



The

GOSHAWK



Flier



RROC GOSHAWK SOCIETY
SERVING THE SMALL HP COMMUNITY

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The Goshawk Society

This is the third issue of the Society's newsletter, which is published electronically. Previous issues were Fall 2009 and Spring 2010. Members wished this and future issues to be conventionally sequenced in Volume and Number format, together with the time of year. As this is the second year (Vol 2) and second issue of that year (No 2), this issue is Vol 2 No 2, Winter 2010.

The Society is an affiliate of the Rolls-Royce Owners' Club, and addresses the interests of enthusiasts and owners of the prewar R-R Small Horsepower cars. These are the Twenty, 20/25, 25/30, and Wraith, which were built from 1922 to 1939.

Officers, elected in October 2009, are:

Chair	Tim Jayne
Secretary	vacant (Lynn Coombs resigned)
Treasurer	Gary Phipps
Editor	Phil Birkeland
Technical Director	Wally Donoghue

Upcoming Spring 2011 Phantom I Tour *See page 16*

Upcoming National 2011 RROC Annual Meet August 12-18 Lake Tahoe
See Page 2



1936-37 James Young 25/30 Saloon with Divider - Phil Brooks

FROM THE CHAIR'S CHAIR

By Tim Jayne, Kirkwood PA, Chair, Goshawk Society

2010 National Meet, Toronto

The Rolls-Royce Owners' Club 2010 national meet was a great time for those who attended. The weather cooperated, friends were able to reunite, and of course the most important part- the cars- was enjoyed by all. On the judging field only 2 Small Horsepower cars arrived, although there were more than these at the meet.



The Russell Jones family ready to accept their 2nd in Touring for a nice 25/30.

The Goshawk Society met for two memorable occasions. The first was a luncheon at the Blacksmith's Bistro in the historic district of Unionville. The scrumptious meal was a real delight! A great big thanks to Henry Popp for making the arrangements for a fabulous place.



Lunch at Blacksmith's Bistro

The next gathering was a technical/business meeting where the members discussed a

variety of topics, ranging from parts suppliers to repairing the Smith's electric petrol gauge to shared stories about cars owned by fellow members

2011 National Meet, Lake Tahoe

So what's on the books for the next national meet, August 12-19? We will have another luncheon, technical session, and hopefully a better showing of Small Horsepower cars. So get ready, sign-up, and get your car there so it can be enjoyed by all! Sign-up with a caravan so you have company driving there.

Goshawk Society Website

Our Society has its own website. <http://www.goshawksociety.com/> See what it is all about! You will see a page for news where you can find out what is coming up for future events. Also there is a Members Only area that has technical files, a forum, and more restricted information. The site is a work in progress and will be developed further as time permits. If you wish to have access to the Member's Only area, contact me at tim@dennisonjaynemotors.com to be included on the roster.

Logo for Hub-Wrench Mallet

Steve Sherrif, of Mississauga ON, has written me regarding his moulded-rubber reproduction of the Spencer Moulton Ltd logo. This logo was originally on the end of the 25/30 (and possibly others) hub-wrench mallet. Logos on most mallets have been obliterated by use. Cost is USD 28.00 (his cost), for which he will mail you the logo and a copy of the Spencer Moulton Ltd history. You can contact Steve at 2206 Fifth Line West, Mississauga ON, L5K 1V5, Canada, or telephone him at 905.822.7396 (h). The usual disclaimer applies.

THE LOOSE SCREW

By Wally Donoghue, Technical Director, Goshawk Society



BAD GAS AND VAPOR LOCK

What has prompted this article was an experience I had with vapor lock when returning from a Classic Car Tour in Columbiana County Ohio in our 1931 Lincoln in October. Although this is not a Rolls-Royce, my experience and this article will apply to all Pre-War Rolls Royce cars and, indeed, to all older collector cars.

We had been driving several days, trouble free, with no vapor lock problems on the tour. Long ago I had added an auxiliary electric fuel pump to boost pressure in the event vapor lock should occur, which it often does on hot days with modern fuels and just the mechanical fuel pump. This always did the trick. On the return trip home, when the fuel level reached about 1/4 we spotted a gas station with the price about 10 cents lower than the going rate in the area. Although it was a shabby run down station, with a Porta Potty outside and no restrooms inside, I had no misgivings and filled it up being pleased at finding gas at a bargain price. Within 15 miles the car

started to vapor lock and I switched on the electric fuel pump. However, the missing and backfiring of the engine got worse and we pulled into the first filling station we came to.

Upon opening the hood, I found I could actually hear the gas boiling in the carburetor and gas and vapor was sputtering out of the idle air bleed holes on the top of the carburetor. (These external air bleed holes are not common to most carburetors but are a feature of the Stromberg DD-3 carburetor) This was obviously some gas with a very low boiling point and high vapor pressure. With more hope than common sense I let the car cool and propped open the shutters hoping this would result in a lower under hood temperature. Unfortunately, the problem repeated itself. Against common sense I tried 3 more times to nurse the car home and finally, when it started to get dark, gave up and decided to have it flat bedded home.

I became curious about the gas and decided to run a little test. I siphoned it all out, about 20 gallons, into 5-gallon gas containers. I still had about 10 gallons of gas on hand that we use in our lawnmowers and decided to compare the boiling point between the two. So, outside with a hot plate, kitchen pot and meat thermometer I put the bad gas in the pot and watched the temperature as it heated up. It started to bubble at about 90 deg. F., much lower than I anticipated. I thought the temperature would stabilize as it reached a full boil just as water does at 212 deg. But it did not. The temperature kept rising as the gas boiled and the level dropped. I stopped the test when it reached 130 deg and by this point the level was about 2/3rds of what it was when I started and it occurred in a very short period of time.

The Loose Screw, Continued

It suddenly occurred to me that gas does not behave the same as water as it boils. Water is pure H₂O and thus remains the same as it boils off. I realized that gas, being made of many components, including ethanol, in many fractions, would not behave the same as water. The more volatile fractions would boil off first leaving less volatile components which would result in a higher boiling temperature. So, knowing this, I decided to repeat the test and record the temperature at just the point where bubbling first occurred. With a fresh batch of the gas from the Lincoln I repeated the test and noted the same 90 deg temperature. Then I performed the test with the gas I had stored for lawn mowers. It did not start to bubble until it reached 120 deg. This meant that there was a 30-degree difference between the bad gas that was causing the vapor lock problem and good gas. I have no idea why this gas had a lower initial boiling point and such a great difference at that. Perhaps some E-85 got mixed in or just more ethanol was added.

It should be pointed out that the temperatures of 90 deg and 120 deg are not the actual boiling temperatures of the fuels. It was the temperature measured in the middle of the fuel when bubbles just started to rise from the bottom of the pan. The temperature on the surface of the pan bottom is higher than the temperature of the fuel in the pan. We have all noticed when boiling a pan of water that bubbles start to rise from the bottom well before the water actually boils. So these temperatures are valid only for the purpose of comparison of the boiling point between the bad and good fuels. Because the more volatile fractions continue to bubble off it was impossible to measure the actual boiling point with my crude setup, but it was sufficient to determine that there was a significant difference between the good and bad gas.

What has happened in general with all gasoline today is that over the years the vapor pressure has gradually and steadily increased. This has had little effect on newer cars, which operate at higher fuel pump pressures. But with all older cars, including pre-war Rolls-Royce and Bentleys this increase in vapor pressure can cause a vapor lock problem at higher temperatures. Most owners of all cars built before the war have added supplementary electric fuel pumps that produce higher fuel pump pressures. And even with these higher-pressure fuel pumps some owners still experience vapor lock when driving hard at high outside temperatures.

I started collecting antique cars in 1952 while a junior in high school with the purchase of a 1920 Model T and purchased my first classic in 1954, a 1929 Packard (for \$75.00) while a sophomore in college. With the gas available then vapor lock just did not occur. I purchased my Phantom III in 1958 driving it to Pittsburg from Newport News, VA, without a hint of vapor lock. On up to the early 1970s I never experienced vapor lock on any old car and none had an auxiliary fuel pump and most owners I knew up to then did not have them and did not experience vapor lock.

However, by the mid 1970s the fuel had worsened and many owners of prewar cars were starting to have vapor lock problems in hot weather and started adding auxiliary electric fuel pumps. The trend is continuing to worsen today, with vapor pressures increasing and more ethanol being added.

At this point in time I recommend owners install an auxiliary fuel pump. These should be located towards the rear of the car, close to the fuel tank. On cars such as 25/30 and Wraith, which have electric fuel pumps, no modification is necessary to the fuel pump

The Loose Screw, Continued

and the gas will just be pumped through the existing pump. On earlier cars with vacuum tanks the fuel can be pumped through the vacuum tank but the insides of the tank should be removed and the vents plugged. The pump should be connected to a switch, which can be mounted under the dash so it can be turned on only when needed. Some fuel pumps are gear type and have to be running all the time. Fuel cannot be drawn through them when off. Also, these types of pumps tend to draw more current than impulse type pumps such as the SU. So these should not be used.

There are a number of suitable impulse type pumps, some which produce pressures up to 8 psi. In most cases the higher pump pressure will not affect the carburetor, other than it is possible that the float level will be very slightly higher, and if so it can simply be adjusted lower. Note however that if the

carburetor float valve leaks, fuel will overflow, creating a fire hazard.

On earlier cars with vacuum tanks, the fuel can be pumped through the vacuum tank to the carburetor float valve, but the insides of the tank must be removed and the vents plugged. The pump must put out just enough pressure to raise the fuel above the height of the vacuum tank, but not so much as to overpower the carburetor float valve. The pump should be wired to run whenever the ignition is on.

The trend in gasoline has been getting worse and no one knows what the future holds. But I think it is good insurance to install an auxiliary pump now if you have not already done so. My final recommendation is to only buy fuel from major brand stations, and, where possible, avoid gas with ethanol added.

THE SHORT STORY OF 9G III/GSL 82

A GOSHAWK "INDIA" FACTORY EXPERIMENTAL CAR

By Harry Tucci, Harmaleah Farm PA, Goshawk Society

This is a well-documented and historically significant car.



Goshawk was the code name given to the 20 HP experimental cars. Goshawk "India" refers to those cars with four-wheel braking systems.



This aerial shows the light touring body that Sir Henry preferred for the relatively low-powered early Twenties.



The previous photo shows 9G III/GXL 82 at the RROC 2008 Williamsburg Annual Meet. Note the short radiator typical of Twenties. The headlamps have no dipping feature. The car's build sheet shows that horizontal radiator shutters were furnished when the car left the factory. However, they have been missing for years. I have been unable to find a set that fits the car. This is not as simple as it sounds. All four of the radiators I have are of different horizontal and vertical dimensions. Early Twenties seem to be almost one-offs, as even the frame rail spacing varies! However, if you do know of a set of shutters, please let me know. Contact information is at the end of this article.



This photo shows the beautifully restored instrument panel and toe-board. Along with four-wheel brakes, this car has the gear shift lever on the right, not the center shifter of the very earliest two-wheel brake Twenties.



The Short Story of 9G III/GXL 82, Continued

A necessity for all early cars was a complete tool kit. The above photo shows the small tool tray, fitted under the front seat.



Here are some of the large tools. Note the valve spring compressor, much different from later versions.

A significant part of the car's history as a factory experimental test bed exists.

The 9G III chassis was built in 1925 as part of the Rolls-Royce experimental program. It was fitted with a tourer body by Windover on the 23rd of May 1925 with registration number CH 4995. It was painted gray with black wings. I believe this may be the color scheme for the experimental cars of that era. The car weighed 31 cwts, 0 qtrs, 14 lbs (an Imperial hundredweight is 112 lb, so the car weighed about 3,500 lb).

It was sent to West Wittering in 1925, where Sir Henry drove it for two years. During this period, it was used to conduct various tests of component parts. In 1927, it was refitted and sent to France for endurance testing.

In 1928, the car was returned to the plant and prepared for sale as a used car. At this time, the chassis was re-numbered GXL 82. The engine number was G 1575. The car was re-registered as GU

3262, and began its long journey to be here today.

The photo below shows the car when my son, Allen Tucci, and I first visited the car in Wales.



Returning to the early history of the car, 9 G III was sent in 1925 to West Wittering, in Sussex, Sir Henry Royce's home. It replaced 8G III, since it had more modern features, including hydraulic dampers at the front and rear, the latest type steering with automatic pendulum lever, a modified front axle (stiffened type) with plain bushes top and bottom pivots, loose bushes in the connecting rod, steel shells to the main bearings, 'Mechanics' joints on the propeller shaft, semi-balloon tyres on well-base rims, higher compression pistons with 5.2:1 ratio instead of the earlier 4.75:1, modified exhaust manifold and silencer with cut-out, Ferrodo brake lining material with non-squeaking properties, and a modified carburetor with an aluminium air valve.

In 1927 the car was reconfigured for a 10,000-mile endurance test in France. The test was very successful, and resulted in a number of features on the car being standardized for production, including a new thrust bearing for the rear axle bevel pinion.

The Short Story of 9G III/GXL 82, Continued

Since the earlier experimental car 8G III was known to be frequently driven by Sir Henry Royce, and since 9G III replaced it, it is surely reasonable to

assume that he drove 9G III as well. Further historical notes found in the car's folder at Hunt House (RREC HQ) show:

- Late June 1925, a reference to Lord Herbert Scott (I'm not sure what this means).
- 1st September 1926, "...The cut-out return spring on 9 G III now at WW is too strong, having bent the valve operating lever..."
- 9th November 1926, "...9 G III has run 14,215 miles with the propshaft fitted with the American 'Mechanics' joint. This on examination showed no wear and required no attention during this mileage. It is smaller, simpler, and cheaper and does not require periodic lubrication..."
- 15th March 1927, "...Car fitted with an auto-switch to prevent overcharging of battery..."
- 18th October 1927, "...Being used for the development of a more powerful 20 h.p. chassis (high compression)..." (this turned out to be the future 20/25 h.p. engine).
- 14th November 1927, "...'Hs' (Hives) reports: 'We are instructed to prepare a 20 h.p. for 10,000 miles test in France before release of material for 20 h.p. production batch. We propose using 9 G III with the following features: (1) Improved steering geometry, (2) Battery ignition with scrubbing contacts, (3) Modified starter clutch, (4) Modified gearbox to give improved ground clearance, (6) Modified undershield, (7) Spring loaded front end side steering tube.'"



9G III in France for endurance testing (photo from Walker "Rolls-Royce Twenty HP, 20/25. 25/30, and Wraith")

At the beginning of 1929, the car was prepared for sale, and the chassis renumbered GXL 82. Engine G 1575, taken from Rowntree's car (GOK 21), was fitted, and the car re-registered GU

3262. This is the car that you see today with the same chassis and engine. The car was originally painted blue with black wings, and had black leather upholstery. The original build sheets indicate that many of its experimental parts were removed and renumbered GXL 82. These sheets also include a number of notes, among which are "Ignition control Rods not standard...", "...This axle (front) is fitted with special pivots & pins to DRG #G52834..."

GXL 82 was delivered to Lillie Hall in February 1929, and sold as "second-hand" on 17 April 1929 to George Rollason, Esq., 4 The Grange, Wimbledon Common, London, S.W.19.

The Short Story of 9G III/GXL 82, Continued

GXL 82's subsequent ownership chronology is as follows.

- 20 August 1929, Capt. A. S. Wills, Thornby Hall, Northampton.
- 20 July, 1931, Rolls-Royce Ltd.
- 31 May, 1946, W. R. C. Hamlin, Esq, Shortlands House, Kent
- Date Unknown, Ed Jurist, "The Vintage Car Store", Nyack, New York, USA
- October 1961 R. G. Mullen, Sheffield, Alabama, USA. He states in the FL pg. 546 that "the engine was overhauled by London specialists in 1958, ...needs paint."
- 1966-197?, Nicola G. Petroff, Elyria, Ohio, USA. There is a photograph of GXL 82 in the FL pg. 860 (Jan 1966) showing what looks like the original color scheme i.e. blue body, black wings with black leather upholstery and black top. He states in the FL pg. 1266 "...Engine rebuilt....frame, body, upholstery, brightwork, wheels, instruments, and woodwork restored..." This is when the color scheme was changed to the light green body and wings, with light green upholstery.
- 1979, R. Harnett of USA, as noted in John M. Fasal's book "The Rolls-Royce Twenty" pg.508.
- 19??, Thomas Caughlin, Ltd, Mystic, CN
- July, 1981 to 2002, Kenneth R. Nimon, Gowanda, New York, USA. According to Nic Petroff, Ken had the wings painted forest green.
- - October 2005, Harry J. Tucci, Harmaleah Farm, Spring City, PA, USA

Note: Much of this detailed information was taken from Ian W. Rimmer's "Rolls-Royce and Bentley Experimental Cars", John M. Fasal's "The Rolls-Royce Twenty", and Will Morrison's Report on 9GIII/GXL82

I have enjoyed this car greatly. It not only occupies a premium spot in my garage, but is also depicted on the weathervane over the garage.

If anyone reading this has any additional information about this car, or if you know where a set of horizontal radiator shutters can be found, I would greatly appreciate hearing from you. You can email me at hjtucci@hotmail.com.

1936-37 25/30 JAMES YOUNG SALOON, GWN20
“BROMLEY” DESIGN WITH PARTITION
By Phil Brooks, Williamsburg VA, Goshawk Society



London dealers Pass and Joyce sold a series of Rolls-Royces with bodies designed exclusively for them by James Young under the name “Bromley,” GWN20 being one of seven such “saloon with partition” bodies built on the 25/30 chassis.

“Bromley” was a sales name used by James Young for this line of car bodies for Pass and Joyce, referring to the “Bromley Brougham” carriage design with which James Young had made their reputation in the mid-1800s. Under this name, James Young built saloons, sports limousines, and dropheads on Rolls-Royce and Bentley chassis for Pass and Joyce.

Mr. Wenham, James Young’s managing director and chief designer before MacNeill came to James Young in 1937 as chief designer, evidently designed the bodies. Mr. Wenham also created the James Young parallel-opening door design.

GWN20 is a close-coupled sports limousine seating five passengers. Her original exterior was all black, with the interior being tan leather and carpeting, a beige sheepskin rear floor covering, and beige/grey headliner.



She has picnic tables to the rear, their exteriors being leather covered. Other rear accoutrements include lighted companion mirrors, two ceiling lights, a cigarette lighter and ashtrays, and an 8-day Waltham clock.

1936/37 25/30 James Young Saloon, GWN20, Continued



She has a built-in boot, with a fold-down boot lid that is useful for picnics and with a dust flap to cover the boot area when the lid is folded flat. Her small tools are still in the tool compartment in her boot lid.



In common with 25/30's and Wraiths, GWN20 has a selector switch on the dash to independently test the two electric fuel pumps, "A" and "B" (see following photo, upper left).



Her headliner, leather (other than the front seats), and wood trim are still

original, and we think her black paint is original also.

GWN20 was sold to Francis Hamilton Benn, of 20 The Boltons, London, S.W. 10, on 8 April 1937, as a birthday present to himself, replacing a series of family Daimlers. Mrs. Benn was Buffalo Bill Cody's granddaughter, interestingly. Mr. Benn, managing director of an international paper company, was chauffeured to his London office in this car. The family also used the car for trips abroad and for weekend journeys to their country home in Pulborough, W. Sussex. GWN20 was kept up on blocks at their Pulborough home during World War II, just a few miles from where our 4-1/4 Bentley, B196HK, was similarly up on blocks at Parham Park. The car was recommissioned after the War.

Mr. and Mrs. Benn downsized about 1938, moving from their large house in The Boltons to the Grosvenor House Hotel, with GWN20 being kept in a garage in Adam and Eve Mews in Kensington. Mr. Benn died in 1951, and his son Anthony sold GWN20 at that time in settling the estate. The car went to her second owner, who had her in London during the 1950s and who fitted a radio and heater to her.

In 1960 Tom Donoho went on the RROC tour to England that was run by John and Pat Utz, and was determined to find a car with John's help. The first car he looked at was GWN20, and after looking at other cars all over England he bought this one. He became the car's third owner. Tom brought the car over to his home in Owings Mills, MD, and repainted her sides in yellow to lighten up the look of the car. He also did some

1936/37 25/30 James Young Saloon, GWN20, Continued

rewiring. During the 1960s Tom won Small HP class awards four times at RROC National and Inter-Regional meets. About 1971 Tom and Lee Haacker began rebuilding the engine, number S28M, but their efforts got sidetracked; the car sat idle in Tom's barn, with the engine half-disassembled, until Tom's death in 1987.

We had known GWN20 since 1966, when we fell in love with her at the first car meet we attended after moving back to Washington, D.C. We bought GWN20 from Tom's estate in 1987, becoming the car's fourth owners. We preserved the car carefully, finished the rewiring, and had her engine rebuilt. Driving her to Ottawa with about 200 miles on the rebuilt engine, we won second in Touring at the 1992 Ottawa meet. We won second in Touring again at the 1993 Asheville meet. In 2008 we won the Preservation Award at the Williamsburg meet.



We continue with the preservation efforts. So far we've replaced the front seat leather that has ripped and the carpeting, which mice had eaten. All our other efforts have been conservation and preservation rather than restoration. Here is a photo of the new carpet and the new leather on the front seats.



While researching the history of GWN20 after we purchased her, we became friends of Anthony Benn, who had sold the car after his father's death in 1951. Anthony used to come over to the States annually, as the family were partners in a timber lands company in Alabama, and he used to visit us. On one of his visits, we had a wonderful day touring Washington and the National Cathedral in GWN20. In turn, we often visited Anthony and his family in Chichester.

Anthony loved GWN20 and helped us in conservation efforts with his remembrances of the car. He also joined us in advising Neal Kirkham on what would be the correct liquors to use in restocking the front seat bar that Neal had recreated for 9JS, "The Yellow Rolls-Royce," when restoring her. Having been a young Oxford graduate in the 1930s, Anthony remembered those drinks only too well! Anthony died in 2008, just before his 96th birthday. He was a distinguished World War II veteran, a very dear friend, and a wonderful gentleman.

GWN20 continues to motor very well, and in a most distinguished manner, today. Every bit the lady, she drew her usual compliment of admiring stares when we went for a run just yesterday!

COOLING SYSTEM CLEANING

By Gary Phipps, Albuquerque NM, Treasurer, Goshawk Society

Our Goshawk cooling systems are now 70 to 90 years old and well used. It doesn't help that pre-war drivers were not avid anti-freeze users; our handbooks give instructions to drain the cooling system in freezing weather and use hot water to re-fill the radiator/thaw out the water pump. Quaint. But that means nearly every day the wet metal of the drained cooling system was exposed to a fresh batch of oxygen with no protective inhibitors. One couldn't write a better recipe for rust and corrosion; it's little wonder that many are now packed tight with huge amounts of rust and scale. Hopefully yours has been thoroughly rodded out and is generally free of obstructions. But there is still a need to 'flush' the cooling system occasionally. The question is: Flush it with what?

I have used flush options from the local store shelves. Unfortunately, none of them ever really seemed to do much of anything, but they weren't all that expensive, and I had made an effort. I was always afraid to try the aggressive cleaner/neutralizer methods for fear that incomplete neutralization might do more harm than good. That is until I discovered what seems to be an ideal method, which I now use for all my cars.

A Mercedes Benz Club of America technical guru introduced me to the Mercedes-Benz (M-B) method of cooling system cleaning. It is not generally recommended, unless it is needed, but their cars can be as old, or older than ours, and eventually any cooling system will be 'in need'. Their contemporary systems contained cast iron, steel, brass, copper, solder, aluminum and more recently, plastics, much like our R-R/Bs. For cooling systems, their recommendations do not vary between ancient and new: they have one corrosion-inhibiting coolant and one method of

cleaning deemed safe for all system materials, including aluminum radiators. Ignoring the historical national rivalries it seemed that whatever was good for an old German car should also work well for an old English one.

This is a 2-step, 2-chemical process, both of which are fairly benign, but effective: first de-oiling, then de-scale/de-rust. If desired, either step can be used independently. There are specific M-B part numbers for the chemicals but there are also generic equivalents that may, or may not be more readily available to you. They are certainly cheaper. You should be able to buy the M-B materials over the dealer parts counter. Unfortunately, all M-B dealers do not use their corporate specified cleaners, although they should be able to order them for you. Sources for generic materials follow below.

The first step, deoiling, uses disodium trioxosilicate pentahydrate as a detergent. This is also known as sodium metasilicate pentahydrate. For a 500 gram bottle, its M-B part # is 001 986 21 71. The M-B specified concentration is 50 grams/liter or 6.66 ounces/gallon (US). In typically terse fashion, the factory instructions say: Fill system with solution, warm engine to operating temperature, run for about 5 minutes, and thoroughly flush with clear water until the water which flows out no longer foams.

MSDS (Materials Safety Data Sheet) sleuthing tells us that Red Devil TSP-90 Heavy Duty Cleaner, intended for cleaning walls prior to painting, is 100% the same chemical and retails for \$5/pound. See http://www.reddevil.com/index.php?main_page=index&cPath=88_96_97. It is also available in the paint department of many, but not all, Ace Hardware stores, Amazon.com, etc. It will be described by the contradictory marketing phrase

Cooling System Cleaning, Continued

“phosphate-free Tri-Sodium Phosphate”. M-B owners in a hurry, myself included, have been known to use a cup of automatic dishwasher soap powder when the other chemicals are not locally stocked. Since the purpose is to remove oil, the low-sudsing dishwasher detergent or the intended wall-cleaner are likely equally effective.

The second step, descale/derust (acid cleaning), uses M-B # 000 989 10 25 (again 500 grams). It is meant as a scale remover, but it is also a very effective rust remover. M-B specifies 100 grams/liter or 13.32 ounces/gallon (US), which may mean 3 or 4 of those \$15 M-B bottles for a Goshawk system. This ‘exotic’ cleaner is nothing more than pure, crystalline citric acid. Citric acid, or one of its relatives is an ingredient in many of the parts store flushes, but at nowhere near the concentration that you want.

Example: Prestone Super Flush® typically comes in a 22 oz bottle which is 90% water. The remainder is roughly 2 ounces of sodium citrate intended to ‘flush’ a 12-quart system. For the same 12 quart system, the M-B method uses 2-1/2 **POUNDS** of citric acid.

What you want as the generic equivalent of the M-B cleaner is crystalline citric acid. It is commonly used in making cheese, home brewed beer and as a pH adjusting chemical for hydroponic plant growers (some of whom may not wish to divulge what it is they grow).

If you can’t find citric acid locally, it is easy to find online, for roughly \$3/pound. None of us have any connection to the following sources although both have ‘delivered the goods’ to fellow Goshawks:

<http://www.soapgoods.com/Citric-Acid-p-557.html>

<http://www.ahlgrows.com/phtesters.html>

Citric acid is not hazardous. It is the white crystals that covered the sour candies of our youth. There are no known disposal restrictions, although I wouldn’t let the first, full strength discharge into the gutter - just in case. And most important of all, it is not highly aggressive and likely to eat a hole in some expensive part of your car. Splatters don’t bother sound paint or anything else that I have found. No neutralizers are needed; simply slosh as desired and flush with plain water.

Being cautious, I first used citric acid to clean small nuts and bolts on top of the kitchen stove. At room temperature it works slowly and would take days to make much progress. This is another good point; there is no hurry after you add it to your radiator. Like most chemicals, as the temperature goes up, the reaction rate increases.

I like to use it near 190 degrees F, which is about the temperature inside a modern cooling system. The Calorstats in our Goshawks open a bit sooner, about 160-170 degrees F, which is still ok. At these temperatures the rusty parts bubble in the acid as the rust is removed; a clean bolt no longer bubbles. Although not intended as a loose paint and dirt remover, citric acid does a decent job of both.

The solution eventually becomes opaque with all the removed junk even though it will still be working. Using a pair of tongs I fish about in the solution every few minutes to assess progress. A bolt with light to medium rust will take from 5 minutes to an hour to be completely rust free with no apparent damage to the head markings or surface finish. If hours at 190F are

required, the bolt will start to lose some of its surface detail. Even clean bolts will eventually start to degrade in the hot acid, but from experience that will take much more than an hour.

Cooling System Cleaning, Continued

As an example of what will happen inside your block and radiator, following are before and after photos of a rusty hood hinge from a '66 V8 Ford Mustang, after about an hour in the hot acid cleaning solution



This is the before.

A black coating forms on steel after long exposure to the hot acid. Where visible and accessible, the coating can be easily removed with water and a small wire wheel.



This is the after. The sheen you see is from a protective clear coat.

Omitting several model-specific instructions to prevent acid being trapped in nooks and crannies, the M-B acid procedure reads: Rinse system of coolant, drain system (both already done if detergent step was

performed), dissolve acid in water, pour in, fill system with water, run engine at 2,500 RPM for 15 minutes, drain, and flush with water. A pound of the acid easily dissolves in a half gallon of warm tap water. Instead of a high idle, I go for a leisurely drive. After 15-30 minutes at normal operating temperature, I park the car and start flushing with clean water.

Although the final detergent flush water from the V8 Mustang had been nearly clear, the hot acid solution came out a totally opaque, dark army green, most likely from copper corrosion products stripped from the long neglected radiator. Quite impressive compared to any other “flush” I have tried. Once the flush water comes out completely colorless, add antifreeze to complete the job. If the system has been well maintained and is fairly clean I adjust the acid to 1/2 or possibly 1/4 of the specified 100 grams/liter.

Citric acid is an effective and also relatively gentle cleaner. I now keep a tub of it on hand for all manner of uses. However, it is possible that your cooling system may have holes that are plugged only with rust and/or dirt in which case, as with any other effective cleaner, citric acid may clean the system so well that it leaks. You have to judge whether that risk is acceptable to you. I have never had that happen, but I feel I must warn of the possibility before, instead of after you might try this yourself.

Editor's Note: This 3-page tome is what you get when you ask Gary for a short article (smile). Alternative titles were “Geriatric Cooling” or “Better Cooling Through Chemistry”. (smile).

SPRING 2011 PHANTOM I TOUR

The Phantom I Society's next tour is coming up shortly. Small HP Cars are cordially invited. This is the third of the Society's very successful tours. Two of our cars are already registered. Your editor participated in the first two tours as a rider, and highly recommends the upcoming tour. The people are incredibly hospitable, and you will learn more than you ever wanted to know (smile) about PI vapor lock at the unscheduled roadside "Failure To Proceed" tech sessions. These tours are relaxed affairs, with none of the folderol of regular National tours. You will not be sorry you came! See the Society's website <http://www.Phantom-1-Society.com> for more information. Then contact Henry Hensley at henrylhensley@comcast.net or 713.855.5087 (c) (Houston).

Phantom I Society presents Scranton Spring Tour

April 30-May 7, 2011

ALL PRE-WAR
ROLLS-ROYCE & BENTLEY
CARS ARE INVITED



The Phantom I Society will be touring in Scranton, PA. April 30-May 7, 2011. It will be a hub tour at The Radisson Lackawana Hotel in Scranton, PA. The Lackawana Hotel is a historic landmark that once served as a passenger train station. It was recently renovated and while the rooms are on the small side the hotel has historic charm and a central location. We will be close to the Pocono's Resort area, The Pocono's Raceway etc. We are also planning on a drive to the John Rich collection. It should be a fun week of Pre-War driving.

The idea for the Phantom I Society tour is a more relaxed, less rigid tour. The tour schedule below is tentative as we stay flexible and change our plans according to local conditions, weather etc. One can come for the whole tour or just parts of it. Whatever fits your schedule. We welcome you all. Please note that we generally do not make breakfast, lunch or dinner reservations for the group. We have chosen an area that has many local restaurants and there should be no

problem in finding good places to eat. We hope you will come join us in a tour where you will create the experience you desire. It is truly a participant's tour.

The tour application deadline is March 1, 2011.

SCHEDULE (VERY TENTATIVE)

4/30 GATHER AT THE RADISSON LACKAWANA HOTEL (CHECKIN)

5/01 DAY'S DRIVE TBD

5/02 STEAM TOWN NATIONAL HISTORIC SITE VISIT. NICE RIVE IN THE MORNING.

5/03 DRIVE P TO THE POCONOS RESORT AREA FOR THE DAY

5/04 NO DRIVE - ANNED FOR THE DAY. POSSIBLE MINI-TEL. ISSION.

5/05 VISIT JOHN RICH COLLECTION

5/06 POCONOS SPEEDWAY TOUR AND DRIVE

5/07 CHECK OUT OF HOTEL. END OF TOUR





**9G III/GXL 82 - A GOSHAWK "INDIA" FACTORY EXPERIMENTAL CAR
Harry Tucci and his son Allen, on their 2005 pre-purchase visit to Wales**