

TEE-ONE TOPICS

Number 79 November, 2008



THE RAVAGES OF TIME

This stopping gear was attached to one of the iconic early Corniches. The owner, one of the more optimistic members of our group that I have met said that he was despairing of the reliability of the handbrake to stop the car and indeed was contemplating bypassing the handbrake safety lock so that he could deploy the folding roof when real retardation was required.

First step was to remove the brake pads which fairly typically were not original and the above mess greeted my eyes. A small digression. I have as much knowledge of the composition of the brake lining material as I do of the sex life of a Siberian Newt so I tend to rely on the Factory to supply stuff that is capable of doing its job. Twice now I have seen non-standard pads used on our brake rotors which have then been eaten by whatever was in the friction material. An expensive economy? This car has, as seems so common these days, an



indeterminate history but it was thought to have languished in a museum or collection for quite a period, probably almost as destructive as parking the car for a year on Bondi Beach!

You will notice rust around and in the visible calliper piston. This is largely unavoidable given the temperature the things have to endure and the frequent dousing with dirty gutter water. The only part however that should get rusty is the very tip of the piston where it meets the back of the brake pad and probably in the cavity. The only real protection is that thin rubber boot that

surrounds the piston but even that has its limits as you can see.

The service books list regular inspections of the boots and probably the best method here is to crack the nearest bleed nipple ease the pads and piston back, close the nipple and extract the pads. You can then have a good cleaning session and check the boots. On top of this maintenance you will of course be flushing the system once a year if you are using brake fluid. If all this happens you should not see messes like this on your car.

By the way this car had magnificent woodwork!!!!



WARMING THE CHOKE COILS

These little pipes that screw onto the 'B' bank manifold on all carburetted vee eight engines, are subjected to a great deal of heat. Although the nipples are brass they still oxidize and not infrequently either hole or snap off at the manifold. The view here is privileged, taken from a camera shot

at the end of my arm. What with the brake reservoir position above the junction and the general clutter in the area the condition of the stove pipes is easily overlooked. If the pipes

hole they will suck ambient air rather than air passed through the in-manifold heat exchanger, the choke will close and the car will eat fuel.



After market pipes are now available from Introcar in the UK. They come in two sizes, long and short. The insulation is no longer woven asbestos as will be seen above.



OIL PRESSURE SENDERS

Those who have fumbled around the front of the vee eight will be well aware of that quaint little thing resembling a small tin of tuna screwed into the mount for the oil filter, complete with a single wire either fastened with a push-on Lucar connector or retained by a small brass nut and washer. This gadget is a variable resistance unit designed so that as the oil pressure in the engine increases it pushes a diaphragm, in turn connected to a lever which moves a contact across a wound resistance and varies the amount of electricity permitted to escape to earth (the engine) but on the way move a needle on the oil gauge on the beautifully styled fascia etc etc.



It was one of those very comfortable things you noted when snooping around an engine particularly one of dubious heritage. Here are the new leaking version on the left and the newer no-leaking 'tuna-can' version.

The reading on the dial on the beautifully polished fascia was usually reasonably accurate (basically you watch where the thing usually sits and if it varies greatly you panic!) But it seems the Factory has run out of 'tuna

cans' and some bright young procurement lad or lass (disconcerting the way women are usually more efficient than men) decided to go to a different contractor and develop a whizz bang replacement.

There is a Phantom VI which shall not be identified that has now had no less than five of these gadgets fastened to its lofty engine and every single one has leaked. Imagine the



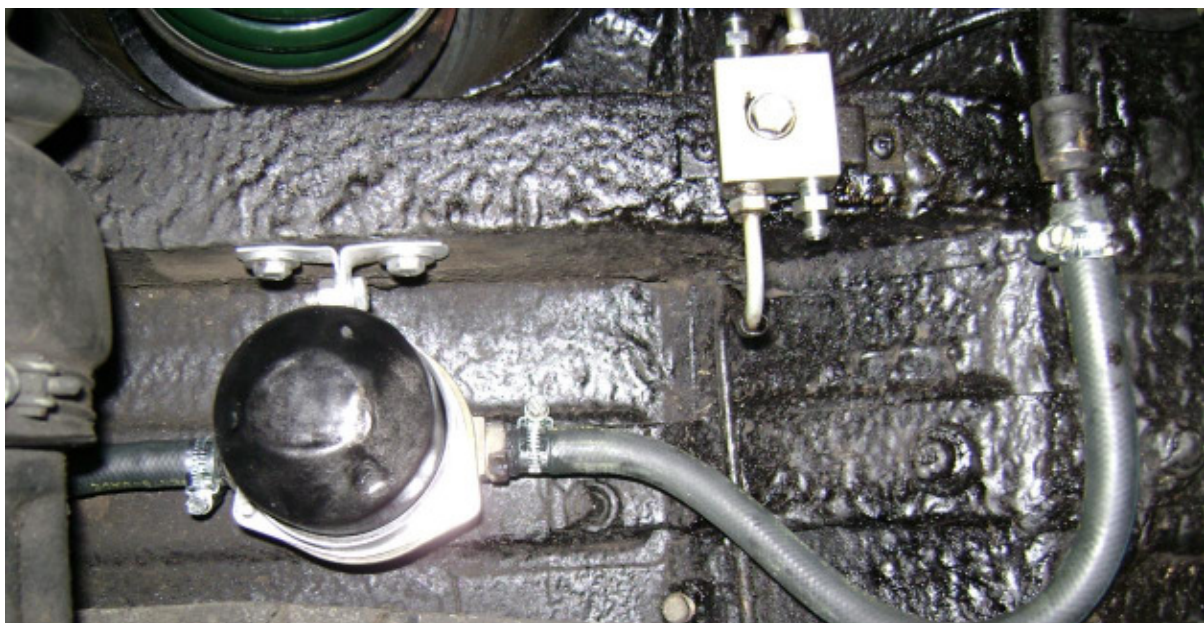
ceremonial with bands playing and the country's military might standing at the 'present' while the dear old thing micturates the liquid of life on the pavement of the port-cochere from this incontinent replacement contraption!

Well as I have been quietly advised that a peerage is not in the offing for my services, in desperation I mentioned my predicament to Robert A Chapman,

purveyor of items for Rolls-Royce and Bentley motor cars. I wondered to him that it would appear nobody would get off their aspect to have this problem fixed and lo, he produced a stock of 'tuna can' senders! Not only do these items not leak. They actually send an excellent signal to the beautifully veneered fascia surrounded oil pressure gauge, so that you have an even better idea of what that little pump up the front of the engine is actually doing!



FIRE PREVENTION



The round black item seen here on a 1972 Silver Shadow with a couple of hoses either side, is surely the primary fuel filter. Do I have to mention that you are lying on the floor looking up under the car immediately in front of the right rear wheel? Proceeding forward.....

Many years ago (as I was reminded by what I thought was a friend tonight) there was a radio program 'My Music'. There was an expert panel of musicologists (never have relaxed with that description – am I a Tee One Topicologist?) who would identify the most obscure bits of



Here we have the next two fuel hoses, the original wire clad ones shortly to be scrapped. These deliver fuel to the main fuel pump seen top right and carry the output from the pump up to the noisy end of the car! The thick umbilical seen passing under the pump is the main battery cable also going up to the front to help all the bits function.

music quite often after hearing only a few bars! Well what are you looking at above? It is sure a doddle!

I have often wondered about the trials of the purchasing officers in the old Factory. The production people looking at the order book and in consultation with the purse holders would reckon on needing 200 of these filter assemblies to keep cars going out the door. But maybe the funds weren't there or there were other priorities and only 100 would be ordered. The filter people would look incredulously at the order and wonder why should they tool up for such a piddling order? Maybe they gave the Factory what they had and got on with producing a new and improved version. When the order ran out only the new one was available!! The point here is that there are two versions of this filter and the filter element is different in each assembly.

More importantly (a blocked filter can certainly be better tolerated than having the whole rear end of your car on fire) I draw your attention to the pipes connecting the fuel tank to the carburettors, two of which you have seen above! The originals were wire bound rubber hoses beautifully terminated with carefully fitted rubber caps to stop the wire unravelling. Perhaps they had heard of the Australian 'gibbers' and their possible attack on fuel lines. In any case these lines are apparently not available. If you really want to be original you can buy this wire-clad tubing at racing shops and transfer the caps to the new lengths. But three times in my short experience I have seen these lines apparently in pristine condition albeit a little

dirty, steadily dripping fuel near quite hot bits of the car. The solution is simple. Replace the tubing with modern fuel hose, probably that designed for fuel injection systems which I suspect would withstand the combined frontal attack of a



Here we have progressed in this 1972 Shadow to a point roughly below the driver's bottom. The fuel line can be seen arching over a shaft which in turn has a small lever fixed thereto. The latter is actually the working end of the beautifully styled accelerator pedal. The two very obvious pipes to the left are from and to the transmission and eventually connect to the oil cooler in the base of the radiator core.



And here is the last lap. The fuel pipe (the one with the printing on it) has been bracketed to the main battery cable for stability. The length of fuel hose is the longest of the line and is simply clamped to a metal feed pipe beside the torque converter housing which in turn feeds the carburettors. It is interesting that in the later SZ cars this final metal piping was dispensed with, modern rubber hosing thought to be quite adequate for the job. The need therefore to keep an eye on these fittings and replaces them from time to time, is all the more important.

platoon of Echidnas in full erection mode! And use new clips when you do!

Finally if you do decide to do this job yourself, think ahead and run the tank as low as possible. Take all practical measures to prevent a fire remembering that petrol fumes are heavier than air and if there are a lot of them they will roll across a floor and find a flame or spark! Best you start at the tank and work forward as this will avoid the embarrassment of fuel syphoning from the tank if you open the line up lower down. And very lastly, of course take the whole filter assembly off, clean it out and replace the element!



SUSPENSION LEVELLING VALVES

At some stage of your life or more importantly the life of your car you will choose between extending the mortgage or attempting to remove the levelling valves on your Shadow. These assemblies have more pipes and connections than the average healthy octopus and can be a bit daunting to the uninitiated. If you want to know where all the pipes go have a look at the



workshop manual with its pretty colour coded diagrams. The valves are held by two bolts to a bracket welded to the rear sub-frame seen at left in the picture. The three flexible pipes in the picture incidentally have nothing to do with the functioning of the brakes but in a frenzy of hose changing are often overlooked. Sundry pipes here have been disconnected and of course you would not start this job without

exhausting the accumulators. You will notice the orange cap on the end of one pipe. This happens to be the line to return the RR363 back to the reservoir after it is no longer needed to lift stout passengers in the back seat! So if you do not seal it off, the reservoir will simply drain itself all over you and the floor. You will also have noticed that the valve itself has been unbolted and about to be extracted.

A word to the wise. The biggest ache in the rear end is getting the various nipples and pipes back where they belong without crossing the threads. The best advice I can give you is to screw the various connections in to their places before you mount the valve to the sub frame. This means that you can wiggle the valve around as well as the pipes to ensure that the threading is according to Hoyle! Best practice is to do this by finger. Ideally you should be able to screw all these fittings in by hand. Cross the threads and you start to doubt the life expectation you have come to expect! ✂



A WORM'S EYE VIEW

While under the car surveying the wonderful job you have done on the fuel hoses you may care to have a lighted look up the rear spring housings. Here you see the spring fully extended, at least as far as the retainers will allow. At the top is the platform that the spring sits on, which in turn is pushed up and down to raise or lower the rear of the car. Running through the centre of the spring is one of the rear shock absorbers. If you need to replace these you should be aware that they are gas filled and when released from the confines of the suspension will extend some inches. The black cup at the bottom of the spring seen here at the left can be released with 4 small bolts but to release the top end of the damper you will need to exhaust the hydraulics and remove the rams in the boot. No big deal just confined working. Think of the Beaconsfield miners that were trapped! At least you can get out of the boot when you want to, throw the spanners on the floor and go get a cold beer!

The springs are of interest. Once again I called on Robert A Chapman and his services in Bayswater, a suburb of Melbourne. Robert has had these springs manufactured locally to replace the factory items. They apparently have an extra coil which in my experience give not only a better ride but improve the cornering!



“Only a strong economy can produce the well fed who have the luxury of espousing with religious fervour their uncosted, impractical, impoverishing policies.”



WHICH END IS IN?

The experts will tell you that there is nobody silly enough to put this little valve in back to front! They are wrong. You are looking at one half of the levelling valve on a Shadow. The little bit hanging out of the assembly can indeed be inserted back to front and no amount of wiggling the operating arm of the valve will produce the requisite lift of the car. Because the cross sectional drawings in the manual variously show the bits from one side of the other and because the scale of the drawing is rather small, it is easy to get confused as to which end is which!

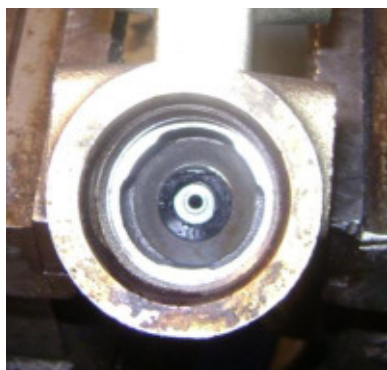


While rummaging around the rear end of your Shadow, be aware that these simple straps are the rebound stops for the rear suspension. Originally they were lined with rubber to soften the 'clunk' as your wheel drops into a pothole but these wear and the replacements if they are still available cost several arms! The main maintenance seems to be to poke a finger full of grease in them to stop squeaking.



THE 'G' VALVES ARE A'ROTTING!

This little valve as you know sits precariously at the back of the rattrap and sits astride one of the rear brake lines. The idea is that under heavy braking, a heavy steel ball, seen at the lower left of the picture, rushes up an incline and blanks off further fluid going to the rear stoppers. This is highly desirable since locked rear wheels in a major skid are a perfect assist for pirouetting in your car. The valve requires no maintenance other than to benefit from the annual flush of the whole system which you religiously carry out!



But after quite a few years the little rubber cushion at the top of the valve which surrounds the outlet, perishes! The rubber cushion seen at left is held in place by a drilled rivet. The drilling's hole is what the brake fluid passes through.

A kit is available which includes the rivet, the rubber seal and another to go around the screwed in cap at the other end. The rivet is easily removed with a suitable Ezyout and simply pulls out. If you do not periodically replace the seal it reduces to near-jelly and after one major stop with all 2600 psi of brake fluid trying to get down the hole, there is a likelihood that the seal or what is left of it will be forced down the brake line and block off all future communications. In my experience no amount of pressure will clear these blockages and all you can do is remove the line and have a new one made up!

The 'G' valve (actually called the deceleration conscious limiting valve) was used to the end of the old Factory series which of course included the mineral oil cars. Incidentally do you know that both the 'new' Phantom and the post Crewe Bentley do not use mineral oil?





BUZZING FANS

A common problem. To minimise transmission of air conditioning fan noises into the body of the car, most of our fan motors are suspended on rubber, one of which is seen here. If the rubber mounts are fractured, replacements are usually available from commercial hardware outlets, although the threading will probably be metric. As a temporary measure, you will note that initially the rubber mounts sag with heat and age. It is often quite practical to rotate these through 180 degrees which should stop noise transmission by lifting the fan motor.



BURRED NIPPLES

In an ideal world these little gadgets would present no problem. They are as you know an ingenious means of 'bleeding' fluids out of any system either to replace it or to extract compressible air mixed with it! The perfect world would start with operators using first the correct spanner to release and close the nipples and then actually use the spanner correctly. Of course if the owner had the system flushed each year nipple problems would not arise! In true Marque tradition these items are often quite difficult to get a spanner on cleanly. Sockets are impractical although for those nipples that have frozen they are an ideal way to 'break' the grip. The nipple seals by forcing that conical point seen in the pictures into a corresponding conical hole. Unfortunately the ham fisted will tighten them as if to contain a nuclear explosion. It is quite unnecessary and if you manage to snap off a nipple you probably have a large job on your hands. More and more cars in the SY series are turning up with disgusting hydraulics including frozen nipples. Before you get the 12" tommy bar onto the spanner bear in mind that removing a whole stuck nipple is much easier than removing a partial stuck nipple.

The obvious releasants (now there is a new word) are WD40 and the like. Remember this is not the saviour of frustrated amateur mechanics. It does take time to soak in. And now we have a range of 'freezing' spray on chemicals that are readily available and really do restore one's confidence in being able to 'break the grip'. A friend and I have been trying to recover one of the iconic Corniches and something as simple as the sump drain plug we found had practically welded itself to its seat. If you really lay into these items you will as likely twist the whole plug, seat and surround out of the assembly. A good spray of one of these propriety products did the trick.



But back to the nipples. Try smart, but prudent tapping with a brass drift to loosen the threads. This is an old trick for any tight corroded bolt. The theory is that 'hammering' actually forces the bolt/nipple whatever further into the nut/casting etc for an instant partially breaking the clag holding the thing. If your best efforts fail can I recommend, if you are fortunate to have one in the neighbourhood, getting a specialist to do the removing. I have one of these in Canberra who has reduced me to simpering rage by arriving with some potion or tool and in minutes released the problem before my very eyes. If, as

sometime happens the removal is beyond God and man, he and his ilk are always able to offer a scheme for repair.

Occasionally, a nipple will leak regardless of how tight you do it up. This almost invariably is caused by dirt on the seat. Naturally you will wire brush the nipple but to clean the seat face which can have detritus lodged on it that has yet to be identified by archaeologists, use steel wool in a little ball and a suitable sized Phillips Head screwdriver. The steel wool is shoved into the nipple hole and the screwdriver forced in after it and swivelled with much vigour. Having got the seat clean, have a close look with torches and mirrors if necessary. If there is pitting you can grind in the surface. Get an old nipple with a good seating surface and grind off the thread sufficiently to allow insertion into the nipple hole without having to screw it. A little valve grinding paste and a socket with a screwdriver handle and you can clean that seat up perfectly.

Lastly be aware that there are three size nipples supplied by the Dealers. These are shown in the picture and I will not attempt to define which nipple is used where. When trying to identify replacements it is as well to have a sample of those available and work out which fits best. The centre nipple shown for instance because it has a longer 'pointy bit' if screwed in some holes will 'bottom' after about two threads have engaged. Clearly this is to be avoided!



Drive safely over the holiday period please!