

TEE ONE TOPICS

Number 42 March, 2005

WELL HELLO THERE !!!!!

No I have not abandoned you and I do apologise for the wear on boot leather as you raced to the letter box to see if this issue had arrived. No excuses just the 24 hour span has been found insufficient and a certain large black car has commanded the limited amount of energy I seem to have at my disposal these days. Well for those interested the finished job was a complete success and those about whom we don't speak are very pleased. Next week it goes in for a super detail and buff and the hub caps will have their paint rings removed and the caps buffed by our local plater/polisher. So the whole vehicle will look like a million dollars.

MARCH GET TOGETHER

The Federal Rally for 2005 will be held in our Nation's Capital, Canberra from Wednesday 30 March to the following Monday 4 April 2005. The ACT Branch will be our hosts and have planned a very extensive and varied program. Many of you will be attending and will have registered by now.

While in Canberra Peter and I thought you and if you are accompanied, your partner, might like to join us for a buffet meal on **Thursday night 31 March** when we will be hosting a dinner for the S.M.A.R.T. (Spirit, Mulsanne and Related Types) Group at our house at **61 Learmonth Drive Kambah**.

For those within driving distance but not attending the Rally and who would like to mix with like minded owners you too would be very welcome. We must have a lot to talk about so come and join us for a very informal relaxing evening.

As we will be catering we need to know numbers. **Please let us know if you will be joining us.** The timing will be **7.00PM for 7.30PM**.

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Separately I have been caught up in a peculiar debate which highlighted a number of views about the RR movement, the Clubs and the future. Barely a day goes by without someone calling to ask where to get something, what is wrong with my car, who can fix it, where can I get a spares list, is

there a workshop manual or do you have a wiring diagram? As well the NSW Branch runs a public web site for anybody needing to air their problems on RR cars which owners particularly, from literally all over the World write in for help. One of the great contributors to the site, and there are several, David Gore has been a heavy mover and shaker in getting the various repositories of knowledge and information into either a form or a site where they are available to anyone. It seems he has been soundly rebuffed at overseas Club level. The basic attitude is if you are not a Club member, you cannot have the information.

I have no idea of the operating costs involved but my bottom line is that if there is anyway on earth we can assist someone in the information field with keeping this very finite population of cars on the road we should ensure that that person is accommodated. It seems however that the Club managements are intent on preserving their status quo and disregarding the basic asset – the cars. It is a puzzlement.



CONCOURS SUSPENSION

Having had arguments with judges as to how clean suspension should be, I have this fantasy that I will have my Shadow towed to the Concours, placed on jack stands, and then lay the suspension out like the above. I am sure there is a rule about it but no matter. This is an excellent line up of components of an early Shadow's front suspension all nicely powder coated. It is hard to imagine that the sub frame not only keeps all the suspension in place but carries the engine with all its stress demands as well.

This is non compliant suspension and owners of these cars, (chassis before early 1974) should take an interest in the mounting points for the suspension arms where they bracket onto the sub frame. The brackets on a number of cars tore their welds out in this area. Most cars that went through dealers hands for some time after the warranty period expired, had their brackets strengthened.



THE SIMPLE TASK OF BOLTING A WHEEL ON.

One of the very old disaster clichés that pops up from time to time with the older set is ‘the wheel came off!’ No doubt it was fairly relevant in the days of horse drawn carts and wooden spoked wheels but as manufacturers standardised and designed better wheel structures and fasteners, the thought of a wheel coming off your car is beyond most peoples’ comprehension. Rolls-Royce over the years have gone to a lot of trouble to avoid this mishap and with the end of the last World War opted to resort to holding the wheels on with studs and nuts. In typical style the Mark VI’s and Clouds enjoyed blind nuts seen here on the hub of a Phantom VI. If the print is good enough you will note little curved arrows and the word ‘OFF’ in the hope that the operator will undo them correctly. This is because the Factory used left hand threaded fasteners on the left side and conventional ones with a right hand thread on the right. The idea is not unique to Rolls-Royce as I heard one owner informing a captive audience.

From the Silver Shadow onwards the Factory dispensed with the vented enclosed nuts but retained their manufacture in brass and still stamped a direction for removal on them. The nuts themselves have two functions, one is to hold the wheel on, the other is to centralise the latter on the hub. To do this in a practical manner the nose or open end of the nut is spherical which engages a stamped hole in the wheel with the same spherical dimensions and shape.

Inspecting the ‘nose’ of the nut whether the earlier closed version or the later Shadow ‘open’ type you will note that the inside of the nose is not threaded. At least it should not be. Take your car to the local tyre emporium and get a pair of new tyres fitted. If you rage at the right moment you may

avoid the hub caps being permanently dented by the tyre lever used to get them off. This however



won't prevent them from being frisbeed across the floor if he is not ready to catch them. Then out comes the rattler and the nuts are attacked. If he is undoing them in the right direction they will be off in a trice. But while you are distracted by someone asking how fast does it go or similar, our operator goes to the left side and lays the rattler into those wheel nuts. At the point where you hear the rattler about to change gear and really get stuck into the nuts, you emit a traffic stopping scream entreating him to stop!!! By now he has managed to tighten the nuts to a zillion foot pounds. What this does is jam the 'nose' of the nuts into the recess in the wheel so tightly it actually compresses it. Having reversed the rattler and got the nut off you inspect it in a good light with the manager in attendance. You will then find that whereas the nose was formerly unthreaded, now tis not so. And trying to get these nuts restarted on the studs can be quite difficult.

Returning from the nearest pub with the manager and a complimentary bottle of your favourite single malt under your arm, you are just in time to see our operator in full flight tightening the nuts to some hideous figure again with the rattler. By now you will have given up and totter off to pay the bill.



Some little time later you have occasion to change a wheel yourself. Having found the jack and wheel brace you get the wheel with its flaccid tyre off the hub but just when you are about to refit the spare you decide to give the stud threads a wipe and discover that two of the studs are quite loose in the hub. At left there is a picture of one of these studs removed! How can this be? Well our recent rattler friend in merely over tightening the wheel nuts not only damaged them but actually pulled the studs through the hub body. After all they are only held on with large half nuts.

So the next time you go to your tyre place, lock the car and find the manager and explain that you have a procedure statement for inserting his operator's skull in his own rectum if he goes anywhere near your car with a rattler. The wheel brace supplied with the car used with maximum force by a 'normal person' can tighten a wheel nut to 50 foot pounds which is the recommended tension.



THE FINAL WORD ON SILICON BRAKE FLUID

Some of you will be aware of my ravings on this topic. A certain large limousine was passed to me with the driver's words ringing in my ears 'of course the brakes are awful on these cars'. Recovering from my immediate convulsion I had her confirm that statement and assumed that I was dealing with a very strange critic. Having set off I arrogantly stamped on the brake pedal which was nice and hard and quite high and little happened! There was some retardation but that needed lots of weight. On a discreet side road I found a clear run of gravel, sped up to about 60 kph and stood on the brakes. Eventually we stopped. I got out to examine the 'skid marks'. Not there I am afraid just very definite impressions of the back wheel tyres. A quick indication that there were no front brakes. I should explain that these cars used the old Cloud system of mechanical servo and twin master cylinders. The foot pedal actually pulls the handbrake linkage on as an initial step to stopping. Meanwhile the servo is winding itself up and the master cylinders pump their contents to the front and the rear wheels and ceasing motion should be very obvious.

Arriving home with a decent dose of dyspepsia we hoisted the old girl into the air, started the engine engaged '4' and speeded the engine up. With me lying under the car Peter applied the brakes and I was able to watch the trapeze that operates the master cylinders move forward to the limit of its travel, clearly without any obstruction from the master cylinders. It was then that I noticed the tell tale drops of brake fluid on the underside of the master cylinders. Quite simple – the seals had failed – nothing untoward and only the 'hand brake' linkage was stopping the car.

New seals were installed the brakes bled using the installed silicon brake fluid and the brakes worked! All was well except that there was a haunting suspicion that things were not quite right. Some 500 miles and 3 months later having completed another job on the car I decided to give the brakes yet another bleed. Imagine my shock to find that once again the master cylinders were leaking. As you are aware a considerable amount of research went into the desirability of maintaining the braking system on silicon brake fluid. Opinions were very divided but the reported fact that the US Services had abandoned the material raised concerns.



At left:- The smaller of the two master cylinders dismantled. The circular seals at the lower part of the picture swelled to the point of jamming the piston seen to the upper left.

Silicon brake fluid had been in the car since 1984 when it was installed by direction. It seems the owners were most impressed with the results published by the manufacturers, Dow Corning whom I understand are now in receivership following the class action over breast implants!

Below:- One of the front brake pistons and cylinders showing the shredded internal seals that had swollen and almost jammed the pistons.



Removal of the master cylinders the second time revealed that the new seals had swollen and were causing the piston in the secondary master cylinder to jam forward preventing replenishment. Finally, advice from Patons Brake Replacements who make most seals in this country confirmed that modern seals were incompatible with silicon.



The problem with reverting to conventional brake fluid is removing all traces of the silicon and there is no documented account of this having been done. Apparently the solvent for silicon is acetone which was used to soak all removable components followed by vigorous

At left:- The residue in the wheel cylinder which was apparently 'dissolved' rubber from the seals.

rinsing in methylated spirits and drying with compressed air. All the brake mechanisms were removed including the backing plates from the stub axles. The newly manufactured flexible hoses were discarded and another set made. The wheel cylinders all had swollen rubbers which were replaced and the mechanical expanders for the rear brakes overhauled

and re-packed with lubricant.



At left:- The two master cylinders assembled to their backing plate for installation. The push rods for the pistons swivel on a trapeze pivoting about the large slotted pin seen protruding at the right on the operating arm.

The brake lines that could not be practically removed were thoroughly flushed with acetone and methylated spirits. The two brake fluid reservoirs which are located on the right hand side valance feed the master cylinders which are under the floor

immediately beneath the driver. The fluid lines consist of two 3/8" steel tubes which run from the engine compartment to the first body strengthening rib. Special brake fluid resistant rubber hosing

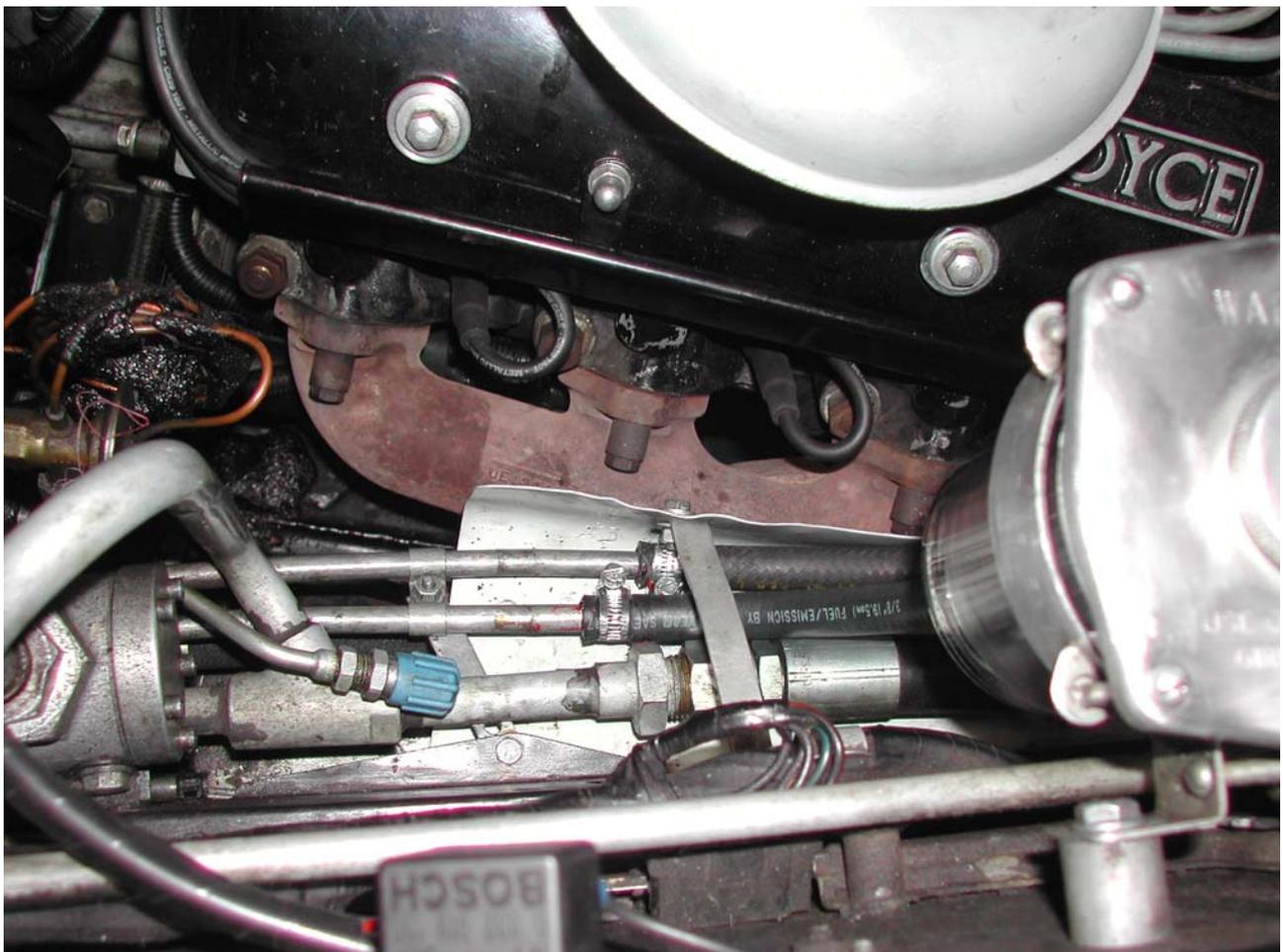
is used between the reservoirs and the tubes at the upper end and from the steel tube ends to the master cylinders at the lower end. The steel line was plugged and filled with acetone and soaked for 48 hours. The rubber lines were replaced with genuine items.



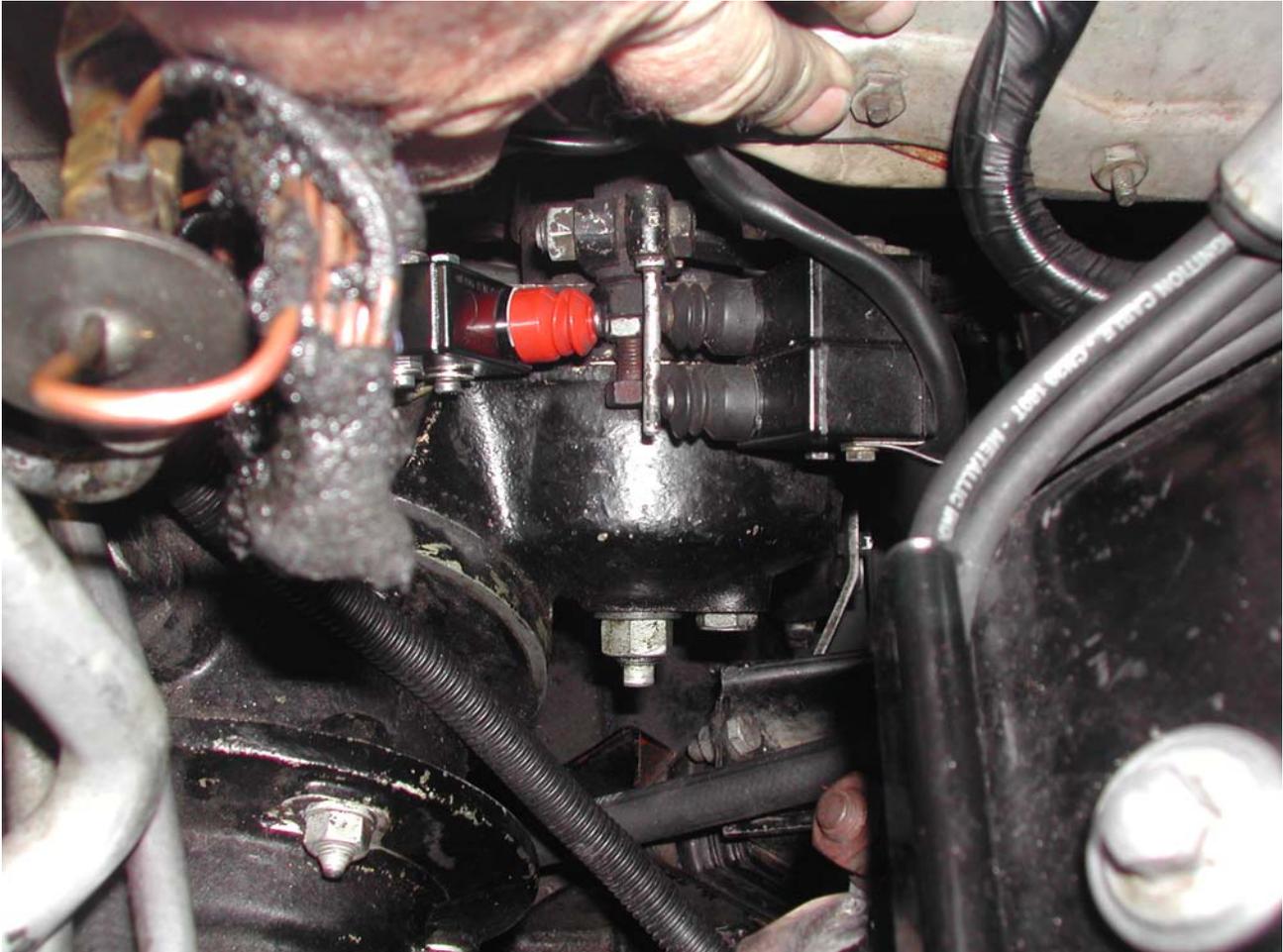
At left:- The left rear brake assembly. The adjuster to the left was partially seized and the hydraulic and mechanical expander to the right was in need of lubrication. Here too the seals were notably spongy.

The master cylinders and all removable components were stripped and soaked in acetone and rinsed with methylated spirits before refitting.

Below:- Both reservoirs to the right were dismantled and thoroughly cleaned and fitted with new gaskets. The supply pipes for the master cylinders can be seen resting on the heat shield in the middle of the picture being fed by the special flexible hoses



Somebody is already reaching for their pen to refute the above. I should tell you that I had an Armstrong Siddeley Whitely for nearly 20 years and that ran for that period very satisfactorily on silicon. The problem arises apparently with later seals. Apparently their composition changed and then they became quite incompatible with silicon. So if you have a car running happily on silicon well and good. But be prepared to give it away when you have to fit new seals!!



THE CASE OF THE BENT FINGER

Reverse light switching has always required a neat bit of designing in the sparks department and Rolls-Royce is no exception. The immediate post-war cars neatly screwed a plunger switch into the gear change gate and apart from getting crudded up with carpet fluff fingernail clippings and the odd match, really gave little or no trouble. Along came Mr General Motors with his Hydramatic automatic gearbox and the design gnomes were faced with more switches this time one to avoid the owner starting the engine whilst the thing was in 4,3,2 or R!

And so they popped a nice frame complete with adjustment holes around the base of the steering column and installed some well tried Burgess plunger switches. As the Chinese say, "One picture etc" and above you have it. Beneath my gnarled finger are three switches each with a plunger protected by a concertina rubber boot – see them? Good.

Between the plungers is a metal finger pointing to the bottom of the page or the radiator depending where you are! That finger is screwed to the gear change shaft that you fiddle with when you have made up your mind whether you are going to go forwards or backwards! Now the switches on the right are normally only one, what the other one is for in this application I have no idea but it looks good. The single switch however completes the circuit between your ignition key and the starter motor. If the switch is not depressed – there is no starting and the only way to depress it is to move the gear selector to ‘N’ and the finger swings over and depresses!!!

I appreciate this is very technical but bear with me. When the driver wants to turn on the reverse lights he has to depress the switch on the left hand side and this is done by moving the selector to ‘R’ thereby swinging the lever to the left depressing the plunger on the reverse light switch.

It couldn't be simpler or more reliable eh! Ah but things wear and move. In this case the neutral start switch on this car apparently moved a little away from the finger and much lemon sucking as there was no starter noise coming from the engine department. Both switches are held to their mounting bracket by two screws each. They simply need to be loosened and the switches slid across until they close sufficiently to make a good contact. The screws are then tightened. This is what should have happened on this car but it seems the repairing chap didn't have a spanner (4BA) to undo the screws so his solution was to bend the finger to the right so that it pushed the neutral switch in further. Not neat but effective, but what about the other side.

I first noticed that the car had no reverse lights so I turned on the ignition engaged reverse and made like I knew what I was doing with a very impressive meter. It was when I touched the reverse light switch and suffered second degree burns (I am a bit of a wimp) that I realised something was wrong. There was also the smell of cooking Burgess! Bending of the finger had of course worked the neutral start switch but when the finger was swung the other way it almost pushed the reverse light plunger in to light the lamps – but not quite. And so we have arcing and a potential fire hazard. The switch needless to say was burnt out but was replaced and the finger straightened all switches adjusted and life was better!

Before you go rushing out to the Shadow remember this is a Mk VI or VII or Cloud problem. When the Factory fitted electric gear changing the requisite switches were incorporated into that system and we have a whole different set of problems. And as a parting bit of advice, when you get the “dead key effect” keep in mind these little switches wherever they might be – all automatic gearboxed cars have them!



INCONTINENT CRANKCASES

We all know about those ingenious little holes the factory thoughtfully cast into the side of the vee eight engine blocks to warn us that seals were failing around the bottom of the cylinder liners but then I showered much words on the topic on page 580. Well the above is a crankcase I 'doctored' some 500 miles and three months ago. Being fundamentally lazy I balked at pulling the starter and blocking the remaining hole behind it. Conscience finally got the better of me and out came the starter. The evidence of the weep is plain to see compared with the one next to it which can be seen with its little grub screw firmly planted in it.





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PUTTING A CLOUD ENGINE IN ITS PLACE

The recent upheaval of our local Silver Cloud III through having its sump removed resulted in a movement of the engine location to the right. The clearance seen above is of the order of 3/16"! On the other side seen below we had a good inch to play with. There is no adjustment and indeed we would not have noticed the situation had we not had to do a very abrupt left turn during the first post-operative test drive to avoid running down a herd of rhinocerii which tend to roam the streets of upper Kambah! The shriek that came from the engine room must have woken the dead and certainly caused the driver and I to wonder about our last meal.

What had happened was the fan had tried to shred the radiator cowling when the engine leant that little bit over to the right. No damage fortunately. The solution was to undo the four bolts holding the front engine mounting cradle to the chassis side rails as well as the four bolts securing the engine mounting itself to the engine and the cradle. A bit of 4 by 2 hardwood was then applied as a lever and holding the lever hard to the left all the above bolts were re-tightened. Magnificent!



There is now a 3/4" clearance all around the fan tips!! It is well to remember that with the



introduction of the Silver Shadow, the rear engine mounts were adjustable. I have yet to find out how this is to be set up but in the meantime if you have occasion to remove the rear engine mounting brackets on a Shadow or later car – scribe the position they are set in before you undo them. These engines are inserted with very little spatial leeway and remember they move around a fair bit while you are driving.

And need I remind you to keep an eye out for the condition of the mounts, they can go hard and cause a lot of vibration or they can rot and let the engine go!!



ENGINE SUMPS



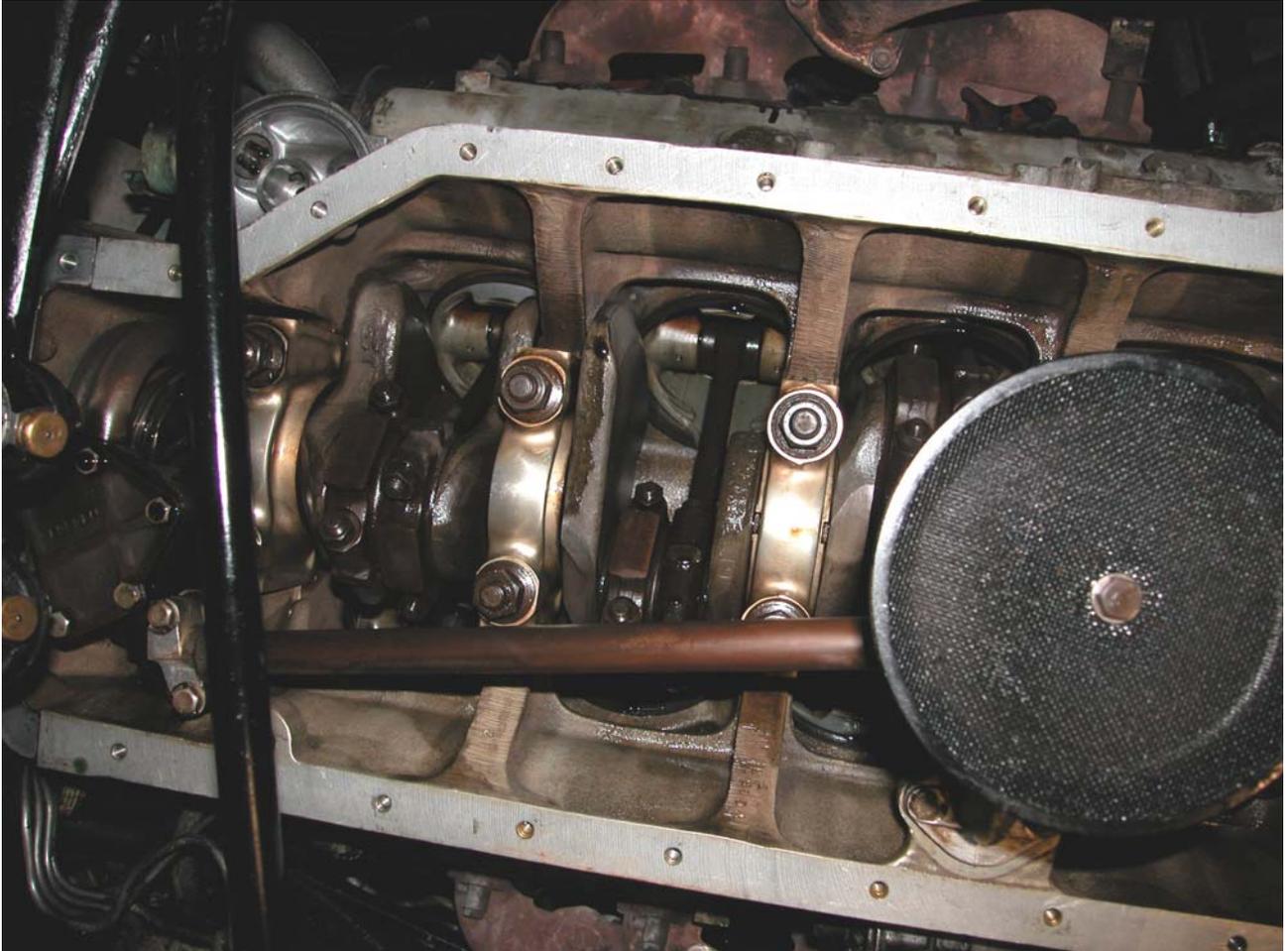
Many owners wonder what lurks in that container that hangs under the engine. Well I can assure you it is not pleasant. The picture is a typical vee eight sump. The front is very shallow to encourage the oil to get to the back as quickly as possible and also to allow the steering rods and levers to do their thing without smacking the engine. The level of the front is carried to the rear by a baffle which helps to stop the oil sloshing around too much and more importantly holds the oil down while the car is going up or down very steep inclines. The alternative is to have the big ends at either end of the crankshaft

belting the puddle of oil and whipping it into a froth which is not good for lubrication and also gives the rings a harder job to scrape off excess oil.

The large hole in the baffle accommodates the oil pump pickup. You will recall that on the vee eight the oil pump is right at the front driven by the crankshaft pinion. But as you will see above the bulk of the oil is at the back of the engine, so a pickup pipe goes back to a primary mesh strainer and intake. Lastly the 'hump' to the left of the large hole, accommodates the float for the oil level sender, the hole for which can just be seen peeking below the lower edge of the unit in the picture. George Shores demonstrates this problem with a shaped coat hanger that he pokes through the drain hole and drags out whatever sludge he can rake out. A couple of mechanics observing this at a self help session, observed that it was quite harmless and a waste of time at which remark George asked whether he should pour the muck back into the engine. It was not appreciated!



And here is the rewarding sight you have after removing the sump. The round strainer is the pickup point for the oil. From here it is sucked up the large pipe to the pump at the front of the engine. Note that the clearance between the bottom of the strainer and the bottom of the sum is only a fraction of an inch. Some gentlemen have been known to jack a car up by the engine with the jack under the back of the sump which believe it or not will dent! Conceivably, dented far enough toward the strainer which is fixed could restrict the inflow of the oil!!!



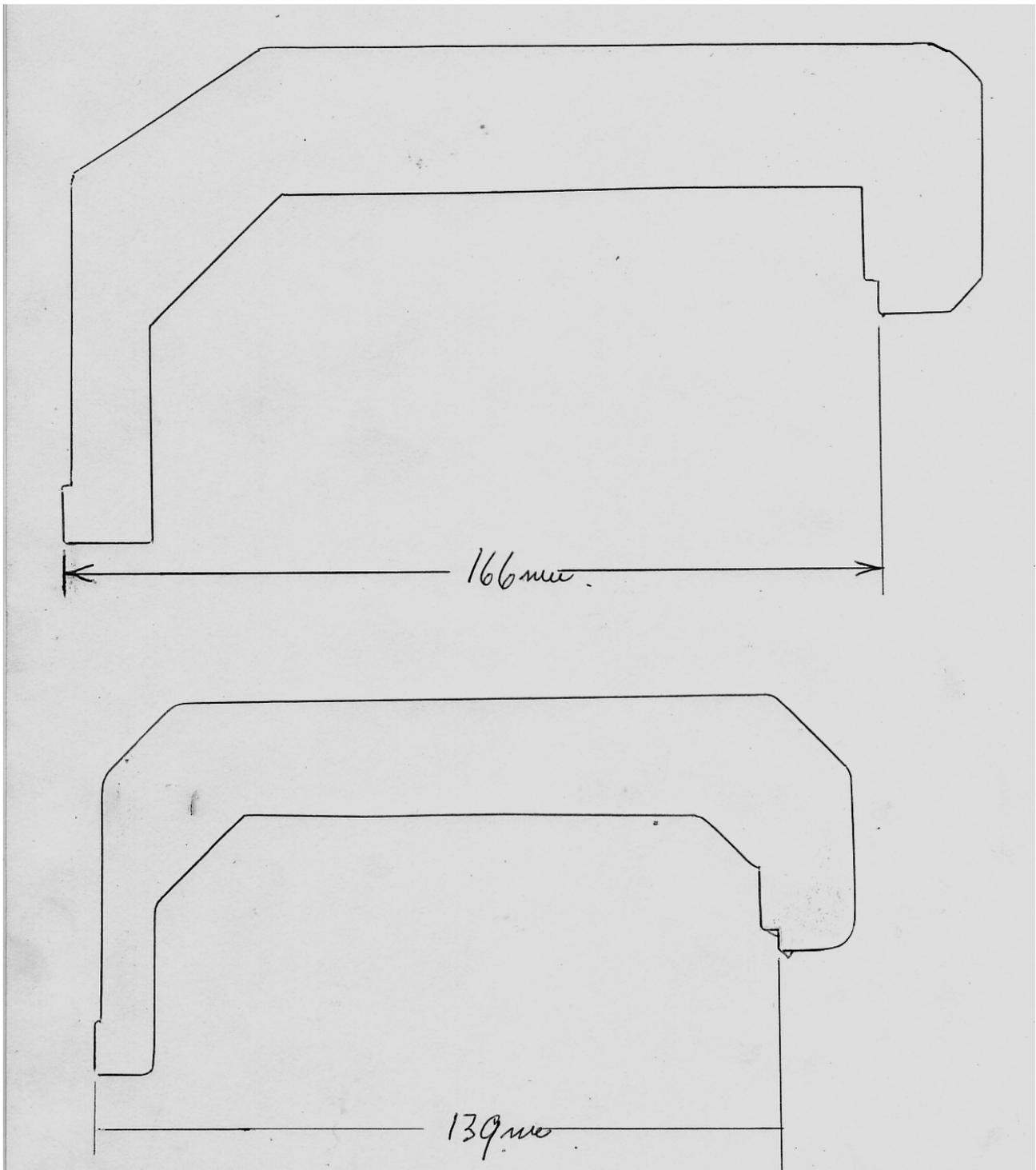
Above:- A nice clean interior suggesting little compression blow by and regular oil changes. At top left is the filter head used on all vee eights until the Shadow II. Apparently it is a simple job to change the heads over to give an earlier car the benefit of spin on filter changes and possibly better filtration.



A FAIILY SIMPLE HOUSEKEEPING TASK

These parking and flashing lights were first used on Cloud III's then on every Shadow and Phantom. They are not fancy – diecast bodies and cheap reflectors with plastic lenses but they are unique and hence expensive so look after them. One obvious precaution is to ensure that the gasket is intact and not shrunken as this one was. They are readily available.

which can be readily manufactured. Of the two shown the larger one is for the Silver Shadow box and the smaller one is used for all other boxes. The critical dimensions only have been shown.



WEB SITES YOU SHOULD HAVE ON YOUR COMPUTER

<http://www.rroc.org.au/>

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