



THE

GOSHAWK



FLIER



RROC GOSHAWK SOCIETY
SERVING THE SMALL HP COMMUNITY

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Inside this Issue

Secretary's and Treasurer's Reports
Page 2

From the Chair's Chair
Pages 3 through 5

The Loose Screw
Pages 6 through 8

Berne to Brittany and a Rotor FTP
Pages 9 through 12

Anatomy of a Wraith Coil
Pages 13 through 15

A Farewell to Cerdic
Page 16



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The Goshawk Society

This is the sixth issue of the Society's newsletter, which is published electronically. The Society is an affiliate of the Rolls-Royce Owners' Club, and was formed to address the interests of enthusiasts and owners of the prewar R-R small horsepower series of cars. These models are the Twenty, 20/25, 25/30, and Wraith, and were built from 1922 to 1939.

Members are encouraged to submit articles and photos to the Editor (see email address at left). MSWord (DOC) text and separate JPG photos please. The Society and its editor seek to publish complete and accurate information, but neither assumes responsibility in the event of loss or damage. Readers use this information at their own risk. Articles published here reflect the opinion of the authors, and do not necessarily reflect Society or Club policy.

Officers, as just elected, are:

| | |
|--------------------|----------------|
| Chair | Gil Fuqua |
| Secretary | John Carey |
| Treasurer | Gary Phipps |
| Editor | Phil Birkeland |
| Technical Director | Wally Donoghue |



Part of airplane exhibit at Brooklands, a WW2 Vickers Wellington twin-engined medium bomber. Note unusual fabric-covered geodesic structure, which was covered by doped fabric. This Mk1 had Bristol radial engines; the later Mk2 had Rolls-Royce Merlins.

SECRETARY'S REPORT

By John Carey, Secretary, Goshawk Society

Members: There are currently 68 members of the Goshawk Society.

Election of Officers: Prior to the 2012 Annual Meeting of the RROC in Louisville, a nominating committee was appointed. The Committee consisted of Craig Hannum, Alan Talkington, and John Carey, Secretary (myself). One candidate was nominated for each position. The only change was in the position of Chair. Term limits in the Society's Bylaws meant our founding Chair, Tim Jayne, could not succeed himself. and Gil Fuqua was nominated in his place. All of us thank Tim for his years of service and for his successful efforts in getting the Society off and running. The slate was as follows:

Chair.....Gil Fuqua
Secretary..... John Carey
Treasurer..... Gary Phipps
Editor..... Phil Birkeland
Technical Director.....Wally Donoghue

The election was held electronically. No nominations were received from the floor. About half the members voted, and no members voted contrary.

Discussions at the National Meet: Most discussion was about were about Chassis cards and posting digital copies of drawings that have been indexed by Gary Phipps. Also, the Society's website has been finalized since it' initial offering. All members are encouraged to submit technical, social, or historic information to the webmaster at: webmaster@goshawksociety.com. GoTo : www.goshawksociety.com for the site.

TREASURER'S REPORT

By Gary Phipps, Treasurer, Goshawk Society

The Society's End of Year Fiscal Year (CY 2011) annual report was submitted to National on 6 January 2012. The total beginning balance was \$3,355, and the total ending balance was \$4,468. Revenues were \$1,895 (mostly dues), and expenses were \$782 (mostly for newsletter publication). No bank robberies this year (smile).

FROM THE CHAIR'S CHAIR

By Gil Fuqua, Chair, Goshawk Society

Dear Goshawk Enthusiast:

This is my first letter as the new chair of the Goshawk Society and I'm excited about our members' interest and enthusiasm about the Small Horsepower cars. I want to thank Tim Jayne for his leadership as the inaugural chairman of the Goshawk Society. He will be missed as our chairman, but I'm pleased that he will continue as one of our technical gurus. Thanks Tim for all you and your team accomplished to launch the Goshawk Society.

In addition to my election as the new chair, John Carey was elected Secretary; Gary Phipps as Treasurer; Wally Donoghue as Technical Director, and Phil Birkeland as Editor. Please thank them for their continued service.

G is for Goshawk

For those not familiar with the origins of Goshawk, it was the code name assigned by Rolls-Royce to the 20 HP. It's not coincident that the chassis numbers of Small Horsepower cars start with a "G," for Goshawk. The "G" chassis numbers were used for 20 HP, 20/25, and 25/30. The exceptions to this were the chassis numbers assigned to the very early 20 HP cars and the Wraiths. The early 20s had a numbering system that was similar to the 40/50 HP that was in production when the 20 HP chassis was launched. The thoroughly modern Wraith, launched in 1936, have chassis numbers that start with a "W."

The models for our Small Horsepower cars (20, 20/25 and 25/30) were named for their brake horsepower rating. Rolls-Royce used the brake horsepower rating as names for many of the pre-WWII models starting with the 40/50, later known as the Silver Ghost. The successor to the large horsepower Silver Ghost was also a 40/50 and was

called the new Phantom (later designated a Phantom I when the PII was introduced) to distinguish the new car from the Silver Ghost.

Wanted – New Editor for Goshawk Flier

Great benefits, chance for lifetime job security, earn the esteem of fellow members, highly rewarding (and only two newsletters per year). Apply to Society Chair. No reasonable offer refused!

One of my first official telephone calls as the new Chair of the Goshawk Society was from our newly elected newsletter Editor, Phil Birkeland. He told me that he planned to resign as Editor. Was it something I said? Was he from a blue state and I'm from a red state? West coast versus East coast?

None of the above! Phil sold his 20/25 recently (new owner in Australia), in favor of a '93 Turbo R his wife was willing to drive, and it was simply time to pass the job to another member. So.....

Phil has agreed to mentor the next editor and has a printer who handles the whole thing via email. Many thanks to Phil for his great work as our society's editor. He has done a great job in providing us with interesting reading.

Feature Your Car in the Goshawk Flyer

And speaking of the newsletter, we need your stories, tips about the cars, photos and more. Please consider writing a feature article about your Small Horsepower car, including the history about your car, previous owners, and photos. It will be great to learn more about these wonderful cars. Our newsletter will also be a great way to preserve the history of individual cars. A cover shot of your car would look

great on the cover of the Goshawk newsletter, and even better if it's left out on your coffee table for all to admire. Please send your stories and photos to Phil (philbirkeland@gmail.com) until a new Editor is named.

New Buyer's Guide Proposed

We are also considering the production of an 'authenticity guide' for each chassis within the Small Horsepower range. This will be a great resource for our members in the future and provides the opportunity to expand the project with a 'buyer's guide' for Small Horsepower cars. Don't you wish you had a buyer's guide when you bought your first car? You can support this project by submitting your thoughts on a buyer's and/or authenticity guide, including photos, tips and other information that you believe might be useful. Please send to Tim Jayne (tim@dennisonjaynemotors.com) who has agreed to compile the information. We'll try to reprint the really good tidbits in the newsletter as they are submitted. Let us know your experience on what to look for in reviewing a car for potential purchase.

Goshawks Soar Above Louisville

The RROC's Annual Meet in Louisville was a great success. The Saturday car show was held inside the giant Kentucky Expo Center, a fully air conditioned space that was most welcome due to the heat wave in the area.

There were some very fine 20/25s that showed up, including a lovely Vanden Plas drophead (GFE9) owned by Tom Jones of Lexington, KY. It was Tom's first visit to an RROC event and I believe Tom's enthusiasm for his car and the camaraderie of the club will bring him out again. His second place in Late Small Horsepower Touring was also an added bonus. This car also counted towards Tom winning the Brace Award (best pair of pre- and postwar cars.



Prescott Ammarell's 1935 20/25 GHY62 had particularly nice landau irons.



Matt Moran from New York brought his wonderful 1925 20 hp (GNK32). It was the oldest Goshawk at the meet and is a beautiful barrel sided tourer bodied by Melhuis. Matt was accompanied by son Harry.

Congratulations to Richard Coombs for his prize winning car at Louisville. He was awarded a



first prize in touring for the Early Small Horsepower Category. He had not planned on entering his lovely

20/25, a Freestone & Webb fixed head coupe (GYD44) in the competition, but his wife filled out the application and marked the car for judging. Way to go Lynn! Note Richard's big smile upon receiving his award (*Editor's note: Richard is the SEG on the left*). It's a great car and runs like a rabbit with its Tim Payne overdrive. Richard and Lynn drove the car from Columbus, SC to the meet in Louisville, a round trip of about 800 miles, not counting the morning breakfast runs and other sightseeing side trips.

Peter Kengeter served as the judge with the Small Horsepower Judging Team. He displayed his 1935 20/25 H.J. Mulliner limousine (GLJ52) on the show floor as well. Peter is shown in Richard Coombs' photo above, on the right.

Prescott Ammarell won a first place in Early Small Horsepower Concours with his 1935 20/25 Thrupp & Maberly drophead coupe (GYH 62). This is a really beautiful car that is most elegant with its polished wheel discs, dark navy paint and light fawn interior and top.

Stephen Sherriff won a first place in Late Small Horsepower Concours with his 1937 25/30 Hooper's Saloon (GHO1). In addition, he won the Hooper Trophy for the best Hooper bodied car at the meet.



GHO1's tool kit and air pump were most impressive. The airpump is an original, not a reproduction!



Prewar GA and LOP Drawings Now Available

Special thanks to Gary Phipps, World Authority on Prewar GA (General Arrangement) and LOP List of Parts) drawings, who kindly donated his database of these drawings to the RROC. These drawings include a goldmine of information about the Small Horsepower cars. Gary has spent countless hours compiling the data. His knowledge of these drawings is incredible, clearly making him the world's leading authority. The RROC plans to post thousands of images along with Gary's database in the near future.

In Closing.....

I look forward to seeing you at a future Goshawk event. These are great cars, so get yours out for a drive soon. Happy motoring.....Gil Fuqua, Chair

THE LOOSE SCREW AT BROOKLANDS

By Wally Donoghue, Technical Editor, Goshawk Flier



Even technical editors must take a break sometimes, so when I spotted an announcement in the Bentley Drivers Club Preview for a meet at the historic Brooklands race track (April 15th, 2012) I jumped at the chance like a trout going for a fly. It was to be a day-long event with driving contests and a lunch in the Members Dining Room of the club house.

This combined with the Music Box Society of Great Britain having their 50th Anniversary meeting the following week prompted Marlene and I to decide to travel to the UK and participate in both events. So, we scheduled a 3 week vacation in the UK, and, aside from sightseeing, also visited some Rolls-Royce enthusiast friends, such as Stephe Boddice, whom Goshawk members are familiar with. This article will report on just the BDC meet.

First, a little of the legendary history of Brooklands, for those who might not be familiar with it. While there were other various courses being used for automobile racing at the time, such as horse tracks, Brooklands was the first race track in the world built specifically from the

outset as an automobile race track. It was completed in 1907. In addition to being used for automobile racing, as a race track, within a few years it was also being used as an airfield. Then, shortly thereafter it became a manufacturing center for major aircraft companies. During both WW I and WW II it was closed to racing and devoted to the manufacture of military aircraft, one of the best known being the Hawker Hurricane (which along with the more famous Spitfire was powered with a Rolls-Royce Merlin). After WW II civilian aircraft were manufactured, the best known being the Vickers Viscount, an extremely successful and popular plane among air carriers in the US and worldwide. A large amount of fascinating history can be learned about Brooklands by simply Google-ing it. The best of many websites is the one for the Brooklands Museum at: <http://www.brooklandsmuseum.com>

The day before the event we stayed with Brian and Mary Goodman, good friends that we met on the Alpine Rally in 1973. Then the four of us departed the next morning for Brooklands to arrive in time for the morning start of the event. The photo shows Marlene, Mary and Brian in front of the Brooklands clubhouse.



The first part of the morning was spent looking at the Bentleys that had arrived, particularly the Cricklewood Bentleys, which we don't see many of here in the US. *Editor's note: Cricklewood is Britspeak; W.O. or Vintage is Amispeak; and Derby serves on both sides of the Atlantic),* We

also looked over the grounds and some of the aircraft displays outside, including a Concorde, which could be entered through stairs positioned next to it. Next, a little before 11:00, we all met in the Clubhouse where the leader of the event described the Driving Tests, the procedures, how points are awarded or deducted and the rules. A sheet was passed out showing how each of the 6 tests was to be performed. The front and back of this sheet is shown below. 1 PG @ HALF SIZE!

It was now time for the driving tests. Julian Grimwald very kindly lent me and Brian his 1996 Bentley Brooklands so we could participate in the tests. The tests were performed at stations, one after the other around parts of the old track. The cars were lined up and as soon as a car finished the first test, it went on to the next and the car behind proceeded to the first test and so on. The first test was up a steep hill, and since we were about midway in the line we could see the cars in front of us and in back of us and see each car charge up the hill.



Great sights and sounds, particularly sounds from the Cricklewood Bentleys. The next photo was taken when we were next in line and a Cricklewood Bentley can be seen charging up the hill.

Brian and I took turns for each test in Julian's Bentley and we did well on some of the tests and not so well on others. Needless to say neither of us placed very high in the scoring.

After the driving tests we went into the clubhouse where everyone was assembling after they completed their driving tests.



When everyone had returned we went on into the Members Dining Room where a delicious lunch was served and the results of the driving tests were announced.

After lunch we toured the museums. There are separate buildings housing historic aircraft and cars. In the "Motoring Sheds" a wide variety of cars are exhibited, probably about half of which I had never seen examples of before and some I had never even heard of. The emphasis is on racing and sports cars. Also, a wonderful exhibit of motorcycles was on display. I have included a photo of a small section of one of the "Motoring Sheds" and another of one of the motorcycles on display.

The aviation exhibits are in the "Wellington Hangar" one of several hangars used for building aircraft during WW II, including the Wellington Bomber, Hawker Hurricane, etc. Naturally, Rolls Royce Merlin engines could be seen. There are many historic aircraft, some of which I had only seen photos of previously, such as a Vickers Vimy (see photo below). There were so many planes crowded in that it was impossible to get a photo of an entire airplane, which is why only the front third of the Vimy is shown in the photo.



One of the more interesting exhibits is on the Dambusters, Barnes Wallis' bouncing bomb and their success in destroying German dams. This is accompanied by a video showing WW II footage of its development.

The day ended with our saying good by to the many new friends we made. We stayed another day with Brian and Mary and then left to meet up with Music Box Society members from the US who had come over to attend the UK Music Box Society's 50 th Anniversary celebration with us.

A general observation I have made over the years in reading both the RREC Bulletins and the BDC Reviews is that the UK clubs are much more active than our comparable clubs here in the US. They have many regions and each have frequent events where their cars are well used and driven. And the percentage of prewar cars at events is much higher than here in the US. Most of their events are fun driving events with relatively fewer show or judging types of meets.

BERNE TO BRITTANY - VACATION ADVENTURES IN A 20/25

Distributor Rotor as an Unusual Cause of an FTP (Failure to Proceed)

By Jonas Trachsel, Member RREC, Berne Switzerland

When I saw Giles Usher's invitation on the KDA132 website to join him with his MkVI for the trip to Brittany in early summer of 2011, I thought this would be a good chance to fulfill my wife Monika's long standing desire to visit this part of France. I liked the format of this gathering where nothing is organized in advance. Even dogs were welcome, so our Chesca could come along too.

So we left home in Berne on Sunday May 29th 2011. I had prepared GZU7, my 1932 Small HP Rolls-Royce as best I knew how, having experienced slight misfiring every now and then towards the end of the 2010 driving season. I carefully set the plug and breaker point gaps and checked the ignition timing and did a general service in preparation for the 1700 mile round trip.

Not long after crossing the Jura-mountains my wife sniffed and hinted me to a smell of burnt rubber or plastic. I pulled over and was alarmed to find dense smoke emanating from the right rear fender, definitely from burnt brake lining. Monika and Chesca exited the car, fearing an imminent explosion. What to do? Certainly not to call my brother to come with his trailer and pick us up!

Jacking the right rear wheel off the ground found it locked solid. The hand and foot brake ropes were loose, but the foot brake actuating lever wouldn't move. Hitting the lever as hard as I could with the rubber wheel spanner mallet seemed to free up the wheel. A half-hour of careful driving and several roadside checks showed that all was now well. I speculate that the trouble was a small pebble that had gotten thrown up during previous hard braking on gravel and that had wedged between the lever and the backing plate.

As we had lost probably more than an hour through this incident I started to push somewhat in an attempt to reach our hotel still by daylight. In this moment I was glad GZU7 had been fitted with an overdrive, relieving the engine from the stress of high revs. I had the accelerator to the floor whenever on the flat or up hills, lifting only on declines. We were doing around 70 mph on the flat and I even saw a genuine 75 mph on the GPS on occasions.

We reached our hotel Ibis near Auxerre in the dusk without further incident and got early to bed. Chesca was marvelous: She slept most of the time on her mat between the front and rear seats, no fuss, no nothing. Only a short stop for a dog-walk every 3 hours to relieve her.

We tried to get an early start the next morning, but feeding and walking the dog, having breakfast ourselves, repacking our luggage into the rather smallish trunk and fueling up GZU7 meant that we had to decide to use more motorways than planned. We still had more than 400 miles to go after all. Highways would have been more picturesque, but all these roundabouts are tiresome with an old car where you have to slow down to 15 mph and then accelerate hard just to find the next roundabout before you have reached traveling speed again. Traffic was mostly light with exception of around the big cities (Orleans, Le Mans, Rennes), and we reached Bannalec, our destination near Quimperlé to give us some resting time before dinner. The manor-hotel is situated some two miles outside the city of Bannalec, quite secluded in a park-like wooded landscape.



GZU7, a 1932 Mulliners of Birmingham 20/25 Sports Saloon, at Destination Hotel in Brittany

Our party was not very big but was fairly international: Two MkVI's from England, another one from Ireland, an S1 Continental by Park Ward from Germany and ourselves with GZU7 from Switzerland plus two couples in non RR/B cars from England and Guernsey respectively. Everybody went their way during the day, but in late afternoon one by one they trundled in to have a drink or a beer over car-talk before sharing the 3

course dinner together on a big medieval table. The cars were parked in the courtyard right in front of the rooms.

I am not going to annoy you with a description of all the tours and with details of our sightseeing that we did the next few days. The scenery was everything Monika had hoped for.



Monika and Chesca at a Brittany Coast Viewpoint

However, on Ascension Day while heading for the Pointe du Raz (land's end so to speak) I noticed some misfiring similar to what I had felt on the last outing in the past autumn. With increasing distance it got worse to the point where Monika noticed it too. Then GZU7 began to start reluctantly and even stalled in the middle of an intersection. I was able to re-start her with the ignition fully retarded, but as soon as I moved the ignition lever to the normal (advanced) driving position she spluttered and threatened to expire. With trepidations we reached our hotel.

Unfortunately Monika had a bad night with back pains, so we decided to have a rest day on Friday. This gave me the opportunity to look closer for the reason of the misfiring.

The first thought was checking ignition timing, as she was running after all with ignition retarded. With short bursts of the starter and the help of a big screwdriver I found the BAI-mark (Battery Advanced Ignition) on the flywheel, then I checked the ignition breaker points to just open when the ignition lever on the steering boss was moved to fully advanced. This checked out o.k.

Next idea: What do we have a stand-by magneto on our car for? Lo and behold: She started readily. This arrangement would bring us home after all, if repairing should fail. But I still had not yet found the reason for the problems on battery ignition. Well, then it must be the condenser.

Meanwhile the other members of our party one by one returned from their tours and came over looking for what I was fiddling with on my car. I asked if anybody had a spare condenser. Sure enough the chap from Ireland had one in his toolbox. However, reverting from magneto to battery ignition and swapping the condenser did not improve matters.

O.k. then, the last link in the chain not yet tested is the coil. The coil it must be, although I had one of these lifetime-guaranteed repro mushroom-top coils from Charles Tobin of the River Carriage Shop! The fellow from Ireland was willing to pull

one of two coils from his MkVI for testing.

Although the plug on the high-tension cable did not properly fit his coil output receptacle, we managed a makeshift solution for a test. Surprise, surprise: GZU7 is running again. Never-the-less, I decided to drive home on the magneto ignition, but the gentleman from Germany, coming to watch my doings, provided a spare standard coil from his trunk and urged me to accept it for free, just in case.

Monika's back aches did not improve. Hence Saturday was spent seeing a doctor and getting medicine, and driving to Bannalec on magneto. Because of her pains we decided to leave one day early and skip the Loire castles we had planned to visit on our way home.

On Sunday morning breakfast was late, and until we had packed up, paid for the hotel and said goodbye to everyone still there it was 11 am before we finally were on the road, by magneto ignition. But the joy was of short duration. After only some 8 miles, just after entering the motorway, GZU7 faltered and came to a complete halt on the lay-by lane. All the cranking and ignition lever moving is to no avail. So out comes the coil from Germany. I fit it with adhesive tape to the mushroom-top coil and wrap some isolating tape around the end of the high tension wire to make it stick in the output receptacle of the standard coil.



SPARE COIL INSTALLED

The engine wants to start, but falters again after a few revolutions. So, the trouble is not the coil. What now? I pull the distributor cap to look for carbon traces or a crack, but this would produce just a misfiring on two cylinders and not stop the engine altogether. Meanwhile, a road patrol had stopped behind us and safeguarding me with his flashing lights. Mystery, mystery: It is not the timing, it's not the coil, it's not the condenser, it's not the breaker points, it's not the distributor cap, it's not the carbon brush in the dizzy cap, what then? It must be closer to the spark plugs I reasoned, but where? In desperation I pulled the rotor to look deeper into the bowels of the distributor and handed it to the patrol-man to hold. He looked at it and said: Look, have you noticed this molten center of the plastic rotor?



FAILED ROTOR WITH MELTED CENTER

Hey ho, that is it! Instead of towards the spark plugs the sparks were diverted to the distributor drive shaft, shorting out on and off and now permanently! With a sigh of relief I went around the car and pulled out of the tool box a brand new rotor, that I happened to have ordered just before this trip. Apart from this rotor I carried only a set of contact breaker points and an exhaust gasket as spares with me. Quickly the new rotor was stuck on the distributor shaft, the dizzy cap replaced and sure enough GZU7 started instantly. Later I seemed to remember having read somewhere that there was a batch of poor-quality rotors around for some

time, as others had suffered from similar problems, but I do not know for sure if that's true.

Off we went again. We had planned to stop at the same Ibis hotel near Auxerre as on the outward trip, but due to the late start, the delay of over one hour because of this rotor-incident, and dense weekend traffic forcing us to deviate onto highways and 2nd class roads and we missed that goal. On the motorway again, we were caught in a fierce thunderstorm between Blois and Orléans, so fierce that the road was inundated with more than an inch of water. The sight distance was practically nil. Everybody was heading for shelter on the overfilled picnic-areas and lay-bys. When the worst was over, we took the next exit on the search for a bed, as dark had fallen by now. We were very lucky as we fell on a cheap motel immediately after the motorway exit. Rather exhausted we were glad to get any bed at all and after a quick meal in a nearby burger establishment were in bed by 9 pm.

The remaining 400 miles home on Monday were uneventful, the weather clearing up the closer we came to Switzerland. You may ask about Monika and Chesca: They took all this as God-given and did not accuse me for the mishaps. Monika's back was still sore, but the medicine kept the pain down so far that she could stand the long drive.

One last tidbit: Back home I was wondering about the fuel consumption on this trip. My speedometer and tripmeter are not very accurate. So I carefully retraced our itinerary on the internet trip planner and added up the mileage (rather: Kilometers). I was positively surprised to calculate a mere 14.65 Liters per 100 Kilometers (18.7 miles per US gallon) on the leg out and an additional 2 Liters (15.1 miles per US gallon) for the pottering around in Brittany. Not too bad for a "brick in the wind", I think.

Editor's Note: The next issue of the Flier should include another article on the author's adventures in buying GZU7, a car that eventually required complete reframing and reskinning of the body, a new block, and a new cylinder head.

ANATOMY OF A WRAITH IGNITION COIL

Possible Cause of FTP Enroute to Lake Tahoe, Recoring and Reproduction Issues

By Gary Phipps, Treasurer, Goshawk Society, Albuquerque New Mexico

Terry Saxe's trip from the Pacific NW to the August 2011 RROC Annual Meet at Lake Tahoe was plagued by a number of FTPs (failures to proceed), which considerably enriched the flatbed trucking industry. See his article in the Fall 2011 (Vol 3 No 2) issue of the Goshawk Flier.

Diagnostics by experienced prewar mechanics both at the meet and afterwards did not positively identify the fault(s). The two leading contenders were a bad coil (1939 original Rolls-Royce) and an intermittent open circuit in the low voltage wire to the points inside the distributor. The car now has a modern coil and a new wire. Whether these have fixed the problem awaits this summer's driving season. Likely both contributed to the ignition failures.

In this paper, the suspect 1939 original coil was disassembled in an attempt to see if the coil was the problem. If it was, then I wanted to see whether the original could be reproduced from scratch (I already make several PIII ignition parts) or whether it could simply be recored with a modern coil.

The original Wraith coil is very different in appearance from the earlier 20/25 and 25/30 side-entry helmet coils and the modern-appearing Early Postwar (EPW) coils. Electrically, the original coil is similar to other prewar coils. Appearance-wise, it looks like an EPW coil, except for one dominant feature. The top cap (which includes both the primary low voltage connections to the distributor and ballast resistor and the secondary high-tension connection to the distributor cap and rotor) is fastened to the cylindrical casing by four 5BA cheesehead screws which the factory rounded-off to prevent disassembly.

So, how does a coil work? The following circuit diagram is from a 1940 GM patent, which

unfortunately did not include a ballast resistor, which I have added. Item numbers on the figure are identified as follows:

21 & 20 Battery ground and battery respectively.

22 Soft iron core (dashed lines) that magnetically couples primary and secondary coils.

23 & 27 low voltage primary and high voltage secondary coil windings, respectively

23a Low voltage wire from distributor to coil.

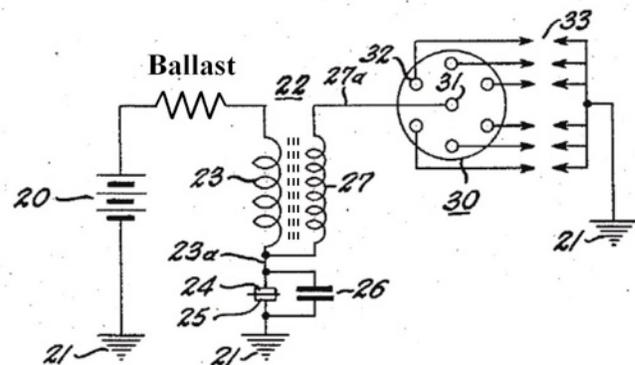
27a High voltage (HV) wire from top of coil to distributor cap.

24 & 25 Ignition points, here shown closed.

26 & 21 Condenser, and ground for both points and condenser respectively.

30, 31, & 32 Distributor, rotor, and rotor contacts respectively.

33 & 21 Sparkplug electrode gaps and grounds respectively.



Circuit Diagram for Coil Ignition

The system operates as follows. Start with points 24 & 25 closed. Current flows from battery through primary coil 23, through points 24 to

ground 21. Current and magnetic field in 23 builds to maximum. Points open. Without power from the battery to sustain the current in coil 23, the magnetic field in 23 changes rapidly. As the two coils 23 and 27 are magnetically coupled by the soft iron core between the two, a low current high voltage impulse is generated in the secondary coil 27, which in turn is transmitted to the distributor rotor and fires the spark plugs.



Original Installation of Primary and Spare Coils

The primary coil is on the left. The spare coil is on the right. Note the ballast resistor below the two coils. The four bright spots on top of each coil are the screw heads that Rolls-Royce rounded off to prevent unauthorized disassembly of the coils.

Lacking a proper tool to grip the rounded-off screw heads, the heads were simply ground off with a die grinder and cutoff disc. The following photo shows a ground-off screw head with the split-ring lock washer as originally installed under the heads.



Screw Head Removed

The core assembly and coil top were then simply slid out of the casing. Interestingly, the core assembly was not submerged in oil or potted in wax, as was standard practice to aid cooling. Air is a poor conductor of heat, making this coil design sensitive to overheating and burnout.



Casing with Core Assembly Removed

The next photo shows a Thackeray spring washer in the bottom of the empty casing. The purpose of this washer was to push the core assembly up so that the spring star washer shown on the right of the photo "Internal Parts" below could make contact against the HV terminal under the top cap. For this concept to work, the longitudinal tolerances of the internal parts must be controlled so that at the loosest condition, the Thackeray washer is still partly compressed and able to provide a compressive force on the spring star

washer that contacts the HV terminal under the coil top. On this particular coil, the original manufacturing tolerances were so loose that there was a gap of approximately 0.050", in effect adding this amount to the spark plug gap. So, the coil may have been marginal from 1939 to 2011 and then failed due to age on the trip down to Lake Tahoe.



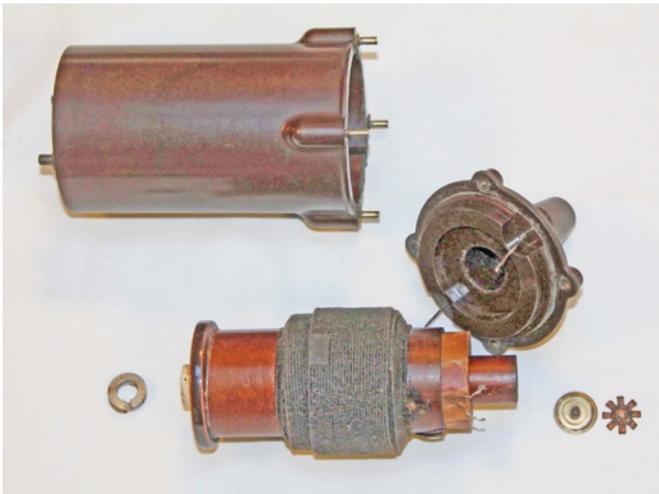
Secondary Winding Over Iron Core

This photo shows the HV secondary coil and soft iron core assembly slid out from the primary coil assembly shown in the previous photo. The larger diameter light colored cylinder is the high voltage secondary winding coil, and the loose wires on the right are a loop that provides connection between coils 23 (primary) and 27 (secondary).



Thackeray Washer at Bottom of Casing

The following photo shows all of the internal parts separated, except that the secondary winding is not yet removed from inside the primary winding.



Internal Parts

Shown from right to left are the Thackeray washer, the core assembly with the low voltage primary winding, and the star washer that makes contact with the high-voltage (HV) terminal. Sticking out from the right end of the primary sleeve is the end of a smaller diameter phenolic sleeve that the secondary winding is wrapped around.



End View of Iron Core and Secondary Winding

The iron core consists of a bundle of parallel soft iron wires held inside a thin phenolic tube. The high-voltage (HV) secondary coil is wound around the tube. The multi-strand wire shown bent over the top end of the iron core is the HV output of the secondary winding. It is these strands which the star spring washer should connect to the HT terminal in the cap.

Author's Note: Recoring or new reproduction both appear feasible. Consequently, if you are interested in either, please email me at gsphipp05@comcast.net.

A FAREWELL TO CERDIC, GPG23

In Tribute to My 20/25 on His Passing to His Next Caretaker, Greg Johnston, RROCA

By Phil Birkeland, Editor, Goshawk Flier, Tacoma Washington

Cerdic is a 1935 Hooper Sports Saloon, named after the legendary founder of the Kingdom of Wessex. He is male, as all Bijur-equipped cars leave their mark everywhere they go. He came into my care in the Fall of 2003, after a 12-year sleep in a mechanic's garage with his engine out for repair of a clutch throwout bearing (see Flying Lady, Issue 2004-2, Page 7293).

Since then he was shown in Touring Class at all National Meets until Columbia Gorge in 2007. Gradual restoration (exterior respray, headliner, leather, interior wood, crankshaft vibration damper, brake servo etc) improved his point score, until at the Columbia Gorge Meet his score became high enough to be eligible for 1st Place. Unfortunately, he was always up against a freshly-restored car and so never reached his goal of a First. Every year, he participated in a National Tour, with only one FTP (failure to proceed), due to a bad reproduction coil. He drove to the next hotel on magneto, which proved Sir Henry Royce's foresight.

My age (78), reflexes no longer comfortable for towing, and reduced energy levels mandated a change to a Modern Car. And so, Cerdic found a good home with Greg Johnston of Melbourne, Australia. The second photo is the Hooper works photo, taken before delivery in 1935. If you squint, you can just see the chauffeur in the chin-up posture with cap typical of the period.



Cerdic just after 150 trouble-free miles in 3 hours. Photo by Greg Johnston (in red sweater). Chum is Peter Crauford. Taken in Melbourne, Australia.



Cerdic new in 1935. Works photo taken by Hooper just before delivery. Photo obtained by Greg Johnston from Museum of Industry, London.



PHIL BIRKELAND'S FORMER 1935 HOOPER 20/25 SALOON, GPG23

New owner Greg Johnston, Melbourne Australia, Member RROCA

Shown on tour in Berea, Kentucky