THE
GOSHAWK
FLIER

RROC Goshawk Society
Serving the Small HP Community

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Goshawk Society Officers

Chairman: Gil Fuqua
gil.fuqua@cci-ir.com

Secretary: John Carey
jbcarey@sbcglobal.net

Treasurer: Gary Phipps
gsphipps05@comcast.net

Newsletter Editor:
Terry Saxe
bh-farm@juno.com

Technical Director:
Wally Donoghue
wally@plaidpants.net

In this Issue.....

As always, I warmly welcome your articles! ..... and thanks!!

Terry

Greeting

Fellow Goshawk Members

Old Wraith, Barb & I send our very best wishes to you and yours for a very pleasant Holiday Season! I'm not sure if it was the cold, ice, snow, frozen pipes or latches on the barn; but this year found me in a "holiday spirit" a bit earlier than usual.

As I write this missive, I picture some of you sitting on a veranda with warm breezes wafting over you, a cold drink in your hand, palm trees blowing in the breeze and the waves lapping on the beach.....boy, do I envy you!!

Another year has come & gone. I hope you and your beloved PMC continued to bond and spend many happy hours on the road. I know that some of you continue to toil with your PMC restoration project. I think that most of us...to one degree or other...like to "wrench around" with our cars. There is certainly some satisfaction in this. Take heart....you and your PMC will be on the road at some point...soon I hope.

This last 2013 issue of the Goshawk Flier will soon be on your monitor.... yes, another collector edition to cherish! Remember, fame and glory can be yours...just send me a little something for the next issue. We may only number 71, and we're spread over the planet, but we drive one of the most unique cars on the road....and that makes us special!

Happy Motoring....and let me hear from you.

Where Have All The Coachworks Gone?

Coachmaker	Founded	First Chassis	Last Chassis	Destiny
Park Ward	?	1919	1961	Purchased by RR '39
Hooper	1805	1904	1959	B.S.A.
Thrupp & Maberly	1760	1896	1946	Routes Group
HJ Mulliner	?	1900	1959	Purchased by RR '59
Barker	1710	1905	1938	Bought by Hooper
Vanden Plas	1912	1923	1946	Purchased by Austin
Gurney Nutting	?	1919	1945	Purchased by Barclay
Windovers	1796	1921	1946	Purchased by Henley
Freestone & Webb	?	1923	1955	Purchase by HROwen
James Young	1863	1908	1967	Restoration only
Arthur Mulliner	1760	1896	1939	Purchase by Henley
Rippon	1855	1905	1958	Purchase by Austin
Mann Egerton	1898	1901	1939	Purchase by Austin
Cockshoot	1844	1903	1945	RR retailer
Mayfair	?	1920	1939	Truck coachwork
Arnold	?	1910	1948	VW distrs
Vincents	1805	1904	1958	Auto sales
Carlton	?	1926	1939	Closed 1965
Abbot	?	1929	1955	Custom conversions
Lancefield	?	1921	1948	Aircraft factory
Offord	1791	1896	1939	RR retailer
Salmons	1820	1907	1957	Purchase by Lagonda
Caffyns	1865	1906	1936	"Auto Agent & Eng"
Crosbie & Dunn	?	1927	1939	Auto body repair
Maythorn	1842	1911	1931	Absorbed by Hooper
Lawton	1870	1908	1939	Commercial bodies

WHAT GOES IN THE SIDE TRAYS OF A 1926 20 HP?

Terry. Good on ya, mate. For what you contribute to our club. I only wish we lived closer to the heartbeat of our region, Seattle, as I really wanted to attend this Saturday's event in Puyallup. Even in a modern car, it's 5 hr. round trip.

For me, the fun of our cars is the build/restore process. Right now, I have two cars in this process, a 356 Porsche and an Austin-Healey 3000. After my award at the Forrest Grove Show last summer, I came home and asked myself *'what can I do better for 'Martha'?'* One month later, the repaired undersheets were installed and the carb air piston was reworked. Now I'm looking for what belongs in the convenience side trays in the back seat. Cigarette lighter? Perfume bottle? Business card holder? I have my feelers out to the 20 hp Section of RREC.

The 20 is a great car with all the funky controls and excesses but not one I'd drive to Seattle.

All the best,

Craig Hannum

Hi Terry, Thanks for the goshawk email. Send me an up to date directory. In 2005 I purchased a 1933 R-R 20/25 4 dr saloon. It needed some work as it had been neglected for some time. I read several books about R-R and joined RROC and AACA. After a year or so the car came together and we began enjoying it for local shows and trips. In Jan. of 2012 the "Antique Automobile" arrived, it contained a 2 page article by Bill Swope about the 1939 R-R Wraith in his KY museum. I was really impressed with the photos and discription of this Wraith, which I knew nothing about. In Feb., Hemmings Motor News arrived with an ad for a Wraith. It was only 30 miles away in Bradenton, FL. We purchased the Wraith in march of 2012. it is a wonderful driving automobile. Lois and I took our first national tour with RROC Sept. 26, 2013, Low Country Tour. We had a great adventure under the leadership of Skip & Sharron Wright. There were some maintenance items to do on this car when we purchased it, but thanks to technical goshawk guys like Gary Phipps & Dale Powers the rest of us can keep on proceeding. Regards, Norm Sinclair

Dear Terry,

Funny you should ask. I have this 1925 20 that I've been saving for a rainy day. It pretty well fits into the "as found in barn" category, arrived at the house 33 years ago with a full contingent of moths on board. Someone had decided to undertake restoration of the original Brewster landaulet body including stripping the paint and breaking some of the body frame. So it has been sitting in the garage ever since while I fooled around with Silver Ghosts and a 1935 20/25 Barker 4-light salon. The 20/25 was acquired subsequent to the 20 and since it was in running condition stepped to the head of the line. When its clutch started slipping it fell into the "needs work" category and the newly acquired Ghosts became the preferred RRs. Over the years the 20/25 engine was rebuilt, new clutch installed, body stripped and painted, seats reupholstered in leather, and finally 2-years ago, interior completed and car placed back in service. Its first big outing was the RROC Charlottesville VA tour two years ago. The biggest problem on that tour was water leaking from the radiator, the lower radiator fitting and the water pump gland. I did not discover until later that there are two packings in the water pump gland. The shaft on the pump was badly corroded so a new one from Fiennes was installed with a new bushing and (horrors) a modern seal in place of the packing. If that fails to be a success I can resort to original. Another "modification" was installation of an electric fuel pump when the Autovac failed. I am sure the Autovac problem is in its valves allowing the vacuum to escape as the fuel is being Hoovered up the feed pipe. A gigantic racing fuel filter was also installed since the tank was sitting with 30 year old fuel in it. At any rate the car is a delight to drive and, I hate to say it, makes something of a truck out of the Ghosts.

Now to get back to the 20. About a week ago I got a call from a fellow in Florida who had a 20 many years back and expressed interest in seeing my car with its restoration in mind as a project. The car is sort of all apart but he looked it over and didn't make any nasty comments. Of course what has happened is that his interest has now stirred up my interest in getting busy with what I should have gotten into 33 years ago. The car was acquired with the thought in mind of a father-daughter project. It is really priceless since part payment for it was a Porsche RSK which lacked its original engine and transmission but would now be worth a couple hundred thousand dollars, at least. Everything about the 3-speed 20 is so delicate. It just begs to be made into a 3 liter Bentley competitor with a light sportster body, maybe something with a fabric-covered body ala Vanden Plas. Of course the original body, sad as it may now be, is authentic and original to the car so it needs preservation and restoration since therein lies the cars true value. But still…

Which reminds me, I did have some interesting experiences with the 20?25 engine. Someone had "sort of" rebuilt the engine, or at least had put new main and big ends in. For some reason they hadn't cleaned up the engine and grit was imbedded in all of the almost-new bearings. I had the shims milled and the bearings rebored with good results so far. When first acquires there was a clattery racket coming from the front of the engine in spite of it's running reasonably well including a 300 mile round trip to Asheville. On removing the front timing cover it turned out that the hub for the spring drive as well as the friction linings were missing, evidently omitted when the engine was "rebuilt". I installed an oil filter assembly which attaches to the crankcase. When the engine was started up there was no oil pressure. The new oil lines were installed the only way they could fit but they were backwards and the flowback preventer in the filter prevented reverse flow through the filter. New hoses had to be constructed. One potentially weak point in my engine rebuild was a "cold" repair of the cracked cylinder head water jacket. My impression is that this is done with epoxy and the durability of that repair is unknown. It sure is a smooth-running sweet-driving Rolls…..Doug White

Heard on the Road

There is a positive correlation between Rolls-Royce car ownership and lifespan: Rolls-Royce owners live on the average longer than do people who don't own Rolls-Royces. That's not because Rolls-Royce ownership directly improves survival, but because Rolls-Royce owners tend to have lots of money, which enables them to pay for the best health care, which is the actual cause of their long lifespans……..author unknown

"We could have been here sooner"

An elderly couple were killed in an auto accident and found themselves being given a tour of heaven by St Peter. "here is your ocean side condo, over there are the tennis courts, swimming pool, and two golf courses. If you need any refreshments, just stop by any of the many bars located throughout the area. "Heck, Gloria," the old man hissed when St Peter walked off, "we could have been here 10 years ago if you hadn't heard about all that stupid oat bran, wheat germ & low fat diets!!"

"Men"

Men forget everything; women remember everything. That's why men need instant replays in sports. They have already forgotten what happened.

*

Two guys, one young, one older, are pushing their carts around the supermarket when they collide. The old guy says to the young one:" Sorry about that, I'm looking for my wife and I guess I wasn't paying attention where I was going." The young guy says: "that is a coincidence, I'm looking for my wife too. I can't find her & I'm getting a little desperate."

The Old guy says: "well, maybe I can help you find her…what does she look like?"

The young guy says, "well, she is 27 years old, tall with red hair, blue eyes, is buxom, wearing no bra, long legs and is wearing short shorts. What does your wife look like?"

To which the old guy replies:"Doesn't matter…let's look for yours!!"

California's Mother Lode and "Golden Chain" Highway 49

David Clover – owner of 1937 Rolls-Royce 25/30 chassis number GGM24

When the fall comes, one of the finest touring areas in California just begs to be driven in a small horsepower Rolls-Royce. This area is known as California's Mother Lode region transversed by the "Golden Chain" Highway 49 through the Sierra Nevada foothills from Downieville in the north to Oakhurst ('Gateway to Yosemite National Park') in the South. With the coming of the fall the daytime temperatures remain in the 70s-80s during the day but drop down into the 40s-50s at night, making it perfect for daytime cruising and evenings enjoying some fine dining opportunities and nighttime entertainment. This area retains so much of the flavor of the gold rush era that driving a prewar PMC seems almost modern.

Gold was discovered in California in foothills of the Sierra Nevada in January 1848 and soon prospectors from around the world were flocking to this region, displacing the natives of the region that had been enjoying a peaceful co- existence for more than a millennium. Towns appeared almost overnight to accommodate the influx of people and to provide centers of commerce, eating and drinking establishments, and entertainment. While few made it rich, they sure had fun trying. After the initial rush was over, these towns remained, barely unchanged throughout the 20th Century, still retaining their gold rush era charm. California Highway 49, the "Golden Chain", connects these towns in a nice leisurely fashion. With the exception of a few stretches, Highway 49 is mostly a twisting and turning two lane road with very few major elevation changes, but with plenty of sights to enjoy and places to discover and plenty of possibilities for overnight stays. In the past years we have had a chance to participate in several tours through this region, so I have combined these tours into one long article about our driving experiences in this region with the idea of having this become a Fall RROC Tour at some date in the future.

Our trip starts at Downieville [population 282, elevation 2966'], county seat of Sierra County. Once the center of gold digging along the North Fork of the Yuba River, today its tree-lined Main Street, wood plank sidewalks and old stone, brick and wooden buildings make it a great stop for exploring and photographing. It is a popular starting point for trails used by mountain bikers – so keep your eyes open. Coming into town from the East, you cross the river on an old **one-lane bridge** (shown at right) so make sure you establish the right-of-way.

Heading southwest through the evergreen pine and Douglas fir forest along the North Fork of the Yuba River, we pass through Goodyear's Bar, Camptonville, and Sweetbar before we get to Nevada City [population 3068, elevation 2525', county seat of Nevada County. In 1850-5, Nevada (meaning 'snow-covered') City was the most important mining town in California. Its downtown area has preserved it gold rush era with several blocks full of old wooden and brick structures just waiting to be photographed such as the **Fire Station** to the left. There are plenty of places to shop, eat and drink.

Leaving Nevada City we encounter our only section of freeway as Highway 49 joins Highway 20 for a short run to Grass Valley [population 12,560, elevation 2500], home of the Empire Mine and the North Star Mine, two of the richest gold mines in California. The Empire Mine, with its 367 miles of underground passages, produced over 5.8 million ounces of gold. In the 1850s, Grass Valley had a large population of miners from Cornwall, England, due to their experience in underground mining. Today this area still retains its Cornish heritage.

After Grass Valley, Highway 49 heads straight south through evergreen forested rolling foothills to Auburn [population 13,300, elevation 1550'], county seat of Placer County and home to this impressive **Court House built between 1894-1898**.

Auburn is divided by Interstate 80 and is a major gateway to the North Lake Tahoe ski and recreational areas. The eastward leg of the First Transcontinental Railroad built by the Central Pacific Railroad reached Auburn in 1865.

After Auburn, Highway 40 returns back to a twisting roadway as it descends and climbs the canyon created by the Middle Fork of the American River and then heads southeast to the gold discovery site in Coloma [population 520, elevation 750']. It was here on January 24, 1848 that James Marshall discovered gold at Sutter's Mill and, as they say, the rest is history. Today it is a State Historical Park, a great place to wander around. Parts of Coloma are considered a ghost town since a number of buildings, including the old jail, have been left to decay with age. At right are the **remains of Sutter's Mill in Coloma**

Highway 49 continues on to Placerville [population 10,369, elevation 1867'], county seat of El Dorado County. Known during the gold rush era as 'Old Hangtown' (after its form of frontier justice), it is crossed by Highway 50 and is the gateway to South Lake Tahoe and its wilderness, camping, hiking and ski areas. Placerville was home to Thomas Kinkade, the "Painter of Light" and one of the best-selling artists in America until his death in 2012. Many of the old buildings along the middle section of Highway 49 are featured in his paintings, however not in their regular settings.

Heading south, the countryside along Highway 50 changes to rolling farmland and is home to California's newest wine region, stretching southward to the town of Sonora. In just the past ten years, nearly a hundred vineyards and small wineries had come into existence (where to stop, where to stop?). Driving along this region you pass through Enterprise, Plymouth, Drytown, detour through Amador City, and to Sutter Creek (with all its wonderful gift shops) **shown at right in 1853** and finally into Jackson [population 4651, elevation 1200'], county seat of Amador County.

Named after Colonel Alden Jackson, this city is home to the Kennedy Mine, at 5912' the deepest gold mine in North America. Like most other mines in the region, it ceased operations in 1942 due to the U.S. Government passing the "War Production Board Limitation Order" which signaled the demise of gold mining in California since the government needed men for the war effort and gold was not considered a strategic war metal.

Past Jackson, Highway 49 becomes a smooth drive through Butte City, Mokelumne Hill, and San Andreas to **Angel's Camp** (population 3835, elevation 1400'], named after shopkeeper Henry Angell. Angel's Camp inspired Mark Twain to write is famous short story "*The Celebrated Jumping Frog of Calaveras County"*, a Frog Jumping Jubilee is held here every May during the Calaveras County Fair, thus earning the nickname 'Frogtown'. Gold in this region was processed by stamp mills and when they finally ceased operation it was said that the townspeople could not sleep, *the silence was too loud*!

South from Angel's Camp, Highway 49 winds through the foothills across the Stanislaus River, pass Tuttletown, making a detour to visit Columbia State Historical Park (where you can pan for gold or take a stage coach ride) before reaching Sonora [population 4903, elevation 1825']' county seat of Tuolumne. A few miles further is Jamestown, home of the Railtown 1897 State Historic Park, which started as the Sierra Mountain Railroad in 1897; with steam train excursions (trains featured in the original movie version of "Around the World in Eighty Days") through the countryside.

Leaving Jamestown, we head to Chinese Camp, once home to nearly 5,000 Chinese mine workers who could not find living arrangements elsewhere. In the mid-1850s it was the site of several Chinese "Tong" (protective associations) wars. Today it is virtual ghost town with just around 100 inhabitants. At the town of Moccasin, Highway 120 takes off on its journey to the Northern Entrance to Yosemite Valley, another adventure altogether. Highway 49 now enters its least travelled sector. After Coulterville, the rolling farm lands give way to rocky hills covered with scrub brush and very few trees. At the crossing of the Merced River (now the upper end of dam created Lake McClure) was the old town of Bagby (now under water for most of the year), a small town that was one of the stops of the Yosemite Valley Railroad that started in Merced and carried passenger into Yosemite Park. Image how great it would be it that railroad still existed today, properly modernized of course). It was in the one room school house in Bagby that my mother taught from fall 1939 through spring 1941as a condition of her government college loans.

Mariposa [population 2173, elevation 1949'], county seat of Mariposa County, is our next stop. It is the gateway to Yosemite Valley and another major mining town though today it is best known as a quick rest and shopping

stop from travelers going to the floor of Yosemite Valley. The famous mountain pathfinder and first U.S. Senator from California, John C. Fremont lived here and had extensive land grants, however due to a lack of law enforcement officials he could not protect all his holdings from the influx of gold seekers squatters. **Mariposa County Courthouse, built in 1954 and in use ever since, longest of any courthouses west of the Mississippi River (above).**

Highway 49 and begins a winding climb through Mormon Bar (a Mormon camping area in 1849-1851), Bootjack, and Usona to nearly 3000' at Nipinnawasee (means 'plenty of deer'), before descending through Ahwahnee to Oakhurst [population 2829, elevation 2274']. It is here Highway 49 end and also our journey.

This has been a drive through an area impacted by the great California Gold Rush of 1849. Although California is known for its major cities and large population centers, this area has remained quite under populated. Many of the major towns along this Highway have seen an increase in populations in recent years due to the construction of retirement communities, Indian Gambling Casinos, and the sudden growth of a new wine growing region. However the character has not changed, the historical districts of each of these towns remains entrenched in the feeling of the 1850s.

This is an area that begs to be driven slowly by older cars, (above **Highway 49 near Oakhurst in the springtime)** especially by small horsepower Rolls-Royces. The roads are good, there is so much scenery to enjoy and so many places perfect to pull over and enjoy a tailgate party.

Our 1937 25/30 Rolls-Royce (GGM24) attracts its share of attention at the Empire Mine near Grass Valley while on tour with the Northern California Region of the Classic Car Club of America

The R-R Brake Servo: Fear Not

Gary S. Phipps Albuquerque, NM, USA

The R-R brake servo was basically the same from its introduction on the 20HP cars until its last appearance on Silver Clouds in the 1960s. What changed more than the hardware were the instructions in the various handbooks and manuals about adjusting it. It only took me 12 years to understand that adjustment so I thought I might save some of you a few years by explaining the process. I will ignore all but the Goshawk variants.

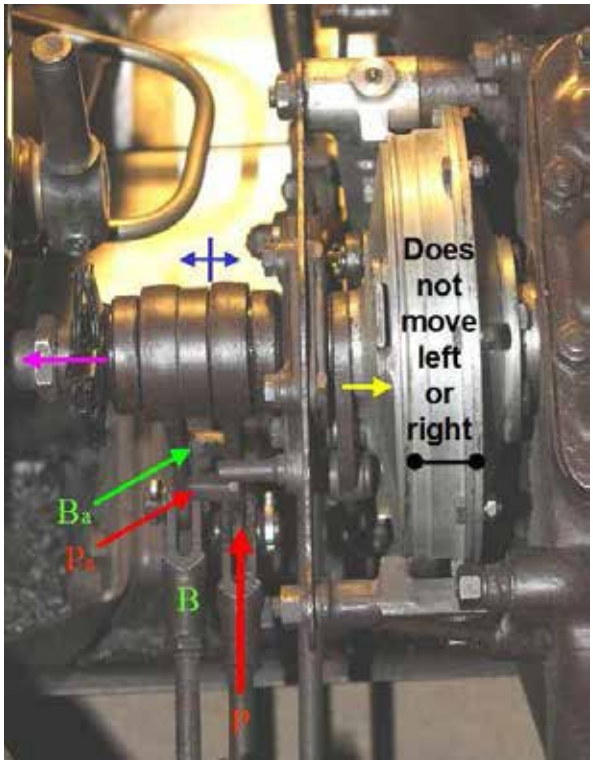
The Instruction Confusion

The adjuster for all Goshawk servos is a 1/2"-16 tpi, hex nut with 25 serrations on the back side which works with a matching washer with 25 similar serrations. All of the Goshawk instructions are to never adjust the nut either direction more than one serration, i.e. click, without testing the servo operation afterwards. Being so concerned about 1/25 of a turn (0.0025") implies a very finicky and difficult adjustment which we shall see is not particularly warranted. The 20 HP handbook instructions for adjustment are '*...pedal...depressed lightly...just short of moving lever A2...The pedal travel should then be not less than 1/4"...Another method...measuring the gap between levers A1 and A2. It should be possible to insert a .025" feeler gauge...when the servo is engaged lightly*." Lightly...just short of...not less than...insert a feeler where?? Those are not terribly definitive instructions. 6" pedal travel fits the 'not less than' wording but I doubt that would be considered acceptable.

For the 20/25 and 25/30 the instructions are the same except 1/4" became 1/2" and the alternate feeler gauge method was omitted. For the Wraith there was an even bigger change which hopefully does not reflect upon us Wraith owners! *"As the operation is of a delicate nature and requires specialised knowledge..."* i.e, R-R didn't think you should even try to adjust your own Wraith servo. That's quite a change in the instructions over a few years. The 1940s published, pre-war service instructions, TSD-2066, largely ignore the subject. They never tell you how to adjust or reline the servo although it is suggested that either might be needed for certain problems!?

When Ron Haynes was writing his Small H-P Brake book in the mid-70s he thought so little of those pre-war words that he described the process differently. "*...measure the axial movement of the drum when the brake pedal is depressed. The drum movement should be 1/32 in... Finally, check that the brake pedal has ½ in. free movement".* Because of various wear points in the brake linkages the 1/2" is still nebulous but it is assumed to mean something close to 1/2". But the 1/32" drum motion is a new goal giving better definition to the adjustment - or did it?

I had always tried to follow the Haynes method with WMB16 but was not all that pleased with the result. 1/32" of an inch seemed elusive and I always finished up wondering if I had set the servo too tight or too loose? The brakes did work fairly well so I didn't think much about it until the summer of 2011. As we returned from the Lake Tahoe national meet the last few stops before home became rather scary. Pedal effort was now enormous and did not produce much stopping power. Corrections were needed, but what? The brake drum linings at each wheel were not worn or oily and all were in good adjustment so the problem had to be servo related. I then suspected oily servo linings but disassembly proved that to be untrue. Glazed linings? Once again, no. *The problem was strictly servo adjustment and my lack of an understanding how to do it.*



How Does it Work?

Figure 1 shows the WMB16 servo motor and linkages. Front brakes on a Goshawk era motorcar are actuated only by the servo, not by any pedal, so for the present adjustment discussion we will ignore the front brakes. (They are very important for good stopping power, but once the servo adjustment is correct, the servo will take care of them on its own.) When the foot brake pedal is depressed, rod 'P' is pushed forward and rotates its near vertical lever about the main (horizontal) servo shaft. Just to the left of P, the similar rod and lever 'B' are connected to the rear axle brakes. The eventual goal is to push or pull rod B forward to apply those brakes.

There is no direct connection between P and B except for three 5/16" diameter steel balls that roll on hidden ramps between, and inside, the base diameters of levers P and B. Relative rotation between the levers moves those balls up their ramps and could, ultimately, without other limitations, separate the levers sideways by 5/16". As P moves forward, B initially does not rotate but levers P and B are pushed apart from each other as indicated by the dark blue arrows. Only if the servo is horribly out of adjustment will the side arm on lever P, marked as "Pa", eventually touch the similar arm on lever B, marked as "Ba". That arm contact will then push lever B forward to apply the rear brakes. Hopefully you will never need to use that fail-safe, brake actuation method.

As levers P and B are moved sideways, increasing friction inside the servo should eventually couple the rotating gearbox shaft to the servo body which will pull lever B forward as well as move hardware for the front brakes. Our goal is to adjust the servo so that the servo body rotation happens well before arm Pa touches arm Ba. The movement of the servo drum that Haynes wanted us to measure is illustrated by the bright yellow arrow pointing to the right. The servo drum motion at that point is easy to detect since it is relative to the stationary servo body. The adjusting nut that controls all of this is on the far left end of the servo shaft behind the (not yet explained) purple arrow. The problem I had earlier was that yellow-arrow movement of the servo drum barely changed as the adjusting nut was rotated: I could never measure a 1/32" motion. Cowering from repeated warnings about getting the servo 'too tight' I would eventually give up and declare my servo 'adjusted'. Unfortunately, it had never been correct for my first 12 years of ownership.

At least for a Wraith the problem was and is that total clearance inside the servo is not always measured simply as yellow-arrow motion to the right. At the same time the servo shaft may be moving the hidden internal parts of the servo to the LEFT - the purple arrow. In order to know when the internal clearance of the servo is 1/32" you need to compare the RELATIVE motion of the two servo sides: a combination of yellow- and purple-arrow movements. There may be some difference in a Wraith servo that makes this more of a problem than with earlier models. For any model, be aware of both potential motions and take both into considerations when you measure.

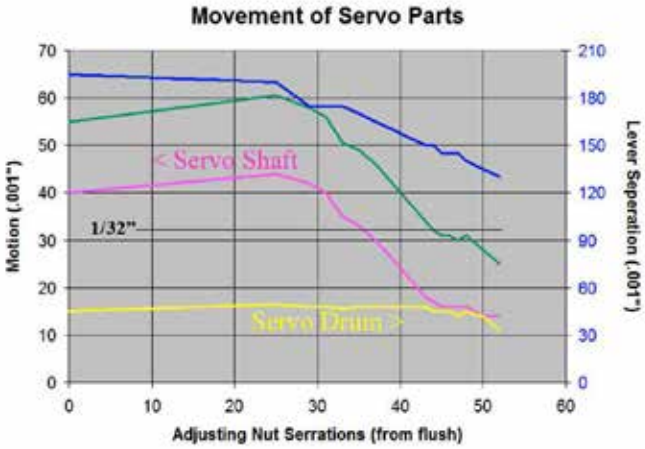
The Solution

Figure 2 shows the method that I used to quantify the problem. A couple of machinist's dial indicators mounted on magnetic bases were appropriately attached to measure the yellow (top indicator) and purple (bottom indicator) arrow movements. Since the purple indicator is face-down, a small mirror was needed to see its dial. Readings from both dial indicators were recorded for each click setting of the adjuster nut while normal braking pressure was applied to the foot pedal. The Wraith adjuster nut flush with the left end of the servo shaft was the adjustment zero reference. Figure 3 is a plot of the collected data.

The yellow line is the yellow-arrow motion to the right when the brake pedal is firmly depressed. The motion is nearly unchanged at around 1/64" no matter what nut adjustment is made. It is easy to see why I could never find 1/32" servo drum motion. The purple line is the purple-arrow motion to the left for the same pedal depression. The internal shaft does most of the moving, not the outer servo drum! The green line is the sum of left + right motion or total internal clearance in the servo. Notice that a total, internal clearance of 1/32" is achieved at 44 nut clicks from flush.

The topmost line plotted in blue is the maximum, left-right separation between lever arms P and B for each adjuster setting. Emergency braking arms Pa and Ba touch when the separation between P and B reaches 0.19". At the Haynes-correct, 44-click adjustment the P-B separation distance will never go above 0.15", brakes front and rear will be applied and Pa will never touch Ba. The minimum lever separation of 0.15" is almost exactly 1/2 of the diameter of the 3 balls used to force the separation. The nominal, operational point for the servo is with the separating balls positioned in the center of their respective ramps.

By driving the car afterwards we learned that the servo quits working at 16 clicks from flush where the total internal clearance is nearly 1/16". That means there is a 44 - 17 = 27 click range over which the servo will operate and still have a clearance of 1/32" or greater - not 'too tight' as defined by Haynes and many other later authors. The warnings to be cautious and measure servo operation after each single click of the adjustment nut seems to be totally out of line with the fact that the servo operating range is more than a complete turn (25 clicks) on that same nut. With this newfound information I set the adjuster nut conservatively at 31 clicks to intentionally bias the operating point near the center of that full turn. I was still somewhat hesitant to tighten the servo all the way to 1/32". Excellent brake service for the last year has confirmed that the adjustment is not 'too tight' and an even tighter 44 clicks should be fine. With anything in the range of 31 to 44 clicks small wear to the servo linings over the next decade should make essentially no difference in brake function.



The Results

With no changes at all except my new servo adjustment, the brakes are now much better than they EVER had been previously. Since the prior brake function had been marginal, it is obvious (to me) that I had originally set the adjustment barely within the working range near 16 clicks. Being super cautious about the setting I had nearly killed myself when the servo adjustment changed by a click or two. Don't be afraid of it! Check out your servo and its adjustment more carefully. Measure its usable operating range as I did and you may find the servo adjustment is not as good as you thought it was nor as good as it should be.

Old Wraith's Big Day

The phone rang one morning….always a good sign because it reminds us that we remembered to pay the phone bill! Was it a member wanting mechanical help from a mediocre mechanic…Bill Gates calling to give me a stock tip…a barrister calling to tell me that a distant relative has left me millions……no, it was the Rolls-Royce dealer in Vancouver, British Columbia, Canada. He was debuting the new Wraith and wanted an original Wraith to be part of the Gala. Mine was the only one he could find in the Pacific Northwest….who would have thought? The dealer wanted our car and would pay all expenses if we would drive the car up to Vancouver….about a day's drive from our farm….lodging, meals, petrol, etc. A very nice offer. We made a call to our house sitter….she was not available on the dates of the Gala…rats!!

Undeterred, we made some other calls…no one was available on the needed dates. We let the dealer know of our dilemma. He queried: would we be agreeable to him coming to fetch the car & bring it to Vancouver?? We agreed. There next followed a few days of frenzied calls from shippers, custom people and a company the dealer retained to make the transport happen. It was finally decided to send a truck down from Vancouver to pick up Old Wraith. This huge truck with two level parking arrived at our farm….but could not fit between our brick gate posts….the gate was built 100+ years ago & not made for the huge trucks of today. What to do?? We found a shopping center in Olympia, WA with a large parking area and followed the truck there. On the top level there were two new Wraiths….and Old Wraith

was to fit behind them! How was he to get up there? Well, I was to drive on the loading ramp and be "elevated" to the top level…then drive up behind roughly $1,000,000 of new Rolls-Royces….not for the faint of heart!!What I did not realize was that the truck was parked on a bit of an incline. I drove on the ramp and the driver started the ascent….and Old Wraith started to roll back off the ramp! I hit the brakes…they did not seem to stop the car immediately. I pulled the emergency brake…and stopped the car about 3" from going off the ramp. Yes, you could say I was a bit nervous! I turned off the ignition & we pushed the car to within a few inches of the new Wraith. With Old Wraith loaded, I did breathe a "sigh of relief"!

Even though we were not able to attend the Gala, some Vancouver members sent us pictures. One woman, dressed as the Spirit of Ecstasy dropped from the ceiling while

another, dressed in feathers to portray "Wraith", circulated among the revelers. By all accounts, it was an event not to miss. Following the Soiree, Old Wraith was loaded up for the return to our farm. When unloading him, I did place some planks on the back edge of the ramp….just to be safe….if only in my mind! I could tell Old Wraith was excited about his adventure…but he just could not put it into words……