TEE-ONE TOPICS

Number 29 October 2003

The word recalcitrance was forced into the political argot some years ago and if anyone wants to apply it to me there will be no argument. In a newsletter that purports to load up the local post office once a month, here I have two significant events to report on. Shame – but there have been distractions which have now passed.

GOULBURN

Steve Crocker and Harry Atkins both NSW members with George Shores and Chris Gillings in the background. Those of you who enjoy the cut and thrust of the Club's web site have Chris to thank for making this facility possible.

The NSW Branch in concert with our Territorial members organised a very social weekend which catered so well to the attendees' interests it was booked out before I could even write out a cheque. We managed however toget into the technical session organised by the NSW Branch Technical Officer David Gore who had persuaded our new icon for matters electrical, Ken Saunders to desert his Queensland climes and lecture us for the day on basic electics as applied to our vehicles RR. Bryce Ronning an ACT member and former owner of the Garvey Shadow, commandeered very suitable lecture rooms at the local TAFE and a very instructive session followed, puncuated by morning tea, lunch and pre-prandial snacks. Ken had gone to a lot of trouble preparing training aids which brought out a lot of well-webbed memories. Teamwork was good and members from Sydney, Canberra and our mob worked well together.

Ken Saunders in full flight and wondering what a damn fool question that was just posed to him.

TERRIBLY BRITISH DAY

I was a little sad as only an old fella gets with the passing of time, with the overall impact of this event. It must be some 30 years ago that a young Defence Officer Mick Miktowicz whom I barely knew, trundled out to a farmer in Hall ACT and begged for the use of a paddock to help get a heap of British cars together. Some 400 cars turned up as I recall including such diverse British products as Jowetts, Singers, Sunbeams and Bradfords. There was no RROC in the ACT at that time and I cannot really remember attending but I certainly remember the impact it had on the local auto community. Mick was restoring a Mark IV Jaguar at the time and somehow managed to cement the event into that Club's calendar. Well last Sunday the 23rd of November saw the latest gathering and the greatest number of Marque cars there in the Treasury car park were RR's and B's! There was a herd of Jaguars that kept very much to themselves and a fairly gregarious clutch of Armstrong Siddeleys, separated by a couple of the inevitable Morgans and a persistent fellow that kept punctuating the event with a very nice Aston Martin DB6. But we could have done better – much better.

One of a number of ecumenical meetings held in the car park, to the left Al Kinloch the ACT President with yours truly George, Steve and in the red jumper, Bryan Inder our very own Federal President.

The line up. We really must do something about getting some older cars on the ground.

Anyway we had a great day, George produced his ubiquitous barbecue and fed anyone who was within walking distance, I had rounded up some 5 cars including our own and press-ganged drivers into getting them there and back. George Shores brought his newly painted Shadow II, Greg Whellum and Peter Smith together with Bob Campbell-Stewart in their Shadows and Warwick Grigg in his Silver Wraith II. Confiscated cars included Shadows from Sid Drury and Bill Fleming and two Spurs, one from our garage and the the other from late Ken Glover. Ros' '87 Spirit and Wayne Wardman's Shadow II topped off the group. Peter and I have been

Both Spirits and Shadows are really commendable for their accessability in the dashboard department. The pretty facia comes off easily with a few screws and the top roll lifts off after removing a few more. The usual motive in these exercises is to replace dash lamps which are tiny 13.8 volt bulbs neatly covered with a dark blue plastic condom. This gives that discreet clear light that makes the dashboard very attractive at night. One little modification I have been doing is to hook up the light for the gearchange quadrant so that it comes on with the ignition (there is plenty of power in the area from the gear change mechanism),. This overcomes the difficulty of seeing where you are in the gearbox in broad and bright daylight.

racking the brain cells to come up with a collective noun for Rolls-Royces, I favour a fright of Rolls-Royces but other examples include a hoist, a collation, a royce of Rolls and some which the local Ford yahoo's dreamt up during periods spent beside the road. (Digressing, I had the almost orgasmic experience of noting a rather nice Ford something broken down on an island in the middle of the road in Civic. The customary young mouths were leaning disconsonately over the engine and having the perfect opportunity as I had to slow down to past them 'Get a Rolls, I screamed'. They all to a man (?) looked blank but I recovered a lot of satisfaction from previous experiences with their ilk)

As usual we sat around and bumped gums till mid afternoon when we packed up and some of us trooped out to our Patron Bob Skillen and reminded him that he was sorely missed.

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KEN GLOVER

Ken is no longer with us. Detailed obituaries appear elsewhere so I won't duplicate them as most readers would not know Ken. A local lad to Canberra he would turn up from time to time with his '83 Spur to self help groups, puffing away on the habitual cig and chatting to all and everyone. He was one of those men who have reached that comfortable time in life where he refused to be fussed by his surroundings. His sister Ann rang me with the news and I realised with a shock that I had not heard from or about Ken for nearly a year. He had returned to the Old Country to check his roots, felt strange, got to a doctor and eventually was diagnosed with cancer. Ann flew over and brought him back to die which he did with some comfort thanks to local facilities. It is strange how we are always sad at the death of a friend, even though it is as certain as tomorrow's Sun rising. I suspect it is our own selfishness that we have lost the pleasure of a friend's company that really upsets us. And I often quote a philosophy held, I understand by Jews, they mourn the birth of a child and celebrate the death of an adult. Certainly when my ignition system fails I want a quick switch off in comfort and all my friends to have a great wake! Hopefully Ken is up There organising a self help group for all the Silver Ghosts among later models that must be waiting our attention!

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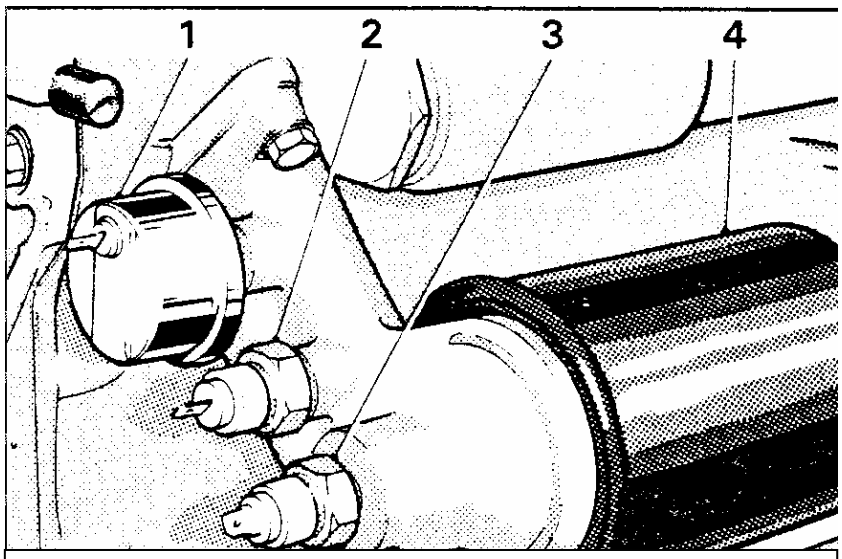
FLAGGING SPIRITS AND PRESSURE SWITCHES

Noel Kennedy, that denizen of the Northern State called to say that his Spirit had had a near-death experience while returning home from the very enjoyable S.M.A.R.T. trip to Griffith. Seems the car would gradually peter out and no doubt with fingers crossed and eyes cast appealingly Heavenwards, Noel would attempt a re-start which was always successful. Fortunately help was at hand at one of those back country garages complete with old-timer mechanic. The latter was not awed by the car which is always a relief, listened to Noel's account and noted that there was a significant oil leak at the front of the engine.



The Shadow II has a similar set up to the Spirit above. Item 1 is the sender for the oil pressure gauge, 2 is the switch for the switchbox light and 3 is the switch to turn off the pumps 4 is of course the oil filter.

Undoubtedly you have already diagnosed the problem but for the less bright I will explain. The oil leak came from the oil presure switch that turns the little green light on and off in the ignition switch box. It is simply a diaphragm spring loaded so that with no load it closes a circuit. A wire from the oil light connects to it and with the closed circuit, the switch is earthed and the light glows. When the engine starts the oil pressure pushes the diaphragm against the spring the contact is broken in the switch and the light goes out. There is also another switch whose function is that in the event of the oil pressure dropping while the engine is running, by a bit of clever wiring and a relay, the fuel pumps stop working and the car stops proceeding.

In Noel's case the pressure switch was actually leaking so much that it was losing pressure to the point where it triggered the pump switch off. I was most impressed and remembered that an old head in such matters is a valuable diagnostic aid. The switches are a common garden variety and readily available. The centre terminal mount which is usually plastic or ceramic is held in the assembly by swaging and for some reason this sometimes lets go suddenly and at a good clip one can empty the sump in seconds. The moral is, if the switch is leaking replace it!!

WIRING COLOURS

Circuit diagrams whilst usually incomprehensible to mere mortals often use various abbreviations for identigying their colour. One intrepid soul recently enquired about the secret code "Are initials like wn, nu, nk, gy, etc actually the colours of the wires?"

The answer came quickly:-

> **wn** = white with brown stripe **nu** = brown with blue stripe **gy** = green with yellow stripe
>
> The code is base wire color first followed by the stripe color if any. Then a dash followed by "p" or "c", for either plastic or cloth outer cover material.
>
> The color abbreviations are:
>
> B = Black G = Green N = Brown P = Purple R = Red S = Slate U = Blue W = White Y = Yellow

The Cloud series of cars were the last to use cotton braided looms and the Shadows greatly reduced the quantity of braided wires. The cotton braiding was there principally to facilitate identification. Unfortunately in the engine compartment where things get undesirably hot the braiding dried out cracked and fell off. Not only was identification difficult but the wiring generally looked like a dog's breakfast. Looms are readily remade to exact colours and should be considered particularly in the engine compartment where even though braiding has no longer featured, the wiring itself is ultra-brittle.

THE CONTINUING SAGA OF RR363

David Gore as most of us know has been sleuthing the channels to discover what goes in to the vegetable based hydraulic brake oil prepared for Rolls-Royce by Castrol. Popular gossip suggests that at some recent time RR363 had its constituents changed due to the unavailability of a particular chemical. Unfortunately this particular bit of the recipe was responsible for among other things, lubricating the pumps. These as you know are chugging up and down whenever the engine is running regardless of whether brake pressure is required or not. And so when reports started coming out of the Northern bit of our planet that pumps were starting to give up the ghost (no pun) rather prematurely, the cause was rightly or wrongly, sheeted home to the missing component in RR363! In Australia our only evidence has been weird groans coming from the levelling system – again sheeted home to the newer

fluid. Enquiries to all interested parties resulted in the expectable brick wall. David however was told authoritively on the Club circuit that a new formulation had been worked out and the problem fixed. But for reasons you can work out we are not about to get a fanfare when the new stuff appears.

Guessing that the agents for our cars were surely using the correct stuff I discovered that they indeed import their own supplies (albeit at twice the price that Castrol charges) so I had them send a couple of litres for my inspection. Sure enough the labelling is different. The photo shows the new stuff on the left and the old stuff on the right. The bottles themselves are identical. So off to Castrol to request the new stuff – no knowledge but then again I was told new stuff is arriving all the time. Seems we will have to wait until the pipeline clears itself.

IS YOUR ENGINE CONSUMING BRAKE FLUID ?

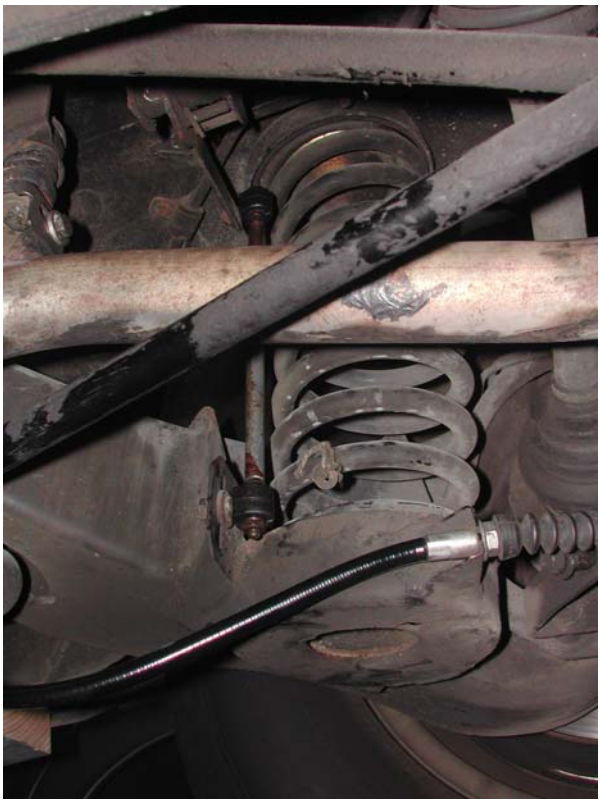
Those of you who have delved into the hydraulic pump fitments or examined the drawings of these gadgets will have realised that there is no seal between the pump and the central valley cover. If the plunger wears badly brake fluid can seep down into the engine and be lost forever. It probably has little if any effect on the engine but one professional pointed out a clue that this is occuring is that the cork seal on the underside of the oil filler cap takes on a prominent glaze. The pump failure of course will show up on a pressure check.

FROM THE HEAD TINKERER

Given the weight of our engines it seems highly improbable that they could move. Normally they sit on laminated blocks of rubber seen here on the left. This allows the engine to move within limits and minimise transmission of noise and vibration to the the main body of the car. Unfortunately heat and more probably leaking oil take their toll resulting in collapsed mountings which adopt the texture of jelly or hardened mountings that simply shear off as seen on the right. The worst case and one to keep an eye on is the front mount which if it is in the above form and allowed to rot can do some terrifying damage to the front end in the event of stopping suddenly.

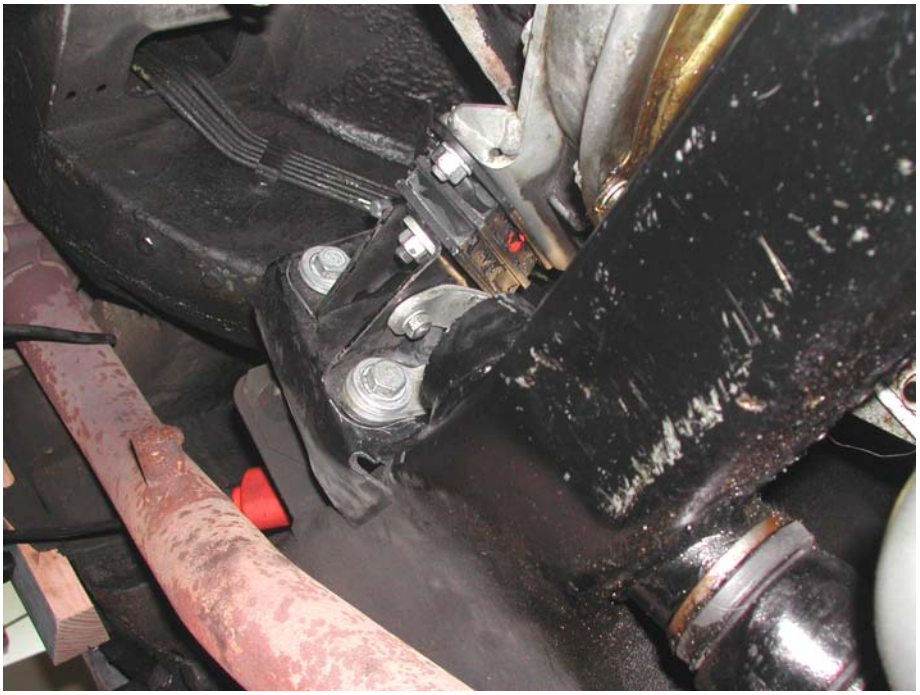
Another year has flown. There has been some progress in the small circle of cars in the district. Bill Coburn has collected a nice Silver Spur for Peter Chan and himself, Steve Crocker has rekindled interest in his early Shadow and has embarked on a voyage of adventure in his engine bay and we are looking for a local home for our lost friend Ken Glover's '83 Silver Spur. We are in the process of removing the heads on Steve's car at the moment and will be recording our efforts and methods for future tinkerers. Serious enthusiasts will be getting involved in lots of major jobs as our cars get older and accounts of our travails will be helpful to them; please remember that when you next do anything on your own car. Professionals do not have a history of leaving hints and tips behind

when they retire so as profound as their knowledge of our cars may be, it dies with them. I have an older car and am very grateful to past enthusiasts who took the time and trouble to record their experiences. We have the opportunity to be "the good old boys" for future self helpers and I for one will endeavour to leave my mark. I hope that you will do the same.



Next year, the Shannon's Wheels will be a challenge. I hope that each of our cars has a small blurb on the history of that particular car on the window for the public to read. One thing that makes your car so special is that people have cared enough to record its life (from the manufacture through to its sale and subsequent automotive life). If you would like some help in chasing up the history or putting it down on paper, Bill C. and George S. are quite happy to help.

We are having a very laid back picnic lunch at the Molonglo Gorge (just off the Sutton Road, near Queanbeyan) on the second Sunday in December. It will be a "bring your own" affair with one proviso. Please bring along a small gift (something you would be happy to have) for the lucky dip Santa Royce sack. An upper limit of $10.00 is offered as a guide line although anyone wanting to place a 3 tonne car hoist into the sack with my name on it will not be discouraged.



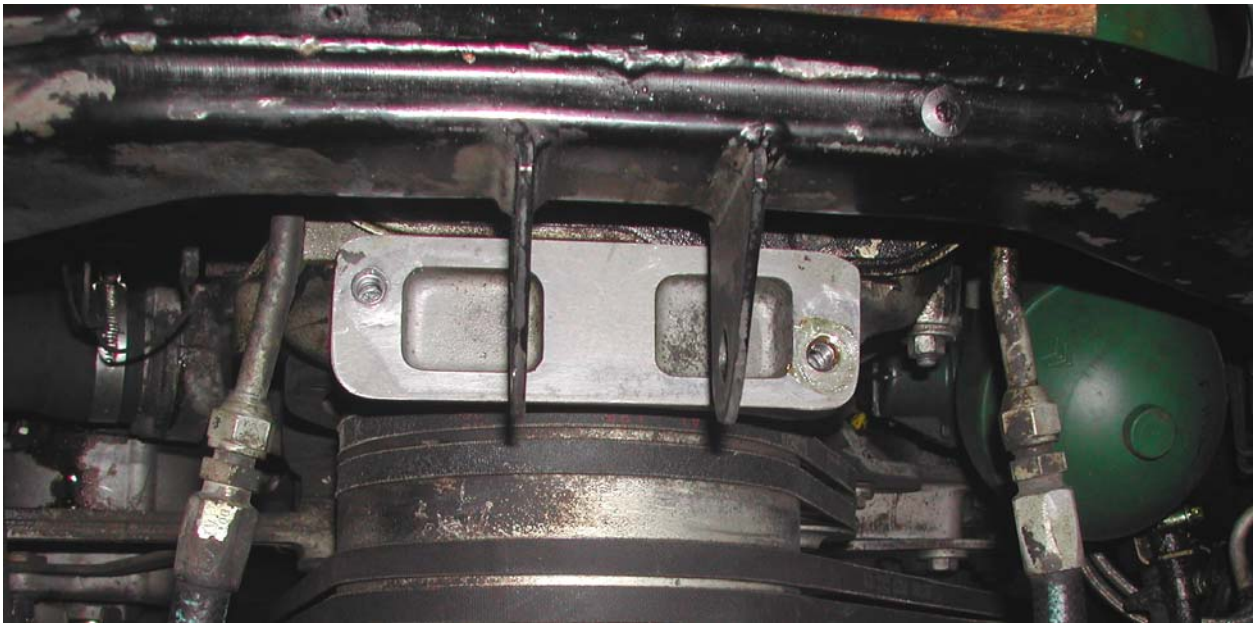
I hope to see you before Christmas but if not, have a safe and happy break and we'll see you in the Centennial Year of ' THE MEETING' . Cheers Laraine and George Shores.

KEEPING THE ENGINE IN IT'S PLACE

When I bought the Spur I noticed that the inspection had warned of faulty engine mounts. Always one to know better I happily logged up some very pleasant miles assured that the engine couldn't drop on the ground and that there were other tasks more important. One day on starting I sensed a very personal vibration coming through the steering column and probably the floor. Well the inspector had been right, the mounts were faulty so

much so that they had eventually sheared off and the whole engine had rotated in the subframe some degrees. I was reminded that many years ago a Club member sold an S series Bentley to another who on taking delivery set off with sublime confidence to sunnier climes. Pulling into a service station for fuel, the attendant (that is how old the story is) remarked that he didn't know Rolls-Royce made a slant 6 engine! Again the mounts. The new owner as I recall remarked that the accelerator seemed a bit stiff! It can happen to us all. The worst case is the front mount of the Shadow which rotted with oil will allow the engine to remain in mid air while the nose dives during a ferocious braking exercise and the fan proceeds to fillet the header tank and dismember itself!

Below is a picture of the footplate for the front engine mount. These were variously used on Spirits and Spurs but not for some reason on Turbo's. The cars used an eyelet mount which fitted between the the two projections seen below it. The former owner or his agent, mindful of engine alignment, jacked up the engine, sandwiched a couple of washers between the mount and the engine and bolted the lot up. Since there was insufficient thread holding the mount it managed to pull the helicoils out of the bolt holes. Fortunately fully repairable.



In the picture above can be seen the oil lines to and from the GM400 transmission with one of the hydraulic accumulators nestling to the right. The dirty mark on the front pulley is from a zealous Factory man hosing the underside of the car with thixotropic paint in the belief that it stops rusting!!

Another sad case and seemingly one of the last. I suspect this would be repaired or at least we hope so. I have been wondering lately how such an owner would fair getting a new grille? Is the small coterie of grille makers still in business?

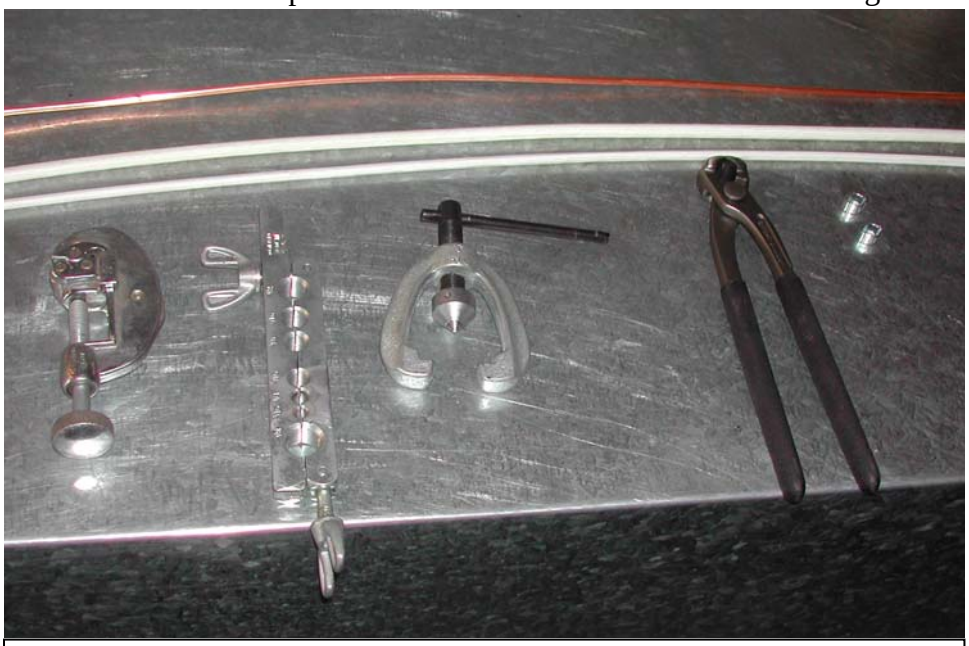
SHOWING OUR AGE

Our cars tend to hold their age pretty well but no amount of thought or planning will overcome

the ravages of our ultra-violet climate. The capping rails seen here on a ’87 Spirit are typical of the result and eventually will need the services of a good cabinet maker. In the meantime lifting shards as seen here can be carefully glued in place with water soluble glue such as Aquadhere (in Australia). Do NOT use contact adhesive lest you finish up with an awful mess!

MAKING STOVE PIPES

One of the most untidy bits on the vee eight engine are the stove pipes. These are the pipes that suck air from the intake stream, through a heat exchanger in an exhaust manifold and over the bimetalic coils that operate the 'automatic' choke. The resulting hot air causes the coils to expand and rotate the choke shaft opening the air intake as the engine warms up and leaning off the mixture. The pipe from the manifold to the bi-metallic coils obviously gets hot and to avoid people working on the engine burning themselves they (the pipes that is) are covered with insulation. It is the latter that wears or falls off and looks ghastly. Similarly, after years the pipes themselved will corrode through usually near the manifold and the system sucks cold air, the choke doesn't heat up and you suddenly find you are visiting your local garage for fuel far more often. Replacement pipes from the Factory are apparently made by HM on a Sunday judging by their price so the solution is to make your own. Having annealed both ends, flare one end of the pipe, thread a thick close fitting spring washer onto it which allows the nipple to get a good purchase, followed by the nipple(see right) and the fibreglass tubing, one inside the other. The latter gives a good thickness of insulation. Thread the two clamps over the fibreglass, then the other nipple, the thick spring washer and anneal that end. Using the

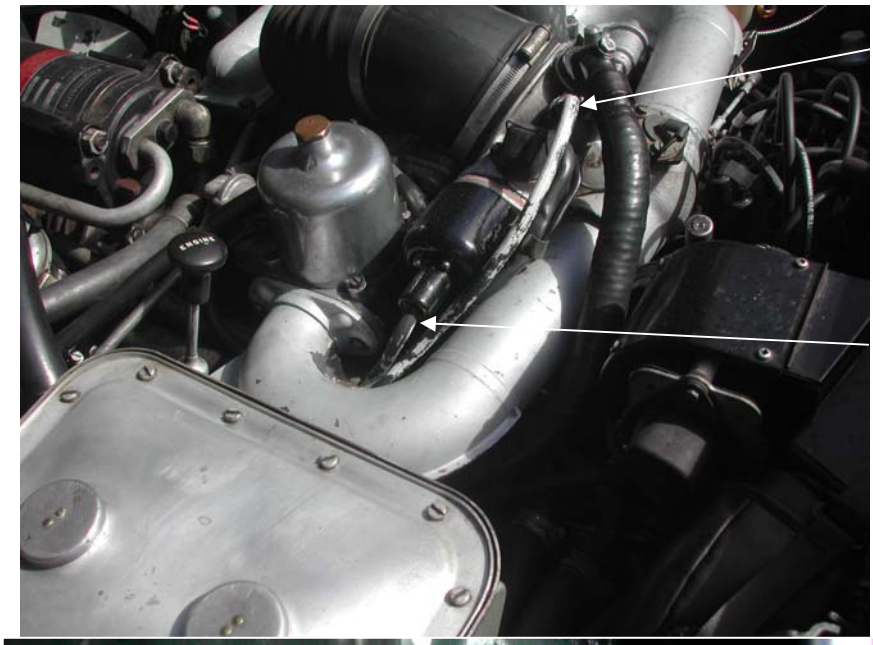


The basic gear needed. From left a pipe cutter, flanging tool and cramp, a crimping tool and crimps. At the top is the brass brake pipe and two diameters of fibreglass woven tubing available from any electrical wholesaler.

An essential step – annealing the copper pipe. The original stove pipe is fitted with a special shaped nipple which would have to be specially turned on a lathe. It is not necessary and in lieu the end of the pipe is flared to keep it in the retaining nipple. Annealing involves heating the pipe to a cherry red and quenching it in cold water. This softens the copper and permits the ends to be flared. A straight butane torch is not enough to heat the copper.

crimping tool squeeze the clamps evenly and bend the whole assembly to fit the engine. The only drawback to this scheme is that I have not worked out a method of colouring the fibreglass black to approximate the original asbestos cord. If anybody finds a dye please let me know, paint just peels off.

And here is the crimped tubing with the original nipple. The latter used to be a propriety line and may still be available from the likes of refrigeration engineers. Below is the finished result albeit with peeling paint. The Spirits which use HIF carburetters don't bother to insulate the intake pipe since that is always cold.



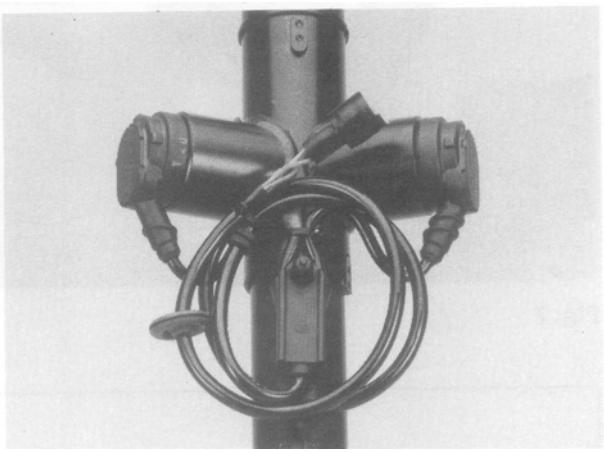
Air is sucked out of the main intake at this point, down the insulated pipe and into a heat exchanger in the exhaust manifold. Here it is heated.

This is the return pipe carrying the hot air into the round chamber where the bimetal coils are located.

The inlet and outlet pipes near the left hand exhaust manifold.

The heat exchanger

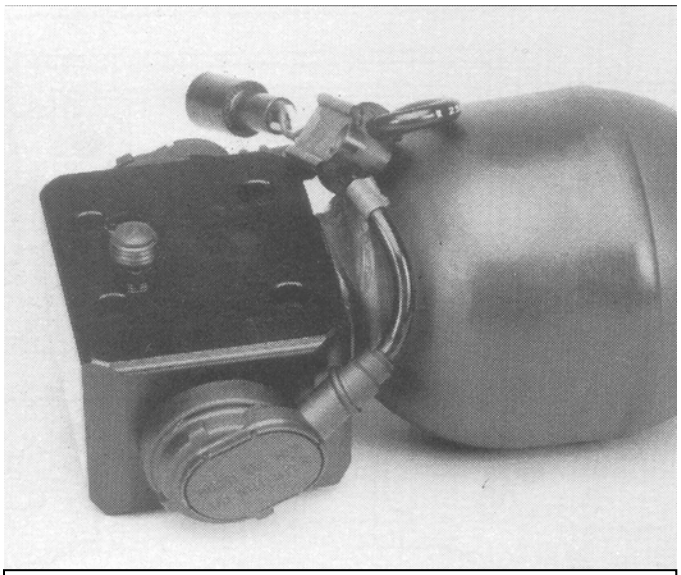
VARIABLE RIDE DAMPING



This is the first bit of the VRD, electronically controlled valves on the front dampers All 1990 model year four door Rolls-Royce and Bentley cars were fitted with an electronically controlled variable ride damping (VRD) system providing automatic selection from a range of three modes comfort. sport and normal.

The VRD system utiltzes essentially similar components and layout to the previous suspencsion damping system.

1990 saw the introduction of automatically controlled suspension via the hydraulic dampers on all four wheels. The Factory tinkered with this in the first days of the Shadow by sitting the car on four rams which sat on the coil springs. The rear system simply compensated for load changes in the car including luggage and fuel storage. The front end however employed an ingenious 'roll' valve which sensed the car's lean on a corner and jacked up the down side to keep the car level. It also catered for loading and provided lift to minimise 'dive' when braking hard. Of course the Shadow was not the first car on which the Factory tried suspension control. Way back in early thirties the rear shocks had their rebound valves altered by the driver by using generated oil pressure from the gearbox. The final version of this approach was in the Cloud series which used electric solenoids switched from the steering column. We have a Cloud III in Canberra that has the comparitively rare controller solenoids on all four shock absorbers. The effect with the 'Hard' setting is to stop mainly the back end 'bounding'.



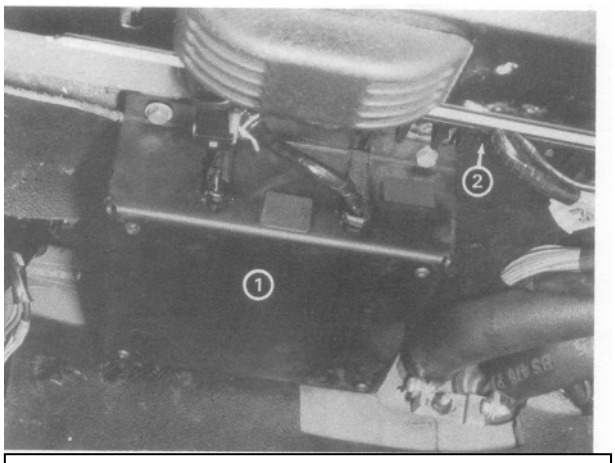
And in the back end we have this little box sorting out the performance of the gas springs and struts.

But back to the earliest Shadows. I actually drove one of these cars in Delaware when they were first imported into the United States. Being the first Rolls-Royce I had ever driven I was too impressed by everything to notice the ride and cornering. But well I remember the late Bert Ward's account of bringing the first Shadow from Melbourne to Sydney and recalling their horror after nearly turning the car over on two occasions. In short the system while ingenious simply didn't work.

The worst feature apart from the danger of capsize was the front rams not being employed for ages having their seals stick to the shafts and ripping themselves to pieces when they did move. And so the whole front end went conventional and eventually went to compliance mounting in 1970 and put on radial tyres.

There was little change in the cars' suspension until the advent of the Spirit in 1980 when as well as progressing to mineral oil struts and gas springs were introduced at the rear. The latter in my opinion produced the most perfect ride I have experienced other than perhaps the Citroen which dispensed with springs altogether.

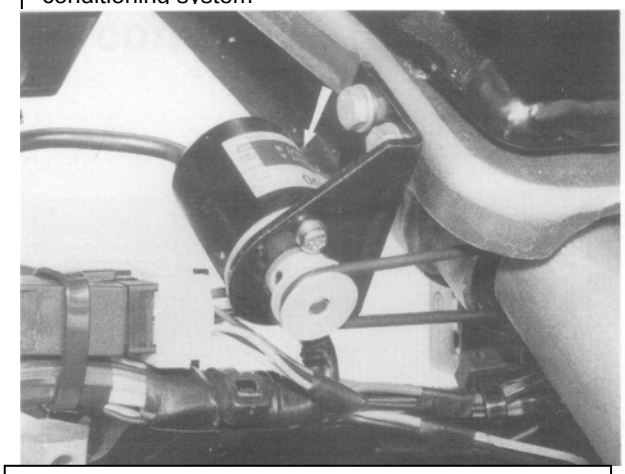
Our Lexus 4 wheel drive uses a similar system to the above and the effect of the three settings which we can dial at will is certainly very obvious. Rolls-Royce however was not prepared to allow mere mortals to control the comfort of the occupants and selection of the damping mode (comfort sport or normal) is fully automatic being controlled by two electronic control units (ECU). The first of these EW's is the 'System Contro1' which is located above the front passengers feet, and contains a micro-processor and three accelerometers to monitor vertical, longitudinal and lateral movement of the car.



The 'System Controller'. The ribbed gadget in front of it is the lower temperature sensor for the air conditioning system

The second ECU is the 'Power' unit which is located behind the fuseboard, and is connected to the 'System Controller' ECU by a short loom and multi-pin connector. The 'Power' ECU provides the output signal to the damper/strut solenoids to activate the appropriate solenoids as dictated by the 'System Controller' ECU.

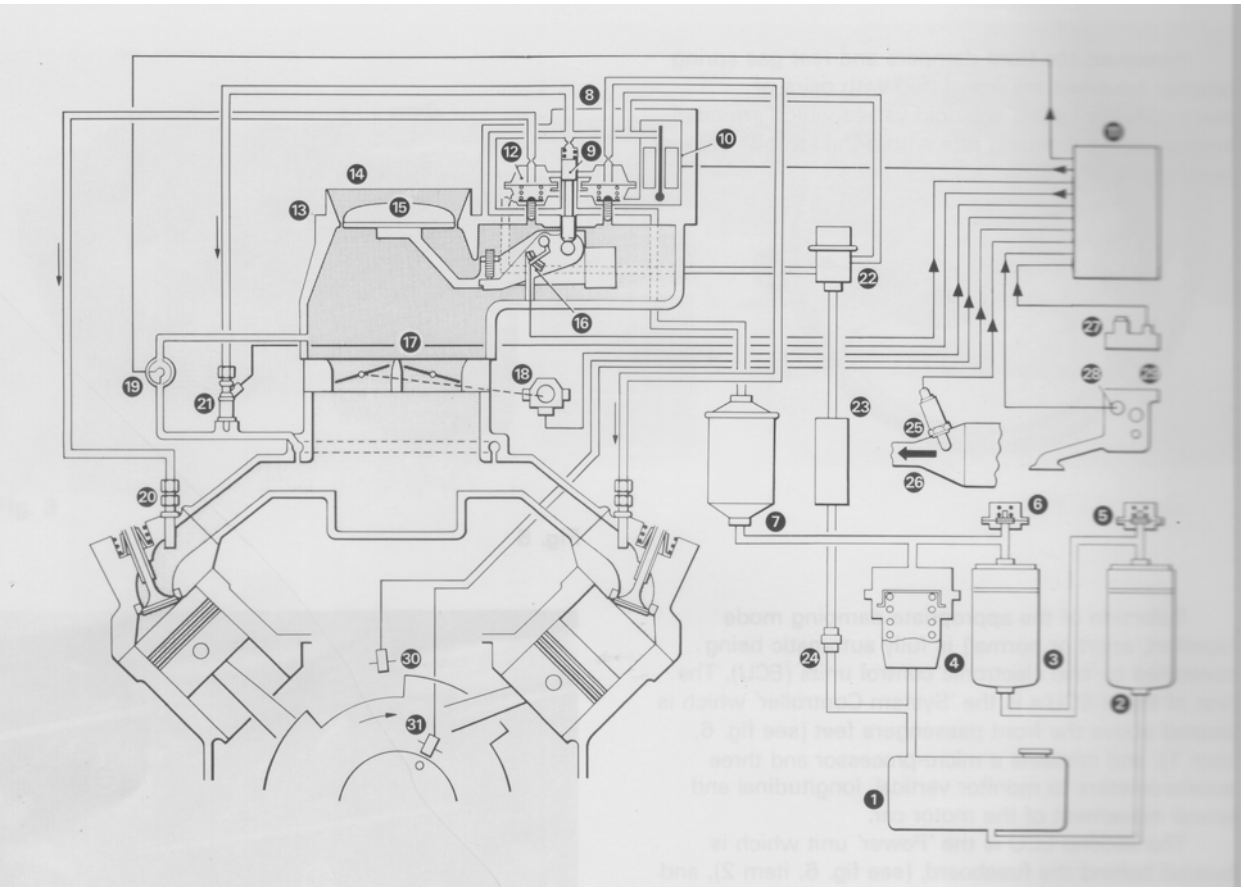
Other inputs to the System Controller include steering wheel rotation velocity via a belt driven driven transducer a road speed signal from one of the anti-lock braking system sensors and switching signals from the throttle position switch and brake light switch.
In the event of the signal to the solenoids failing for any reason, the system will select 'sport' which provides the greatest vehicle stability and indicates a system fault to the driver via a warning lamp. Also, the suspension remains in 'sport' mode below 3 mile/h to maintain ground clearance when manoeuvering and to prevent excessive 'squatting' of the rear of the motor car under hard initial acceleration.



The belt driven transducer

These fittings as marvellous as they are, are doomsday items as I see them. To ascertain the cause of problems requires special diagnostic instruments which only the dealers have. At the manhour rate they will have to charge, it will simply be uneconomic to fix the car and it will die a dusty dirty neglected death in a tin shed somewhere. Sad!!

ENGINE MANAGEMENT SYSTEMS All modern cars have them but some have them more than others. See the schematic over the page and contemplate.



KEY TO DIAGRAM

1 Fuel tank
2 Fuel pump
3 Fuel pump
4 Fuel accumulator
5 Fuel damper
6 Fuel damper
7 Fuel filter
8 Fuel distributor
9 Control plunger
10 Electro-hydraulic actuator
11 K-Motronic electronic control unit
12 Differential pressure valve
13 Air meter
14 Air cone
15 Air sensor plate
16 Air flow sensor
17 Throttle body
18 Throttle position switch
19 Idle speed actuator
20 Fuel injector
21 Cold start injector
22 Fuel pressure regulator
23 Fuel cooler

24 Non-retum valve
25 Heated oxygen sensor (catalyst equipped vehicles only)
26 Warm-up catalytic converter (catalyst equipped vehicles only)
27 Air pressure transducer (turbocharged vehicles only)
28 Coolant temperature sensor
29 Thermostat housing
30 Engine speed sensor
31 Crankshaft reference sensor.

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HEIGHT CONTROL VALVES AND THEIR LINKS

Shadows or Spirits, they have the same requirement – to connect the suspension to the height control valveso that movement of the wheels can be translated into pressure at the rams or in the case of Spirits in the struts. The link ends are simple ball and spherical housing joints packed with grease and enclosed with a rubber boot. The grease dries out and wear sets in. It takes 15 minutes to clean remove and re-grease the joints. Well worth the efforts. The picture shows the link for a Spirit, the Shadow is similar but is much shorter. The point to watch with the latter is that the operating lever should be secured. If it is allowed to drop it may disengage from the internals which will necessitate removal of the valve and re-setting. Final;ly if you go back to page 415 you will see a picture of the operating link on my Spur. I tried to caption that picture but it was not to be. Back to school it seems – for me!

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If undeliverable please return to Post Office Box 827 FYSHWICK 2609 ACT AUSTRALIA