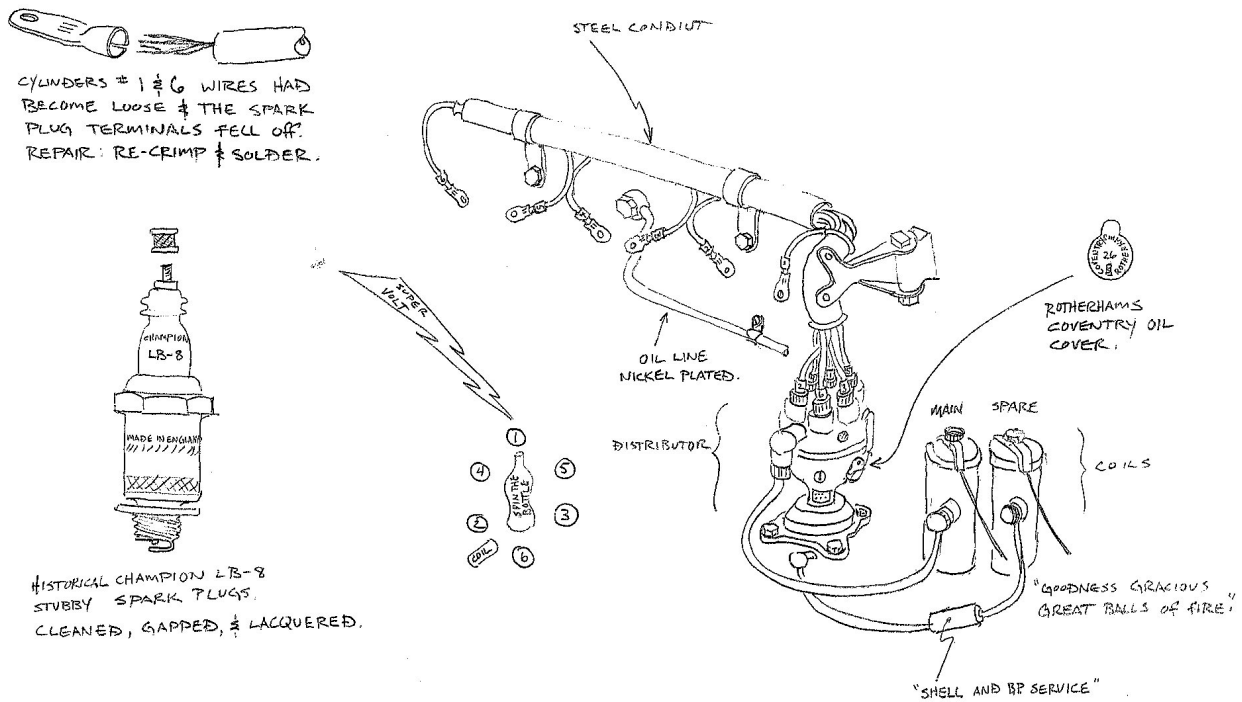
and the back by picking it up with straps from the axles around the aluminum bodywork. Fortunately, the insurance from La Concorde, 5 Rue de Londres, Paris (IX) – all written in French but only on a manila envelope! - came through. We had it repaired in Indiana. And it was soon registered and ready to go again stateside.

In Indiana, I frequently commuted to college in the Rolls, creating quite a stir on campus. Leigh Gibby of the English department borrowed it on occasion to make an experimental film. We ran it in a car rally and actually won first place against some pretty racy sports cars. We took friends out for rides. And we went to classic car meets – frequently in Ohio.

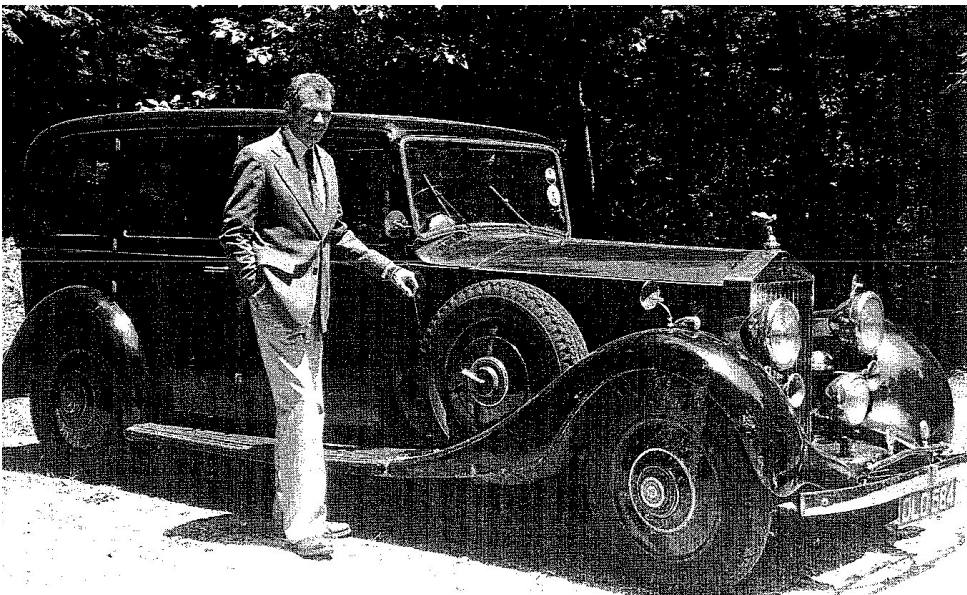
When I left Earlham to go teach at Harvard, we drove the car out to New England with no trouble at all. I again used it to commute occasionally from Sudbury, MA to Cambridge. I was a little leery of leaving it on the street in Cambridge, though, and soon it was relegated to ambling drives through the countryside and occasional parades and shows. It was frequently in the Sudbury Patriots Day parade. And we took it to the Rolls-Royce Owners'

## ROLLS ROYCE SECONDARY IGNITION LAYOUT

10/9/96  
J. Rogers



Identifying the parts of the secondary ignition system - Illustrations by John Rogers

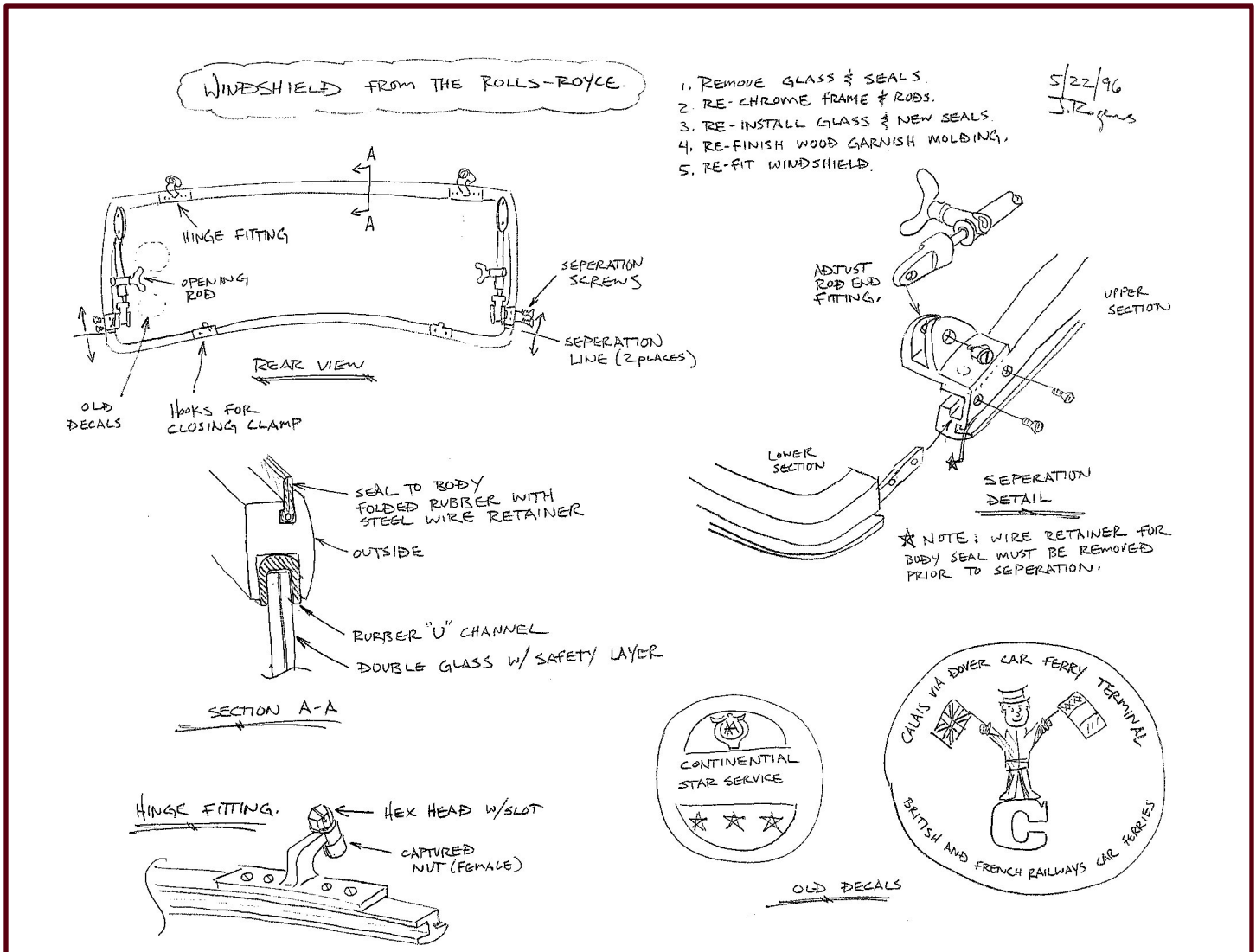


About the Drawings: Restoring your own car comes with many challenges. You need to quickly learn how the various parts work together... then remember it long enough to put the car back together correctly. Some people say to take lots of photos. While there is nothing wrong with photos I find it is more memorable if I sketch something. The simple act of drawing helps my brain learn the relationship between the parts. Add in a little humor and it becomes unforgettable. The old car is keeping me young by exercising my memory and teaching me some engineering. It is an honor to have an opportunity to be a Rolls Royce "student", please take a look at my "homework."

John Rogers

Left: Rogers with GXN19 in a photo from ca. 1966 Photo: Rogers

## A Family Car for the Generations (continued)



Above: Drawing detailing the fitment of the windshield of GXN19 including the hinge portion.- Illustrations by John Rogers  
Below Right: John Rogers stepdaughter Allie Giniel on the show field with GXN19 at the RROC National Meet in Troy, MI photo:

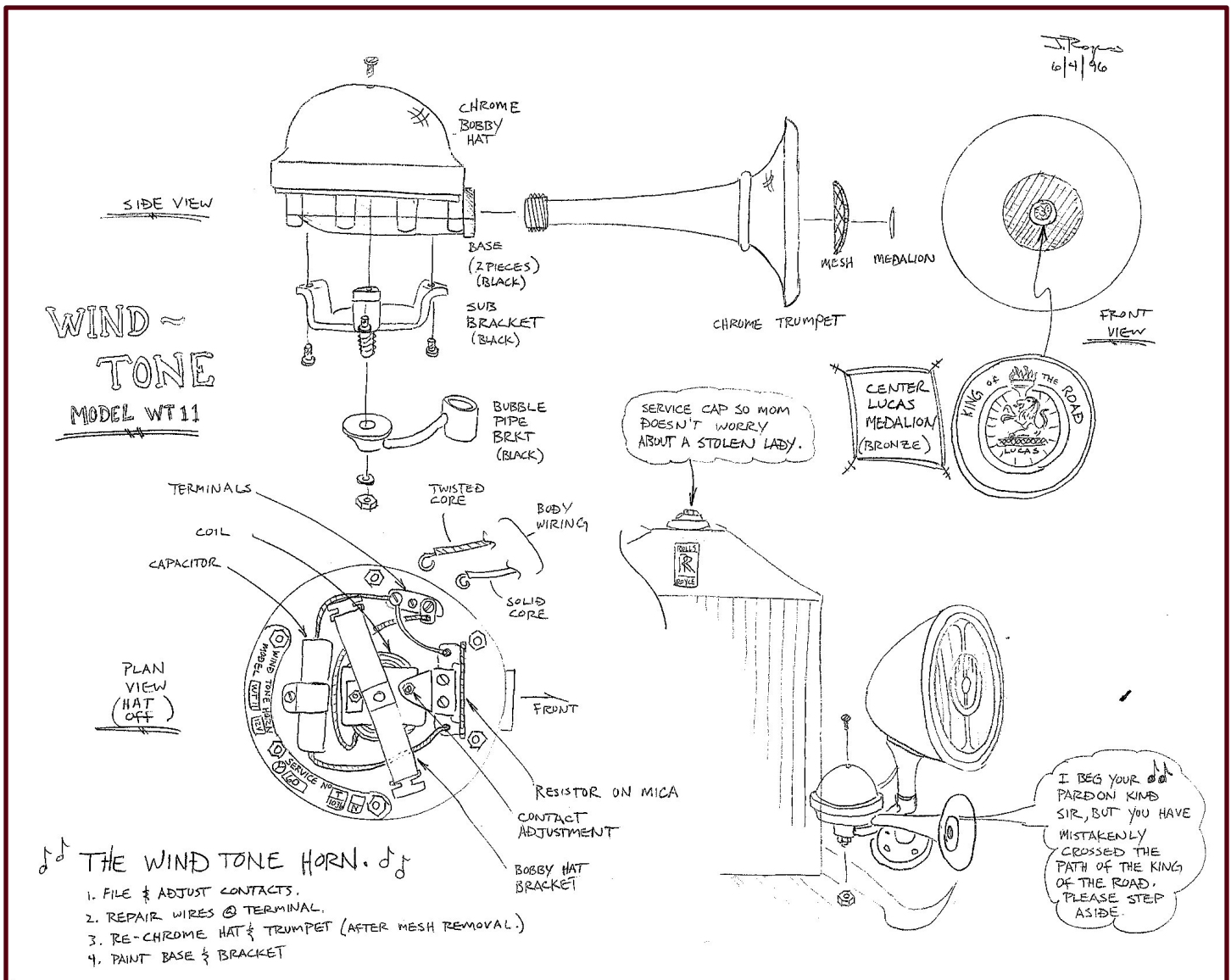
Club meets at places like Plymouth, MA and Newport, RI.

In the mid 70's, we drove it up to our house on the island of Islesboro, MA. There, we enjoyed it on a regular basis in the summer and put it in the 4<sup>th</sup> of July parades. In the winters, we stored it in our barn, usually up on jacks to protect the tires. After about 10 years, and after I had come to be President at Guildford College in Greensboro, NC, we decided to protect the car from Maine winters, and I drove it south.

That trip was a little adventuresome – mainly because of tire trouble. In fact, tires were the only problems we ever had while on the road. Earlier in Europe, we had a pinched tube in Denmark – the only mishap of the summer, and easily repaired. Then driving down from Maine, I sheared off a valve stem on the right rear and obviously had a flat. OK, I put on the spare. Then, somewhere in Pennsylvania, a big chunk of tread came off the spare that was on the right rear. Yikes! 640X19 tires are rare in the local garage! But I did manage to find a large supply store that had a 600x19 tube (for a Model T!). So, I put that in the tire that I had taken off the right



## A Family Car for the Generations (continued)



Above: The assembly and parts of the Wind Tone Horn for GXN19 are explained.  
On the facing page: The Lucas King of the Road Headlamp details. - Illustrations by John Rogers

rear from the first flat. Lo and behold, when I got into Virginia, the valve stem sheared off that tube, as well! Now, all I had left was the tube from the tire that had lost its tread, and the tire from the tube with the valve stem gone. By about midnight on the last night before I had to be back for the opening of school, I got the two put together at a big truck stop near Lexington. In the middle of the night, and in the rain, I drove carefully down the twisting roads of Rt 220 from Roanoke to Greensboro, knowing that I didn't have any options left – and thinking of who friends were that I could possibly call at that time of the night if I did get into trouble. Fortunately, I made it alright, and with about three hours sleep, went in to chair perhaps less than scintillating meeting for the Administrative Council the next morning.

In North Carolina, it has been fun to sponsor British Car Days at Guilford College several years, and to join similar festivities in Winston-Salem, Atlanta, and elsewhere. It was also enjoyable to put the car in homecoming parades at Guilford, especially the

sesquicentennial in 1987. And except for a few times when the fuel pumps needed rebuilding, or when the battery needed recharging, the Rolls was always ready to run as smoothly as ever. What a dependable car!

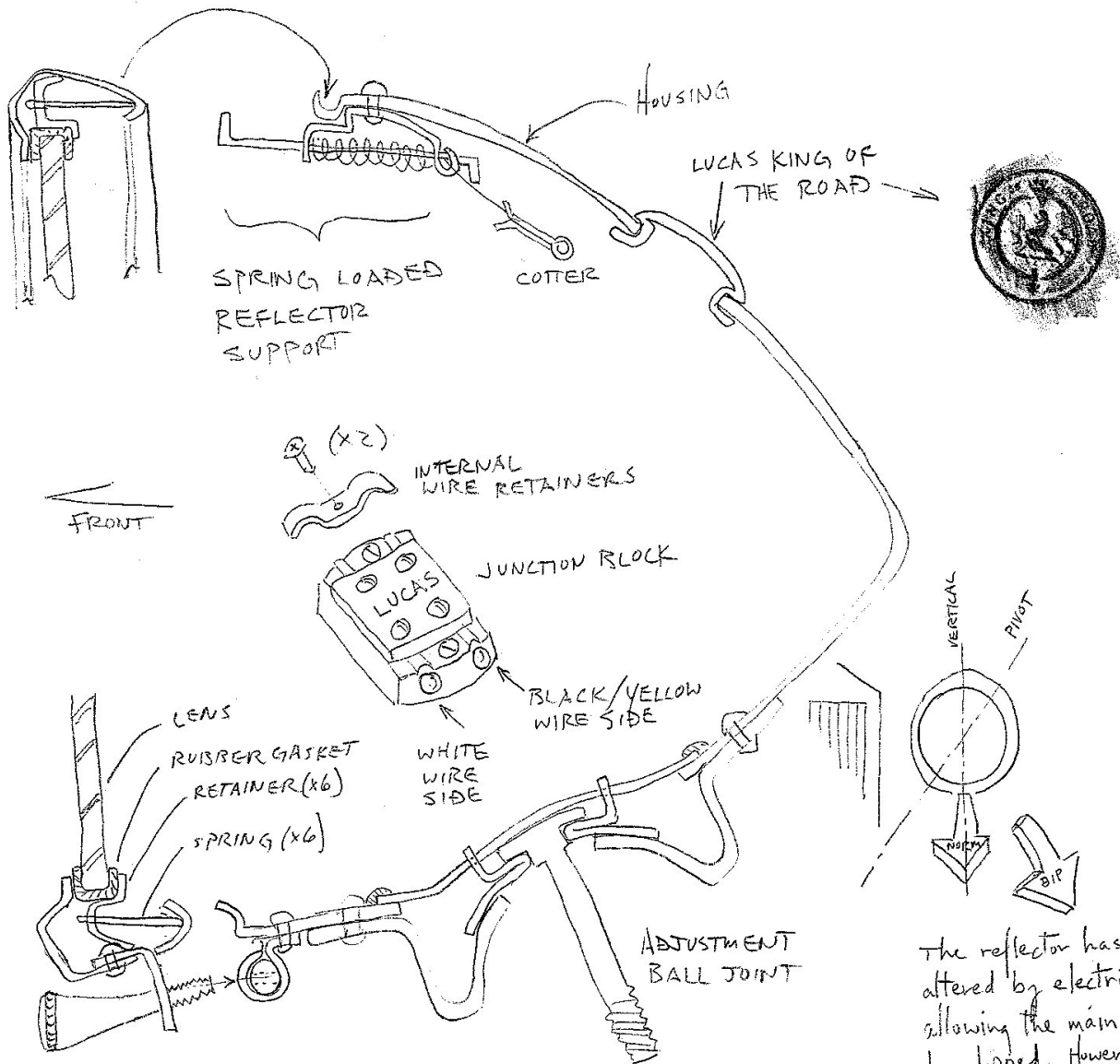
And now you have it, John. I am grateful and excited that you have taken on the task of going over the engine and exhaust system, and of getting it repainted so beautifully and having the chrome work done. I enjoyed refinishing the wood trim. And with a little upholstery work and some more putting back together (and maybe a couple of spare tires), it will be ready for elegant touring and shows and family fun for many more years to come.

Just think, we have owned it for 35 years now. And our baby is almost 65! Enjoy it!

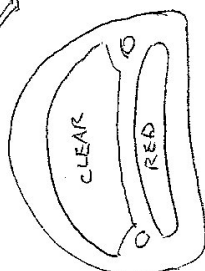
William R. Rogers, 2000

6/22/96

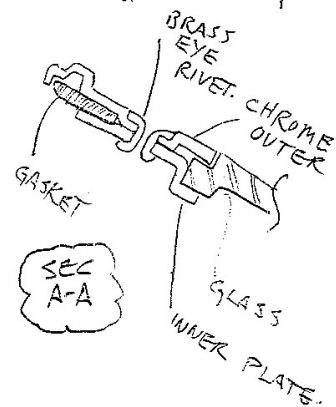
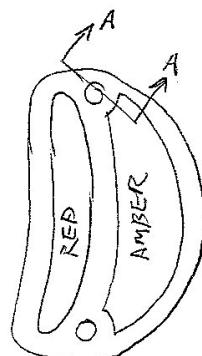
# Headlamp Details



## TAIL LAMP DETAILS.



DON'T YA BUMP MY BOOTY





*A rare sight: Two prewar Wraiths together! Eric Soya's 1939 Wraith WKC3 with Steven Ball's 1939 Wraith Hooper touring saloon with division WMB35*

## ***Quiet Elegance - Eric Soya's 1939 Wraith Thrupp & Maberly saloon WKC3***

*Story by Eric Soya*

For much of Rolls-Royce history they have built two categories of car: a larger model and a "small" horsepower. The small horsepower cars started as the 20HP, then the 20-25, 25-30, and finally the Wraith before WWII. The Wraith was a big improvement in drivability over the earlier models with upgrades to the suspension, steering, and brakes. It has an all-new overhead valve 4-¼ liter engine, which is one of the quietest engines Rolls-Royce built.

Wraiths have several unique and interesting features. A built-in hydraulic jack system allows the car to be jacked up (front, rear, or both) for changing a tyre or for seasonal storage. They also have an interesting Bijur chassis lubrication system. A pump of the pedal every day at the start of a drive sends oil through a dedicated series of oil lines to each of the lubrication points on the chassis where an appropriately-metered shot of oil is released. Why? Well, who wants to crawl around under a car to grease everything that needs to be lubricated?? Many people are surprised to learn these cars were built with a standard 12v battery system – while American companies were using 6v systems, England had long before begun using 12v systems. They have mechanical brakes because Rolls-Royce did not start using hydraulic brakes until the 1950's but to overcome some of the shortcomings of a mechanical system a servo runs off the output shaft of the transmission that provides power-assisted braking. A feature well ahead of its time is the adaptive suspension: a lever on the steering wheel allows the driver to select between a softer or firmer ride by adjusting the

resistance within the shock absorbers. The car was designed with two electronic fuel pumps and two ignition coils (in case one quits working). The large sunroof is another feature that surprises most people. And, one of my favorite features is the oil level indicator on the engine. No one wants to get their hands dirty pulling the dipstick out so a quick look is all that is necessary to make sure there is plenty of oil in the engine.

Wraith production was halted due to WWII, making it one of the lowest-production cars Rolls-Royce produced; only 492 were produced from October 1938 through 1939. Rolls-Royce built the chassis but the buyer would then find a coach builder to design and build the body; over 40 coach builders built Wraith bodies during production. Many bodies were one-off designs specific to the buyer's (or designer's) wish but a few of the larger coach builders had 'standard' designs they would just modify to meet a buyer's needs.

Our 1939 Wraith has a Sports Saloon body (four door sedan without division window) designed by Thrupp and Maberly. They built five of this specific design. One item unique to ours is a hidden compartment under the floorboards. Ours was one of the last 12 cars completed and delivered before all production ended due to the war - the chassis was completed in October 1939 but the body work was not complete and the finished car delivered to the owner until April 1940.

Early records of our car are minimal, which may be simply because it was delivered in wartime. However, we daydream there



*WKC3 had many admirers at the RROC National Meet in Troy, MI. Of the 492 Wraiths built, 42 had bodies by Thrupp & Maberly, only five cars were built by the coach builder to design 1417-A. WKC3 is one of those five cars. Photo by Mary White.*

is something more interesting in the history that explains how the car was completed after production had ceased and England was fully-engaged in the war. Maybe the hidden compartment (which was not mentioned on any of the build records we've found) had an important purpose...Sadly, we will never know for sure.

We bought the car on eBay after only looking at a few pictures. Before you shake your head and say 'how foolish', let me explain. At the time I owned a 1940 Dodge sedan but thought a Wraith might be a nice upgrade after driving one so I mentioned that to the friend who let me drive one he was working on. Thinking it would be a multi-year search to find a car that I liked the look of, was in the condition I wanted (restored but driver-quality), and in my price range I didn't think much about it. Two months later I got a text from him with a link to a car on eBay. I scrolled through the pictures, liked what I saw, and liked the "No Reserve" label even more! I spent the next two days daydreaming before emailing the seller some questions. I liked what I heard but wasn't comfortable spending that much money without seeing the car. I asked for some advice from the friend who sent me the link and we realized he knew the seller. He'd never seen the car but assured me that the seller was honest and would accurately describe it. That led me to throw a low bid on eBay; I doubted I would get the car but wanted to at least let the fantasy continue. As the end of the auction got closer, I began to think I might have a chance to get the car and with the encouragement of the same friend, I placed what was a more reasonable bid. My husband didn't yet know I was seriously

considering the car or that I had placed a bid so as the end of the auction got closer I became more and more nervous – both because I couldn't believe I was still high bidder and because I wasn't sure how I would explain the purchase. With 1 minute left I got my phone out and began staring at it. At 1 second left I was high bidder...then the screen refreshed and said I had been outbid and the auction ended. I figured I probably dodged a bullet and told my husband that car had sold reasonably priced. He asked why I hadn't bid, since it was such a nice car. Well, that changed everything! The next day I emailed the seller and told him that I was still interested in the car and if for some reason the sale didn't go through, I was still interested. Two days later, he called me to say the buyer claimed he was having trouble coming up with the cash so if I could match the high bid, the car would be mine. He even offered to meet me half way to deliver the car when he heard our common friend was going to pick it up for me. If it weren't for connections made through the RROC, I never would have felt comfortable bidding on the car without seeing it, so I certainly got my money's worth that year!

We have owned the car for seven years and driven it around 2,500 miles. During that time we have replaced the clutch, detailed the engine bay, and rewired the car. This year was the first time it has made it to a national meet but it has been shown at the Concours d'Elegance of America and the Concours on the Bluff but we've had the most fun with it just taking weekend road trips with a few friends in the back seat.

## Getting A Head!

### *A Beginners Guide to new New Cylinder Heads (Part 1)*

*By R. Pierce Reid,  
The Vintage Garage, Vermont USA*

Water, heat, pressure, electrolysis, abuse and... time. All things that will eventually cause your original cast iron (or for your big-HP car owners) aluminum cylinder heads to eventually wear out or corrode away. It's somewhat inevitable that, eventually, they will all wear out and then the owner is faced with a stark (and expensive) reality of buying and fitting a new cylinder head. And while the 'buying' part is rather straightforward... the fitting process is somewhat involved, definitely time-consuming, and failure to follow some basic principles can result in a severely damaged (or ruined) cylinder head! At between \$10,000 and 30,000 for a new head (small and large HP) buying one is bad enough. You don't want to buy two!

In this pair of articles, we will be looking at what leads to the purchase of a new head. And then the detailed steps to fitting one properly to your large HP or small HP car.

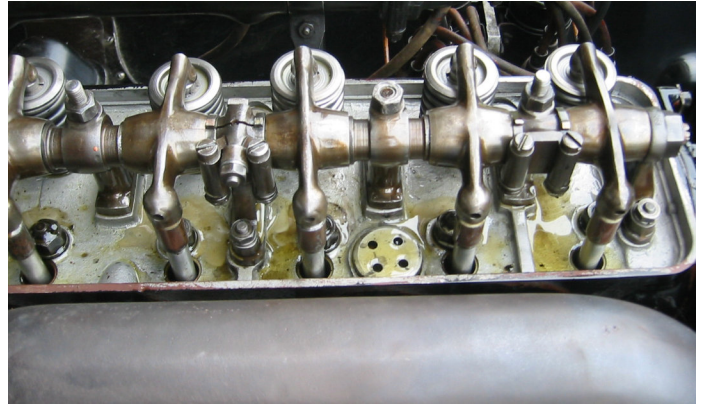
#### **Why do I Need a New Head? Mine looks Fine?**

Before you can begin fitting a new head... you have to go through a veritable Kubler-Ross model of Cylinder-Head is 'gone' grief. This invariably involves the steps of denial, anger, bargaining, depression and, finally, acceptance. With a few extra sentiments thrown in... mainly "I have a great welder", "I know a guy in Texas who can make me one," "Maybe we can find a used one," and a favorite "What about Bar's Leaks?"

Unfortunately, the things that make a cylinder head unserviceable are generally not repairable. Because if they were repairable, the specialist shops would be busy repairing them, not recommending (in strongest terms) that you need a new one.

To address some of the common responses... many 'failed' cylinder heads do look fine! Not all heads have obvious or external damage such as freeze cracks. Especially the aluminum heads fitted to the late P1 and P2 cars. That is, they look fine 'externally.' Because the damage occurs inside as the aluminum dissolves away. This can result in anything from porosity and weeping to actual holes. This can be exacerbated by proximity to copper (stud/pushrod) tubes and studs. In a cast iron head, the iron also erodes away from the inside, leaving it either so thin that it is "barely" holding the water in (paint is not load-bearing) or actively porous and 'weeping' through the casting. Often this shows up first in leaking core plugs (water coming through the spanner holes) or the side plates, which are thin-iron castings. Once a head has reached this point, it is not repairable. The casting has simply been eaten away from the inside out.

Barely a month goes by at The Vintage Garage when we do not get a call about 'welding' a head... and if an owner is looking for the fastest way to completely destroy a head that 'might' be saved.. it is by taking it to that great welder next door who says he can weld it.



*Head weeping with porosity. This is an aluminum head, but the same does occasionally occur with iron heads that rot from the inside. Under running conditions, the water is actually leaking through porosity in the 'roof' of the head and into the rocker chamber.*



*Another picture of a head rotted through from the inside. Are we seeing a theme here?*



*Head rusted through from inside. Here is a Large HP aluminum head, rotted through from the inside. From the outside, head looks great. They dissolve from the inside out! Same is true of iron heads.*

## GETTING A HEAD



*Another head full of Bar's Leaks and aluminum oxide that has rotted off the casting. Once a head is rotted this badly, there is no repairing it.*



*Head full of Bar's Leaks. This is an extreme example of an owner trying to avoid addressing the head by continuing to pour Bar's Leaks into the head until the entire water chamber was plugged. The car actually ran quite well!*



*This is a core plug that has rusted through from the inside. While it looks solid, the rust from behind has eaten its way all the way into the hole for the pin spanner. If this is going on, inspect all plugs and replace them all. They are not cheap, but losing all your water externally or, worse, internally, costs a lot more!*

Trust us... your welder cannot repair a head by welding! They will sing a great song about a nickel rod and fixing it right up... and as soon as the welding is done (or it heat cycles a few times on the car), the 'weld' will crack right along the edges... leaving you with more cracks than you started with. An external crack in a head can 'sometimes' be repaired with cold-pinning, a soft-solder patch and Vacuum impregnation. But there are also no guarantees that this will work long-term. And you may be spending a lot of money on a small percentage of success. If one applies the costs of 'restoring' a marginal head to offset the purchase of a new head, suddenly the price of the new head starts dropping rather quickly. It is very easy to spend \$5,000 on 'attempting' to repair a used head. For a Small HP owner, that's almost half the cost of putting on a new one! With no guarantee of success.

A common thread (and common phone call to The Vintage Garage) is the person looking for a used cylinder head. (Oh to have a good supply of good used cylinder heads... ). Unfortunately, the cars long-outlast the heads. In fact, one of the most common reasons small HP cars ultimately get 'reduced to inventory' (ie scrapped) is that their head has gone bad and the cost of restoration far outweighs the cost of rebuilding the engine (often, it's NOT just the head). So even when a 'scrap' engine comes into the shop to be used as spares, the odds of the cylinder head being usable are very small. In the past 20 years, we have had about 3 – 4 serviceable blocks come in for recycling. And not a single cylinder head. Are they out there? Occasionally, yes. Usually in the hands of enthusiasts who want to keep a spare head for their car and may have bought a spare... back when one could find one. But in the same 20 years, we have not yet been able to buy a single 'good' used head for a small HP or P1/2 car. Not one. Which leaves us with the new-manufacture heads from the UK... more on that later!

Another common 'response' to having a bad head is the oft-repeated chimera of "Well, there are these guys in Texas who will make any cylinder head... and it only costs XXX... and they can do it because they have CNC machines... yadda yadda yadda." Um Hum. Perhaps. Here is what we do know about the mystery 'head builders' that folks seem to know of in Texas, or maybe it's Oregon, or maybe it's Wangarotta or Ulan Bator... We have never heard, even once, of a client getting a head delivered from one of these 'mystery' machine shops. Not one. We are aware of a number of people writing large checks to 'guys with CNC machines,' sending deposits, making phone calls. But we are not aware of a single head ever being delivered. Maybe it's happening. But if there were some folks banging out cylinder heads at the touch of a button, we'd be buying them and fitting them! They aren't. And, moreover, you can't CNC machine a solid block of aluminum into a hollow, complex casting. Moreover, the 'point' of CNC machining is that it is economical to make things in a volume manner. Making a single Small HP cylinder head is NOT volume production. It is not where them newfangled computer machines shine.

In addition, the UK producers of the new, replacement heads are well-versed in CNC operations. But they are machining a casting... not a billet. Without the casting, there is no head. And much of the cost associated with new heads is incurred in the casting (and pattern-making process), not in the machining. And, to put in perspective, a set of patterns for a complex cylinder head

## GETTING A HEAD

(just patterns, mind you) can cost \$100,000 or more to make.

One technology that is showing a lot of promise is 3D printing. The high-end machines are already making highly-complex parts such as aircraft jet turbine blades and very stressed aerospace and defense parts. The technology is getting to the point where, sometime in the next decade or so, printing of new heads will be practical. Unfortunately, we have been saying that for about the last 20 years... since 3D printing with polymers was in a nascent stage. We will, likely, get there eventually. But even when one of these machines hits a price-point that it makes sense to dedicate their expensive printing time to a Rolls-Royce head, one is still going to have to do hundreds of hours of programming in order to tell the machine what to do. Followed by hand-work (you can't 3D fit pushrod/stud tubes, valve guides, studs...) and, of course machining. Because you can only 3D print a rough item. And it needs finishing. So while promising...printing is not yet panacea.

Last... there is always the thought of magic elixirs and potions and powders and wonderful panacea's that you pour in your cylinder head and, magically, it comes back to life. Well... you can try. Often, some of these will end up doing more damage to your head or engine than nothing at all. Bar's Leaks plugs your block and radiator up. Acids or 'solvents' may well remove the lime and scale that is the only thing holding water in. And epoxy's, etc. are simply not going to last longer than a few engine starts (which is why used-car dealers love them... caveat emptor!)

So by now, you are probably at the depression stage... because you are accepting that there are no shortcuts. But all is not lost.

### When can you repair a head?

Fortunately, a decent percentage of cylinder heads can be rebuilt... and are. To put a number around it, we generally have to replace the heads on about 1 in 5 engines that come into the shop. And the blocks on about 1 in 10 engines (excluding Ghosts) need replacements. This number goes up with the P1/P2 aluminum heads, which almost all seem to be at the end of their lives after 70 – 85 years in service. But among cast iron heads, most are, in fact rebuildable.

Typical rebuilding process for a head involves the following steps: Removal from car and dismantling; degreasing and pressure washing, stripping paint for an 'initial' inspection to look for any obvious cracks and earlier repairs. You don't want to put a ton of time into a head and then find you have to condemn it later. If it passes an initial test (and this may include an air pressure test where we put 50 PSI of air into it and look for bubbles that identify cracks or porosity), then it can move to the next stages. This involves removing the valve guides, the two-dozen or so core plugs and picking out as much rust and scale as can be reached. This is followed by bead blasting\*\* or hand-cleaning and Mag-Na-Flux testing for cracks.

\*\* Note that we want to avoid getting 'bead' into areas that come into contact with engine oil. However, heads and, often blocks, often have to be an exception to this rule. Extensive, rigorous cleaning keeps glass out of the final product... because any interaction between glass bead/grit and bearings in a finished engine is bad. But often, hand-cleaning is not an option as it may not get things clean enough for mag-na-fluxing or it may be un-economical vs. the time it takes to clean the bead from a 'frosted' casting. But beware, always, the combination of glass bead with areas that come into contact with oil!!!



*These pictures show a poor pin repair on the side of a head. In fact, this was a clear-cut example of attempted fraud by a so-called Rolls-Royce workshop in the Northeast USA. Not only was the 'pinning' done by using hardware store bolts and sheet metal screws, but a plate was then glued over it and then buttered with Bondo before painting. The car was sold to an unsuspecting owner as having a 'rebuilt' engine. Caveat Emptor!*



*Above: The same head showing the plate edge on and the end of it. Unfortunately, the owner had no recourse as one shop's definition of a 'rebuilt engine' differs from another. Have cars inspected! This head was scrap before any of these repairs were attempted and, in reality, the time it took to 'hide' this head... would have gone a long way to paying for a new head. This kind of work was typical of the entire engine 'rebuild' by the way. As a rule, paint is not structural!*



*Left: These are water passages between the head and the block. Note the severe erosion caused by water flow and electrolytic corrosion caused by the copper/iron interface. These are repaired using bushings and re-drilled to fit the head gasket. Failure to repair these passages leaves a head gasket that will not seal properly. Right: Another bad pinning attempt at a spot where the head was not only rotted, but so thin as to be unserviceable. Once a head has rotted internally this badly, it is not worth attempting to repair. It is a time bomb on your engine.*

This must be done on 'bare' metal. Not on oily, painted or corroded surfaces. If the head casting passes all these checks, we will begin repairing corroded water passages, fitting new guides, doing valve job, etc. But only after passing all these checks.

It is also worth noting that we sometimes do get in heads (and blocks) with old repairs to them. Some potentially even dating back to their manufacture. These can include pinning and even some 'hot' repairs. And an 'old repair' that has already lasted decades is not a reason for declaring a head unserviceable. However, very, very careful inspection of the repair makes that determination. Also location. An old freeze-crack repair that has lasted a long time is often declared acceptable. An attempt to repair a combustion chamber... requires some deep soul searching before proceeding and, often, a new head.

If an external crack (ie. not one that connects water and oil) is found, this can sometimes be repaired by pinning. So can small external areas of porosity or thinning. However, these are always risky, because if there is one area, then there may be others we did not find. And if they start leaking later... the only recourse is to start again... with a new head. One can spend "much" of what a new head costs on attempting to repair a bad one. Advice... listen to the folks who have done a lot of them... We have Been there and Done That! For those who doubt what they are hearing or are not sure about what is being described or is 'in the photos,' then visit your engine! Go see, in-person, and get the explanation first-hand. Being an active part of your engine rebuild is a benefit to you... and the shop rebuilding it!

Last, the head casting is repaired at the head gasket joint, where water flow and electrolytic corrosion have 'bellmouthed' your water passages to the point that a new head gasket will not seal. This is a standard process and just part of recommissioning an old head. Note, too, that for the Small Horsepower cars, Rolls-Royce specified, c. 1947, that the front six water passages should be blanked off on the head and block, in order to improve cooling (it does... dramatically). One major clue to a small HP engine owner that their car has not seen 'competent' engine service in the last 70 years or so... is finding these passages 'not' blocked off. This should be an alarm bell that 'other' things may be going on that should be addressed.

Another process that is used regularly is vacuum-impregnation. This is often done, these days, to heads that pass all their pressure checks and show no cracks. As it can help arrest porosity and certainly is an inexpensive 'belt and braces' approach to prolonging your head's life. This process involves putting the head in a vacuum and then flooding it with liquid acrylic, then reversing the vacuum. This draws the acrylic into any pores, micro-cracks or other fissures that may not be visible or even problematic. Yet. This is done to 'most' of the heads that we repair at The Vintage Garage.

Last, if it passes all the tests, the head is reassembled with all new parts. New plugs (we almost never re-use the old, rusted core plugs) New valves and guides go in (in most cases) as the valves will be worn and, often, pitted at their stem seals. These pits will destroy the new seals. Guides are usually worn. Seats are re-cut. New rear end covers often have to be fitted if the gasket surfaces (or the walls) are thin. Overall, restoring an 'old' head is going to consume \$3,000 – 8,000 very quickly, in parts and labor.

So when contemplating new head costs, one should think in 'net' terms! Not just look at the retail price. A new head avoids purchase of a lot of expensive parts... and a lot of labor!

When Is it Beyond Hope?

While it's always good to pass on a positive bill of health to a car owner, there are some things that simply are not repairable... and are an immediate red-flag and indication that a new cylinder head is in someone's future.

First is cracking or damage in the combustion chambers. Once these high-stress areas are compromised, then the head is scrap-metal. Period. End of story. There are no repairs possible. And any attempt will quickly open up under heat/cool cycles and introduce coolant to your engine, with disastrous results. Any issues in the combustion areas are uniformly 'fatal' to the head.

Second is extreme porosity. Especially in the 'roof' of the head, where coolant will bubble up and mix with coolant under the rocker shaft. If this area is porous, it is a bellwether that other areas will be porous.. especially those that are 'not' constantly soaked with oil from the rocker. If it rusts here, it's rusted everywhere.

Third is cracks around the copper tubes or connecting tubes to water passages. Typically, we never remove the copper tubes from the heads because these castings are far more delicate than block castings. And the risk of cracking a casting is much higher with a head. So if someone has removed the tubes and been too aggressive swaging them back in, cracks can open up connecting holes. These are not repairable... because the stresses involved in swaging the tubes back together will open up the pin-stitches and the crack/leak will return.

Last, if someone has gotten all 'I know better' and decided to weld on the head... whether a Large HP Aluminum head or a Small HP iron head, then it's a non-starter. With the exceptions mentioned above where an old repair has lasted a long time, any head that comes in with recent welding done on it, is going to get relegated to scrap. It is also worth noting that a significant percentage of the heads that come in and have to be declared non-serviceable, could have been



*Crack in the combustion chamber. Probably caused by freezing. External freeze cracks can often be repaired with pinning. But internal cracks are a non-starter.*



*This head has a serious crack in the combustion chamber and an attempt has been made to pin it using hardware store bolts and screws. Needless to say, it failed immediately. Head has been sectioned to show the 'bodge' repairs and the extent of the crack, which extended behind the valve seat.*

saved, if the owner or the shop working on it had done some simple research. Because, well, the truth is out there!

### “Oops... Don't say Oops”

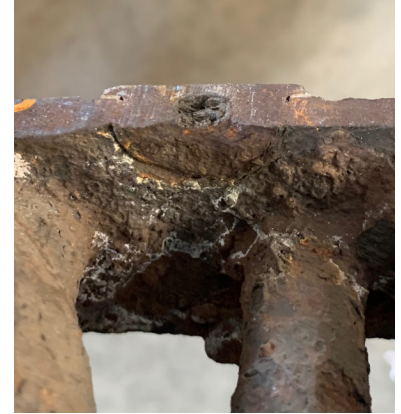
Much of the information above has been floating around in disconnected articles, snippets and a veritable series of Norse Sagas of Rolls-Royce and Bentley lore, but not written in a single, comprehensive article, thus the genesis of this series. So before we wrap up Part 1... here are some things that will, almost certainly, kill a cylinder head that might have been salvageable.

First, as we have discussed, welding. The fact that we have addressed this, now, three times in a single article should be a clue. Welding on engine castings is not to be done under any circumstances. And certainly not by your local blacksmith, iron monger or bodger.

Second, attempts at pinning or making other repairs in or around combustion chambers. We have seen some appalling ‘repairs’ attempted in these thin and critical areas. These repairs were probably also expensive and getting a refund, well, good luck. They may even have destroyed an otherwise good head, depending on what was attempted.

Third, attempts at fitting new valve seats to a Rolls-Royce head are virtually impossible. The castings are extraordinarily thin and delicate at the valve seat. And attempts to remove and ‘recut’ the casting for new seats WILL end up destroying the head. There are no ‘lead-free’ conversions for pre-war Rolls-Royce and Derby Bentley cars... they were all made to run on ‘unleaded.’ Folks trying to talk you into new seats, etc. for a lead-free conversion are selling snake oil at best, and putting your head at risk at worst. If the seats are receding (and we have yet to see a seat that was ‘so’ receded that it was the reason for the head being scrapped) then there are a number of strategies for restoring the rocker geometry and dealing with the issue. Replacing the seats is never going to end well.

Last, ‘induced’ cracks caused by folks unfamiliar with these castings. These include cracking the head while attempting to remove the copper tubes (simple solution... leave them in place in the head... only remove from the block). Or cracking a casting while fitting new valve guides. In fact, in the pre-war aluminum heads, we now fit valve guide sleeves which are swaged in and cut... rather than risk trying to take the guide out of an aluminum casting. On a cast-iron head, there are very specific ways of supporting the head while removing guides... and re-installing them. And failure to do it right can cause a head to, in worst case, break in half (and it has happened.) Cast iron is incredibly strong in compression. But it is weak in tension. So any time a ‘shrink, press or interference’ fit is being contemplated with anything in cast iron... caution is important. Even the tight fitting of ‘unlike materials’ with differing co-efficients of expansion is fraught with peril. If you don’t know what you are doing on a Small HP or Large HP head (or block)... don’t! Most of the tier-one shops can do this work via ‘remote control’ and return the repaired parts to a hobbyist or even another shop. There is no excuse for damaging a head... you shouldn’t have been working on in the first place!



*Left: Pin repair attempted up to a copper pipe (where the studs go). This repair will never work, because in swaging the copper tube in, you will spread the repair. Note that the repair does not go all the way to the pin... of course causing a leak. Right: These pictures show core plugs (these are NOT freeze plugs. They were used for removing the sand cores). Note the extensive internal rusting and the ‘center passage’ in the plug. There are also four more ‘holes’ for a pin spanner that extend deep into the the plug and will often rust through. If your head has water leaking out of core plugs, beware. When buying or evaluating a car, Look for those holes to have been plugged with silicone or epoxy. Or for ‘tracks’ where the coolant has leaked down the side of the engine. If either are present, be afraid. Very afraid.*



*Note that these plugs are often seriously rusted in place. And there are special techniques for removing them. Attempts to lever them out with a long breaker bar can EASILY crack and destroy a head. If you don’t know how to get them out safely, send them to someone who does. Or have them machined out. It’s time-consuming but safe!!*

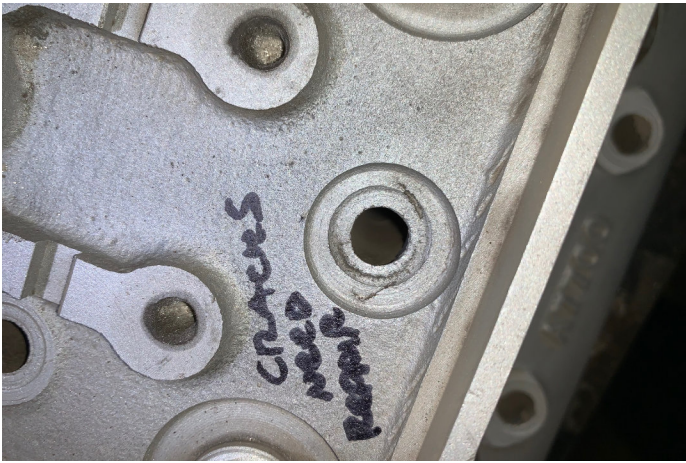


*Above Left: Milling the plugs out of a block. The process for a head is the same. Sometimes on a questionable head, this is a safer (though more time-consuming) procedure. These are being machined because they did not come out with ‘standard’ methods and we opted to stop attempting before breaking something. Save the casting!!!!*

*Above Right: After the plug has been machined out, one can see that there is no water flow behind it. This is why we remove plugs... to inspect and repair!*

## GETTING A HEAD

*Right: This iron head was assembled (and torqued) repeatedly without putting washers under the nuts. And owners failed to replace the head gasket every few years, so it was crushed into a solid wafer... with no 'gasket' properties left. The answer was to continue to torque the nuts to the point that they wore away the cast iron of the head... and cracked the head at several places. This head was destroyed completely by cracks that could have been avoided.*



*This is the same head, but showing cracks induced by failing to put a nut under the washer. The washers spread the load and keep the hard steel nut from acting like a cutting tool into the soft cast iron or aluminum. This is one of the cracks that destroyed an expensive head. Completely avoidable!*



*Valves punched full of divots. This sort of treatment of valves is inexcusable. It is not good for the valves. Take the valves out and put them in a 'valve stick' (drilled board) or in a piece of cardboard.*

### Acceptance...

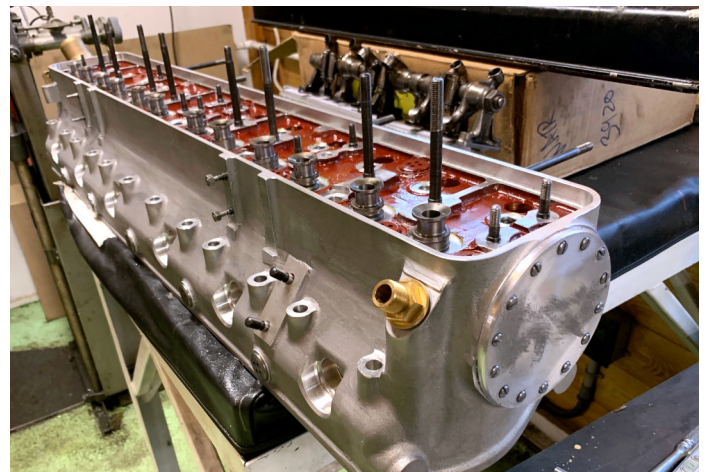
By now, we are at the final stage of cylinder head grief... which is acceptance that a new head will be required. Hopefully, you never have to get here. But when it is necessary, it is necessary!

Once a new head is ordered from one of the reputable UK suppliers, there is still work and some very specific techniques and processes involved! Because, while companies like Fiennes and Ristes can make parts that are accurate to .0005" on their equipment, they are supplying these parts to be put on cars that were built with files... by fitters.

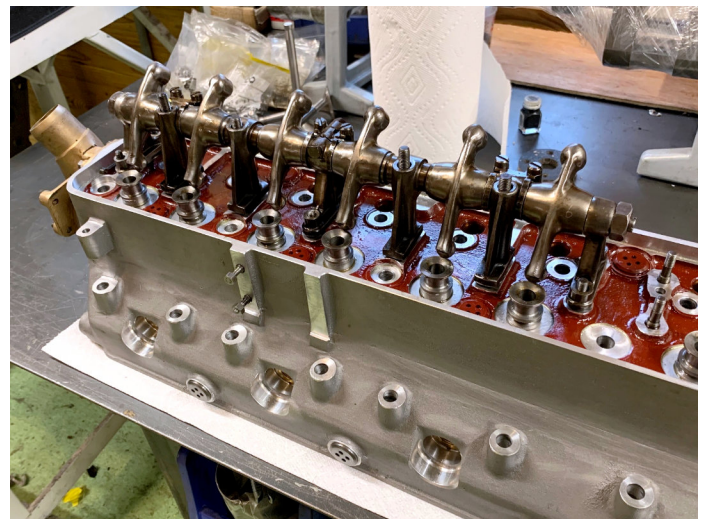
In our next article, we will look at the process of ordering a head and the time/steps involved in fitting it.

As a teaser... it takes about 40 hours to final assemble and fit a 'new' cylinder head. This is not a denigration of the quality of these heads, BTW. They are superb. It is simply the nature of working on hand-built cars... and failure to follow a few simple assembly principles and you may have to go through the stages of cylinder-head grief all over again... this time with the new head!

Don't be that guy!



*But wait... There's more...*

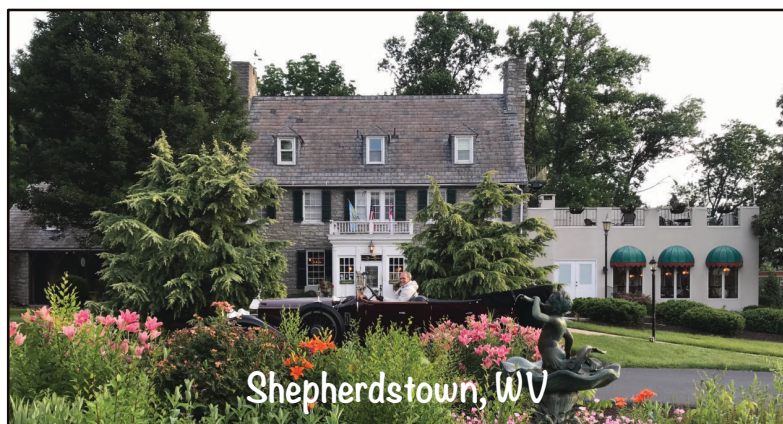


*Don't miss Part Two...In the next Flier!*

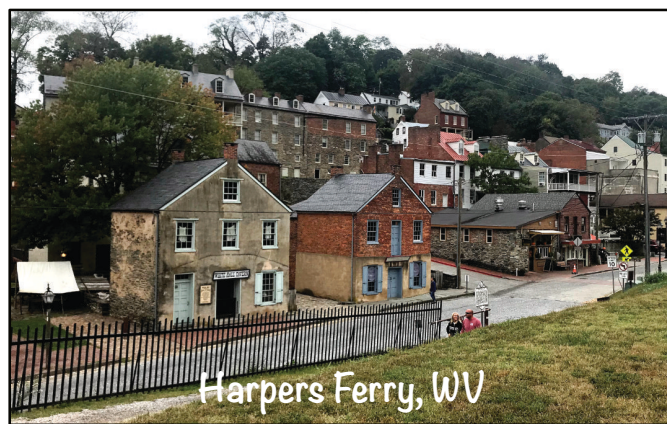
# Post-Gettysburg RROC Vintage Tour

June 28-30, 2020

At the request of many vintage car owners, the RROC is bringing back the Vintage Tour for cars from 1939 and earlier. It's a great way to travel the scenic back roads with fellow enthusiasts who offer camaraderie, knowledge and support. This 3-day mini tour immediately following the Gettysburg Meet will gather Sunday morning for breakfast, then depart for two nights in Shepherdstown, WV. The route will take us to visit Antietam battlefield, historic Shepherdstown (the oldest town in WV), Belle Grove Plantation and Cedar Creek battlefield in Middletown, VA, and Harper's Ferry. The tour returns to Gettysburg on Tuesday for a farewell dinner.



Shepherdstown, WV



Harpers Ferry, WV

**Registration Now Open  
on the RROC website.**

Space is limited to 30 cars. Hotel booking information will be sent once your registration is received.

**Questions? Please contact**

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Belle Grove Plantation