

TEE-ONE TOPICS

Number 36 June, 2004

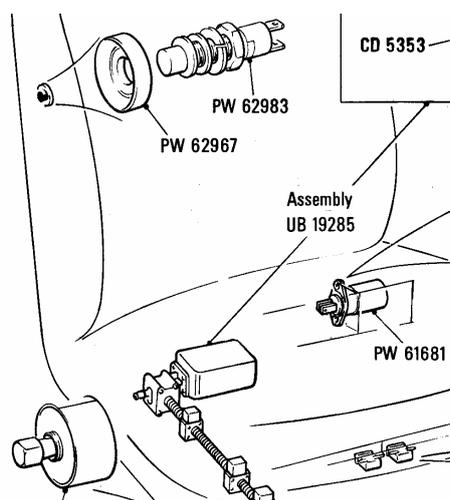
CAMARGUE SOLENOIDS AND BACK SEAT ACTIVITIES!

Mark Herbstreit has acquired one of our few Camargues – one of the quietest cars the Factory produced after the war. Being a two door body it is fairly desirable that the rear seat passengers can exit particularly when their seat supports are on fire as in a rear end collision.

Normally one lent forward, pushed a discreetly placed button on the side of the forward squab, there was a quiet click and the assembly would hinge forward. If that failed reaching under the bottom of the squab one found a lever which pushed to one side achieving the desired unlocking!

Actually I recall 'doing' a wedding in one of these cars and getting to the Church late with the Mother in Law who panicked so that not only did the squab get unlocked but in her haste to witness the betrothal she slid off the rear seat landing on her back on the floor with her legs in the air like a stranded cockroach. All she could do was scream at me to get her out. Being young as I once was, I was somewhat transfixed by the spectacle of such fine lingerie surrounding a pair of mature but shapely legs waving frantically in the air. A distinct increase in the screaming level broke my fantastic reverie and diving between her thighs, avoiding the flailing hooves I grabbed her by the shoulders and lunged backwards. She was not slight but neither was she buxom and the net result was me lying on my back on the ground with her virtually kneeling on my chest. With a great imperious snort she lurched to her feet straightened her attire and fled up the path to the church. I have never seen her again. To my astonishment I did get paid by the Best Man and have often wondered what account she gave him!

Anyway it really is Mark's story. It is always rewarding that one so young will have a go at keeping these strange machines on the road!



The general diagram from the spares schedule showing the squab switch and the neat and obvious place to install the seat switch.

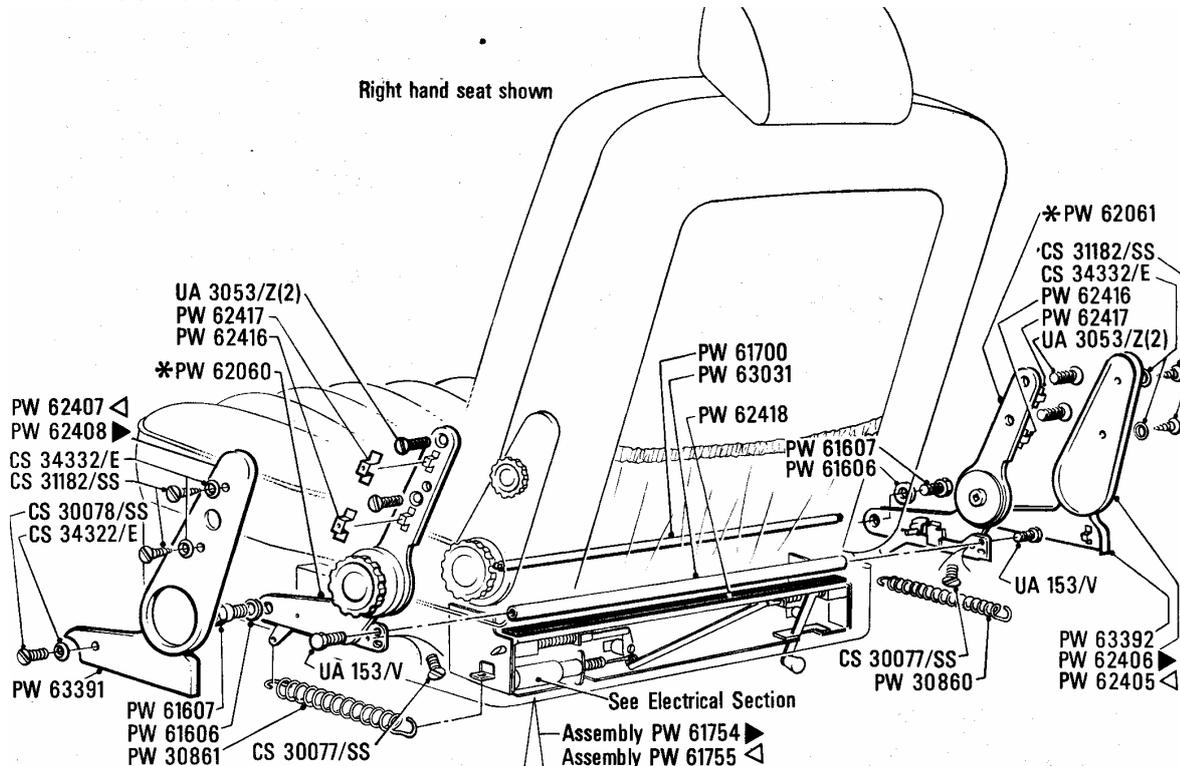
According to the service records of my Camargue, the electric seat release solenoid on the passenger side had failed some years ago. The previous owner had obviously decided that using the manual override was easier than having the thing fixed.

The solenoid was removed. The body was carefully uncrimped with a screwdriver revealing a fried mess of copper wire. The position of the old wire was noted and unwound with the number of turns counted.

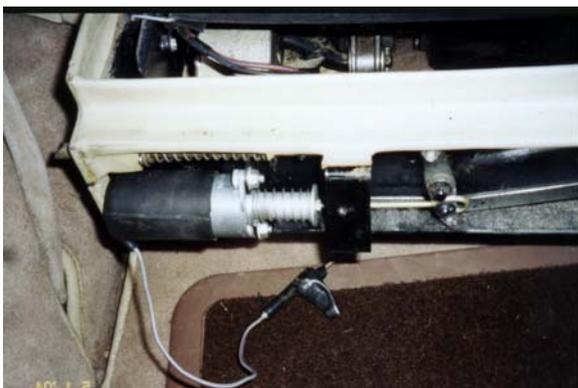
The solenoid is comprised of two coils. One is a 200 turn heavy current coil to initially release the seat mechanism when the button is pushed. The second coil is an 800 turn light current coil to maintain the mechanism in the release position. The high current coil is switched off by a contact that is operated by the armature as it bottoms in the magnet. The reason for the meltdown was probably due to the plastic pin that operates the contacts catching and not

switching off the high current

Rewinding was done with the use of a 3mm x 30mm screw through the spindle and held by a battery drill. A white mark was placed on the chuck of the drill to facilitate counting of the new wire. The coils were wound in the same direction. 200 turns of 22 B&S/0.63mm wire, then 800 turns of 30 B&S/0.25mm wire.



The plastic pin that operates the contacts had melted so a new one was manufactured from the end of a number 8 knitting needle. (I assure you I don't knit!). A little bench testing was needed to get the right length so that the contacts opened fully when the armature pressed on the pin. Otherwise I would have had the original problem of the high current coil remaining on.



The coil was reassembled in the housing and the leads were soldered onto the terminals. The outer sleeve was re-crimped around the body and the solenoid remounted in the car. Using an ammeter in the power lead the current should be 3-4 amp. If any part of the mechanism prevents the armature from fully pulling in, the high current coil will pull 10 amps. If this is held for any length of time a meltdown may occur.



Dismantled with wiring removed.



THE DIET

Gerard was terribly overweight, so his doctor put him on a diet. The Doc said, "I want you to eat regularly for 2 days, then skip a day, and repeat this procedure for 2 weeks. The next time I see you, you'll have lost at least 5 pounds."

When Gerard returned for the next visit, he shocked the doctor by losing nearly 60 pounds!

"Why, that's amazing!" the doctor said, "Did you follow my instructions?"

Gerard nodded. "I'll tell you, though, I thought I was going to drop dead that 3rd day."

"You mean from hunger?"

"No, from skipping."



EVERLASTING CAR BATTERIES

Many years ago one of the foundation members of the ACT Branch Bob McCulloch, the owner of a rare Hooper bodied Silver Dawn, used to regale us with accounts of the battery in his car. Seems it was the original fitting. Given that it was the late seventies and the car was built in 1954 it was a fair claim. True the car would crank over very nicely. But then I had to borrow the vehicle and went to start it one cold Canberra morning. Plenty of cranking, plenty of choke and fuel but not a single catch to start.

Jumper leads were applied to the battery from my then Holden and VROOM off she went. Well this story repeated itself this week with a very nice S2 with precisely the same problem. A new battery and she is straining at the leash. The message is clear when a battery is nearing 3 years of age, the first sign of hesitation, get it tested and the second sign replace it. The cars are very heavy to push!



SOME CAUTIONARY STATISTICS

Mr Hulls said yesterday that NSW, despite having a larger population than Victoria, had recorded three fatalities (involving car jacks) over the three years. The remaining two deaths occurred in Tasmania and South Australia. Mr Hulls had asked for feedback from the RACV, the Victorian Automobile Chamber of Commerce, Victoria Police and accident researchers.

He said a 1998 inquest into two deaths had found that, in both cases, the failed jacks had not met Australian standards. Many car jacks now in use may soon not meet standards because a new Australian standard is about to be introduced. Automobile chamber of commerce executive director David Purchase said the coroner's statistics were alarming. He said the chamber was trying to determine if the deaths resulted from work-related incidents or do-it-yourself home mechanics. "Our view is not complete but it's far more likely to occur with the use of a (hydraulic) bottle jack or trolley jack," he said. He said a review of the national standard for car jacks had recently been completed and new standards would come into force on December 1. Inadequate or non-existent signage had already forced the recall of jacks supplied with some models of BMW and Hyundai cars. RACV chief engineer Michael Case said other research had found many non-fatal accidents resulting from the use of car jacks.



WATERLOO

Bill Coburn advised me that the Citroen and Morris Minor clubs here in the ACT were organizing a joint event and were encouraging all local members with such cars to join them in a “Waterloo Day” Franco/British celebration. As the Terribly British Day had been a bit of a fizzer, I enthusiastically agreed that we should take this opportunity to indulge in some ‘flag waving’. What better than to represent the ‘best of British’ with (what else?) ‘the best car in the world’.

What started as a pro technical plan to focus on the hydraulic similarities the Silver Shadow series shares with several models of Citroen was scrapped when Bill pointed out that it may be more inviting to local branch members if we made absolutely no reference to either Tee One or to any technical overkill. We agreed and Bill sent out invitations through various channels including and particularly to branch members. It must have worked because we had more ACT branch members than any other group turn up on the day.

Astoundingly, word came back that the editor of The Capital Letter chose not to publish a report on the event as “there was no one there who actively supports the Club”. Unfortunately, the editor was wrong on two accounts. Firstly, many of the participants are very active Club members. Hold on, perhaps he meant “branch” rather than “Club”. No, even that doesn’t hold up because I saw Bill and Warwick and Peter and another Bill and Ken there and they are all current branch members. Most of the afore-mentioned have been very active function and event attendees. An expressed concern that publishing such a report may “incite sharp comment” is more to the point. Are there still members who are looking for “reds under beds”??? When will people realise that it is time to move on? Who, other than the horrified few, even care?

I also read in the minutes of a recent meeting of the ACT branch that one member noted that they were ‘relying on an ever diminishing pool of regulars to support events’ as were other clubs within the ACT. I am sure there is a waxing and waning of interest shown by members of all motor car clubs and most will survive the fluctuations. Perhaps now is the time to ask whether there is enough emphasis on the cars themselves. Are people being actively encouraged to become familiar with the workings of their cars and urged to use them more regularly? Are they encouraged to show them to the public and to share their acquired knowledge? Are new comers being guided in the ways of good mechanical maintenance and repair? I was once told “Ask not what your club can do for you, rather what can you do for your club.”. I pondered the point and concluded that the statement showed yet again that the member was focusing on the “regulars”, those who have been around a while, but not at all on the new members. Why should new members show loyalty from the start? Blind loyalty is worthless. Belonging to a group who share a common bond forms a very strong union. Brothers-in-arms? You betcha!

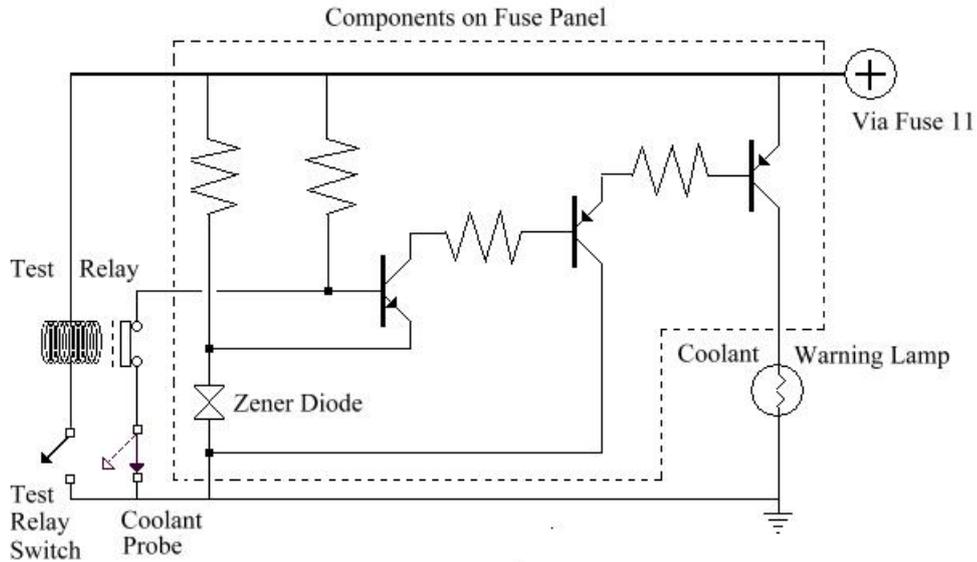
Oh yes, and I wish that those “disappointed” members would get the message that Bill Coburn is not the organizer of ‘an external group’ . in fact, he spends more time trying to modify the behaviour of less temperate enthusiasts who are heartily sick of the parsimonious attitudes shown by those who will not or can not move on.

George Shores.



John Kilkenny has shared again some of his skills with us on two very familiar features of the Silver Shadow. Hopefully the diagrams will give the owner some understanding of the principles involved.

Shadow 1- Coolant Level Warning Circuit



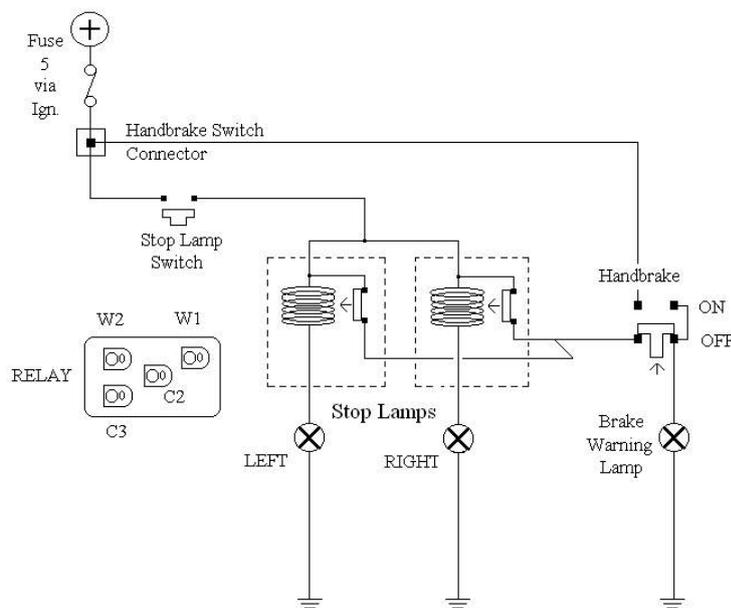
Operation :

If the coolant level drops below the coolant probe in the top tank, the coolant probe switch will open. This will allow base current through the first transistor which in turn switches on the following two transistors to illuminate the Coolant Warning Lamp on the dashboard. The lamp will also be illuminated if the warning lamp test button is pressed.



Shadow 1 Brake Light Failure Circuit

The Stop Lamp Warning Relays are fixed to the body frame behind the side panels in the boot, one adjacent to each rear lamp assembly. With the ignition on and the handbrake off, depression of the brake pedal will close the Brake Lamp Switch, allowing current to the two stop lamps via the relays. The low resistance of the relays has a minimal effect on lamp intensity. If one or both of the lamps are open circuit, the appropriate relay will not energise, which will switch on the brake warning light via the



closed relay contact.

John points out that this use of transistors (in 1965) on the Shadow 1 (sic) was fairly up-to-date use of technology.



FOR MY FRIENDS

Three retirees, each with a hearing loss, were playing golf one fine March day. One remarked to the other, "Windy, isn't it?" "No," the second man replied, "it's Thursday." And the third man chimed in, "So am I. Let's have a beer."



Two elderly ladies had been friends for many decades. Over the years they had shared all kinds of activities and adventures. Lately, their activities had been limited to meeting a few times a week to play cards.

One day they were playing cards when one looked at the other and said, "Now don't get mad at me.....I know we've been friends for a long time....but I just can't think of your name! I've thought and thought, but I can't remember it. Please tell me what your name is." Her friend glared at her. For at least three minutes she just stared and glared at her. Finally she said, "How soon do you need to know?"



Eighty year old Bessie bursts into the rec room at the retirement home. Holding her clenched fist in the air and announces, "Anyone who can guess what's in my hand can have sex with me tonight!!"

An elderly gentleman in the rear shouts out, "An elephant?" Bessie thought for a minute and said, "Close enough."



Three sisters, aged 92, 94, and 96 lived in a house together. One night the 96 year old draws a bath. She puts one foot in and pauses. She yells down the stairs, "Was I getting into or out of the bath?"

The 94-year-old yells back, "I don't know. I'll come up and see."

She starts up the stairs and pauses. Then, she yells "Was I going up the stairs or down?"

The 92 year old is sitting at the kitchen table having tea, listening to her sisters. She shakes her head and says, "I sure hope I never get that forgetful." She knocks on wood for good luck. then yells, "I'll come up and help both of you as soon as I see who's at the door."



Regarding the nostalgia of external switches for tail lights I seem to remember that the reason was so that the driver was able to confirm they were working.

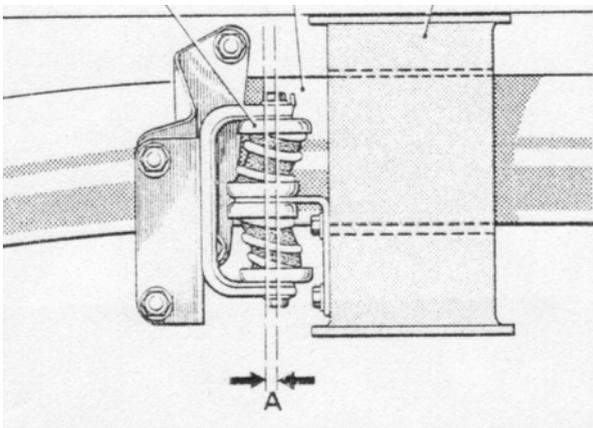


ON DYING, OLD HANDS AND EXHAUST ALIGNMENTS

Bill Fleming

In the old days people simply died or were killed. The dying might be elaborated as in 'after a short illness', while the being killed might be widened to encompass 'when thrown from his horse' or 'drowned while fording the Molonglo in flood'. And dying 'of old age' cut in at about 55 years. Now we tend to live longer, with the killing vividly splashed across our screens and the dying described with full attention to all relevant medical details.

I am no longer in the first flush of youth and am somewhat old-fashioned. To enquiries I am



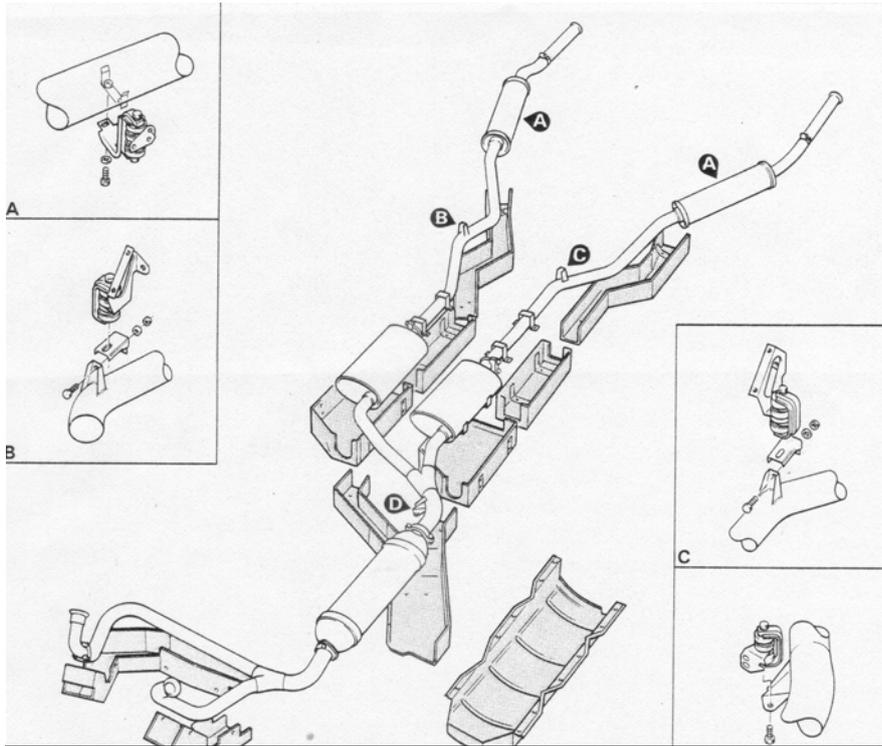
Here we see a cross section of the dreaded 'hole' which bill refers to. The spring bracket, first introduced on the Silver Cloud III seen to the left of the cross member was an expensive but very nicely designed means of putting an exhaust system where you wanted it. They can become grossly distorted but despair not, remove them and with a little care can be taken to pieces, bent back to shape and reassembled. Note the indication in the drawing about offsetting the mount when cold. Work out which way by determining that the engine can't move but the rest can so when the pipe heats up and expands it will move rearwards and all will line up. Dimension 'A' is actually $\frac{1}{4}$ ".

'very well, thank you' even though I may be feeling somewhat off-colour or on the very verge of death, and inwardly wondering about real or imagined maladies that I prefer to keep to myself. This approach has the advantage that it discourages do-gooding stickybeaks; among the disadvantages is a tendency to carry the approach into things inanimate - motorcars for instance. A person inquiring 'what's that tapping sound?' is rewarded with an icy stare and the Nelsonian rejoinder 'I hear no tapping', while persistent enquiries as to the source of the oil pooling on the roadway beneath are met with the (now ludicrous) threat of violence.

So for some 12 months from first detecting and ignoring noise from the front muffler of my Silver Shadow to the stage that Bill Coburn (who has very acute hearing) took it away from me and had a new Rolls-Royce muffler fitted, I denied the existence of the increasing roar. And I was very begrudging to Mr Coburn when he returned it, admitting to only a slight diminution of sound. The new muffler snuggled under the passenger's seat in all its glory (rather like those

new hips and knees and things that my generation is now favouring). And I draw to your attention a hole in what I would refer to as the chassis cross-member through which the exhaust pipe itself leads. That hole becomes a central player as this tale of mystery unfolds.

Because you see, what even the keen ear of Mr Coburn could not detect, as he smugly gave the car back to me, was a tiny ticking sound that emanated from that area under certain circumstances, faintly apparent when starting with the automatic choke in play, and more audible when backing up a steep driveway.

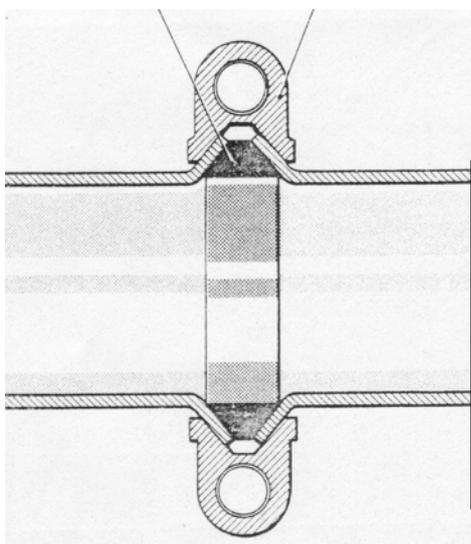


Well may Bill Fleming regard in awe the complexities of the exhaust system of his car but the above is the general layout for a Silver Spirit. Notice the covers beneath much of the system. Legend has it that a Rolls-Royce for reasons of which I am not aware, departed from the road somewhere and flung itself into a very large field of wheat. The car was apparently fitted with catalytic mufflers. These under the influence of extra oxygen getting very very hot, the most obvious occasion being when the car runs out of petrol. That is why these cars have a light labeled 'Oxygen Sensor'. Anyway back to the wheat field which apparently was very dry and ready for a bumper cropping. The wheat inevitably got caught up in the (then) unshielded exhaust system and conflagration ensued in a spectacular way. That's why they then fitted shields

I the first instance, by the time one left the driving position and walked around to the near-side to check, the sound had ceased; in the second instance leaving the driving position and walking round to check seemed to entail an unacceptable element of risk. So for months I simply 'didn't hear' the sound even though (and here I am in confessional mode) it got progressively louder.

And then for a festive family occasion I lent the car to a son-in-law for a journey entailing some driving over corrugated country roads. From his somewhat restrained demeanour on return I deduced that all had not gone swimmingly, but (either in terror or having learnt from me) he

assured me 'everything was fine' and he had 'enjoyed it tremendously'.



Of course when I next started the car the noise was very pronounced and I was able to get to the source before it ceased. By pushing upwards on the muffler (only just pleasantly warm) I was able to stop it. The exhaust pipe

The flared clamped joint to which Bill referred. Although ideally the joint sits perfectly as in the diagram, as Jim found out a little movement is possible to avoid the 'Drums of Crewe' beating out their message beneath your buttocks! Any exhaust system that involved pipes through chassis members was always a problem. It was well known that even the genuine beautifully made pipes supplied for replacement by the Factory frequently had to be heated to a cherry red and bent to get a good fit.

was tapping against the bottom of that infernal hole. And yes by Jove, by now I could 'hear' the noise. And so it was back to the muffler

people. The man who had fitted it had moved on, but they'd 'have a look at it and see what they could do'.

The pipe by now was bearing against the bottom of the hole, which evinced much head shaking and sucking-in of breath, The foreman finally pronounced 'this spring has lost its zing',

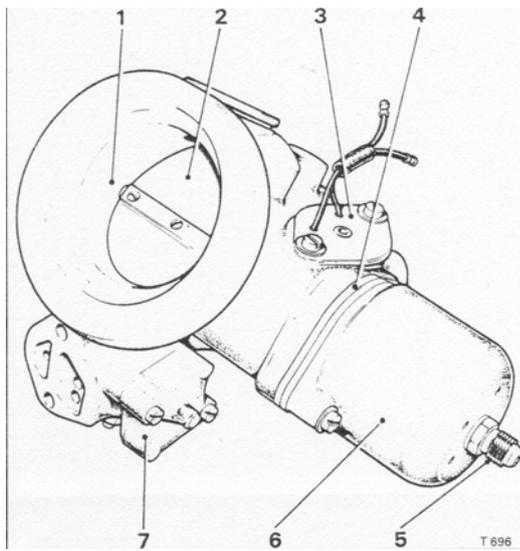
demonstrating by levering the muffler up how the spring support was incapable of holding the pipe central. It might perhaps be able to be shimmed up, but that was difficult; it wasn't like anything fitted to other cars; perhaps the best approach might be to get a new spring assembly from Rolls-Royce. 'Oh', I mouthed faintly. But then he suggested he might just get the boss to look at it.

The boss came out, coffee mug in hand, took one look and said 'Jim, slacken off that nut' Jim did so. The boss pushed up the pipe with his elbow without spilling a drop and said 'now tighten it'. Jim again complied, and as they say, or used to 'Bob's your uncle'. It's just a simple circular clamp which allows the pipe to be moved within it so as to be located central in the hole in the cross-member, and then clamped tight with the coil spring attachment forming a very Rolls-Royce suspension.

The foreman had been exposed to a small sample of Rolls-Royce engineering, the boss with his free hand waved away any suggestion of payment, and I drove happily off. None of us heard a sound.



CHOKING

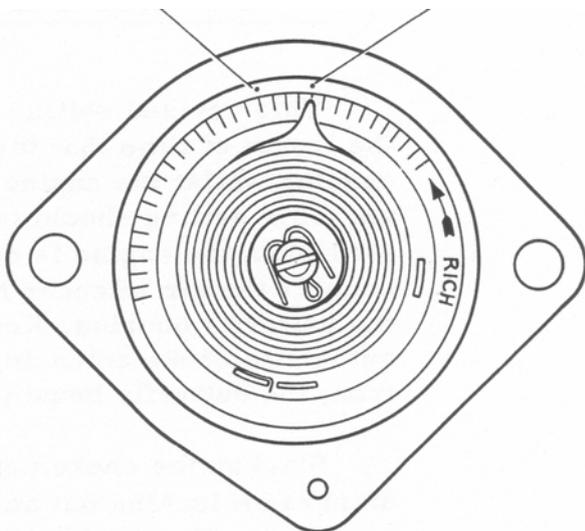


Winter is here, pathetically mild by the standards of some of my North American readers, but cold enough to show up starting problems. I have had three of these in the last two weeks. Crank crank crank, a

This is a general view of the choke albeit on a later car. The idea is for the butterfly valve (2) to shut and stay shut when starting a very cold engine. The thermo coil spring is in the housing (6) and the solenoid to hold the butterfly shut is at (3). Air is sucked past the thermo coils through the nipple (5) having passed through an exhaust manifold and been heated up.

slight cough, nearly caught, starter off pause and try again. I have come to realise that more starters are wrecked this way than are generally realised. And it

seems to be all caused by mal-adjustment of the choke. Some owners are paranoid about the choke – sure it pours fuel into an engine which is usually ill equipped to handle the dilution of lubricants, the smell and the smoke. So many owners given that a lot of them live on the Eastern seaboard in this country, lean up the



A view of the bi metal coils. Early vee eights had double coils which reverted to single coils in the Shadows. The punch marks are the settings designed for the cars. In this particular case for an S2 it was decided to lean the mixture by 4 points.

starting mixture and set about destroying the starter. And worse still every time that starter pinion smashes into the flywheel or drive plate, a little bit more metal is taken off.

But we can't all live in temperate zones so let's have a look at how the choke system works. Owners of fuel injected cars can switch off here as their approach to cold starts is very different. A cold engine needs a rich mixture, that is a lot more petrol than we normally use relative to the amount of air being sucked into those pipes! Our modern friends with fuel injection achieve this by squirting extra juice into the in-pipe but with an SU carburettor there is no practical squirter so the answer is to cut back on the air or choke it off. The engine sucks madly and gets plenty of petrol but little air so the end result is ideal for starting.

The choking is not done by strangling the air intake ducting although that would probably work, but Mr Royce and his merry men fitted a swivelling plate in the air intake which when swivelled far enough, completely blocked the in-hole! Many of us are old enough (sorry for the liberties) to remember pulling a choke button out on some cars when starting a cold engine. This action performed exactly the same task and shut off the air intake to give a very rich mixture. When the engine started you pushed the choke in a bit otherwise the poor old thing would drown in fuel and conk out. If this happened the next step was to push the choke right in and floor the accelerator then try starting again. The carburettor intake would be full of fuel but the air intake would be wide open allowing the mess to be quickly sucked into the engine. When the fuel/air ratio got to digestible levels the engine would start with a roar and if you were good you would gingerly ease the choke out enough to keep the thing running until the whole thing warmed up enough to allow the choke to be pushed home again.



Well in the mid fifties the Factory got the message from across the Atlantic that drivers did not want to acquire the above skills and the era of automatic chokes came in. So rather than have some electronic gadget pull the choke out the designers put a fancy coil spring on the end of the shaft that the swivelling plate swivelled on in the air intake. The spring was fancy in that it was made of two strips of different metals forged together. When the spring was heated one metal

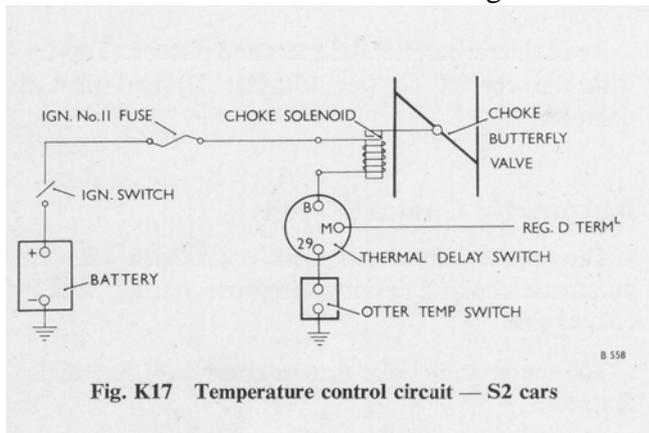
tried to expand faster than the other and the spring very quickly partially 'unwound'. By wrapping the inside of the spring around the shaft of the swivelling plate and anchoring the other end, the shaft was turned by the spring as it was heated. The heating by the way is done by sucking air through a heat exchanger in one of the exhaust manifolds then over the coil spring then into the air intake. When the engine is stopped, the spring cools down, the choke closes and the system is ready for the next cold start.

At the top of this rambling story I mentioned leaning off the mixture. This is achieved by moving the anchor point of the spring so that there is less tension to shut the air intake.

Now comes the point of all these words (whew). The air intake is so strong with nearly seven litres of suck dragging the air in, the swivelling plate (actually called a butterfly valve) gets dragged open to let more air in. This weakens the mixture and obviously doesn't help to start a

very cold engine. So the merry men devised an electromagnet to hold the choke shut, hard, at low temperatures. In the picture above the two wires feed the solenoid under the little black domed cover. This particular thermo coil was set as lean as possible apparently in Sydney during a service. In Canberra however there is simply not enough choke to get the thing going. Now you all know the drill, turn on the ignition, then put on your seat belt check your hair, teeth and fingernails, meanwhile the fuel pumps are filling the float bowls and the recirculating fuel lines (yes, you Spirit owners, that screaming Pierburg pump also needs to fill the system up before you start) and then you push the accelerator down and hear the choke set itself on the air intake. The butterfly is closed. If it is below about 15°C the electromagnet will grab the end of the butterfly shaft and hold it until the engine starts. The poor old dear then shudders to life and the alternator starts sending out lots of electricity which heats a coil in a little switch through which the current to hold the choke shut passes and when the switch windings get hot enough they break the circuit, the choke butterfly valve is released, the valve jumps open and the engine struggles to get a good gut full of air and start running reasonably.

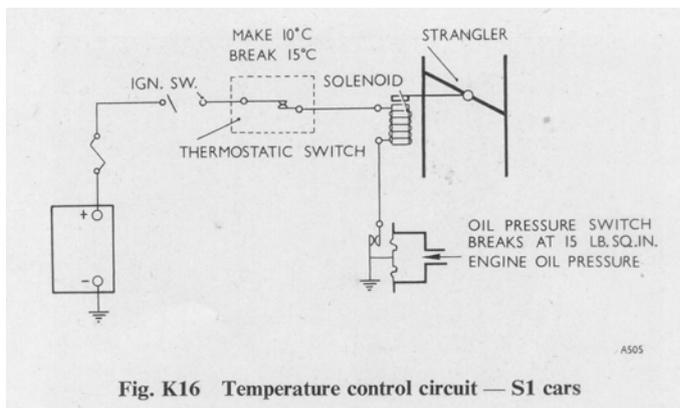
Now if you live in a cold climate and your engine is hard to start cold make sure all the above is working. A crude solution is to have somebody start the engine dead cold while you hold the external lever of the choke down hard. If you get instant results then it would seem that the electromagnet is not being switched on or the thermo coils are set too lean. This can be proved by simply turning on the ignition when the engine is very cold and checking using a test light that there is current at the terminals of the magnet. If there is not, there are two switches to check. One is an Otter switch which closes at about 15°C and the other is the Scintilla or thermal delay switch which closes shortly after the engine is switched off. It is the latter switch which breaks the current when the engine starts. All very simple isn't it!



This system is used on the vee eight engines. On the in-line six cylinder motors; installed in the post-war Bentley Mk VI's and derivatives and Silver Clouds and derivatives an oil pressure switch turns off the solenoid. I think this was found to be a little slow and alarmed drivers wondered whether their fully choked gasping engine was going to die never to run again. Hence the adoption of the 'Scintiller' switch – the name I think relating to the manufacturer.

The more youth-challenged readers in Australia will recall the word 'scintilla' being brought into the argot of the day many years ago when the then Minister for the Army, the late Phillip Lynch declared that there was not a scintilla of evidence to prove the then opposition's claims at

question time. Unfortunately there was. We have all forgotten the circumstances but not the word. Ah! the good old days – remember Bob Hawke's highlighting the word 'resile' never before heard in Parliament but nowadays on everybody's lips. But I digress!



Silver Cloud II's and derivatives had to have a pretty quick modification to the thermo coil area. When the engine was switched off the whole assembly being of

light fabrication cooled off very quickly including the coil(s) so the choke was back on even though the engine was hot enough to burn yourself. The mod involved surrounding the coils with a heat sink a cast lump of metal that held its heat for a long time. The pipes feeding the choke mechanism as you know were coated with the dreaded mineral asbestos. I always assumed this was to stop fools like myself burning the wrist etc when poking around a hot engine. I was wrong. Seems that if you are given to belting the old Cloud III down the Autobahn at the magic ton on a cold day the hurricane of freezing air getting into the engine department could chill the choke mechanism including the pipes to the extent that the choke would come on.



ONE SHOT WINDOWS

You know how it is coming into the parking station and trying to hold the window switch down so that you can reach out and grab the ticket and meanwhile guiding the car through a veritable slalom. Early in the nineties the Factory fitted 'one shot units' to the driver's window switch which allow you to push the button and the window would find its own way to the bottom. HELP IS AT HAND. Apparently there is a kit now manufactured initially for Porsche's which virtually clips in. Martin Taylor of the NZ Club writes about the gadget and many of us will undoubtedly be interested.

Most modern cars have an auto function on the driver's side power window (this kit will also work on the passenger side window). This is very convenient when entering parking garages and toll booths, grabbing a quick bite at the drive thru, or when closing the window exiting the car. I certainly missed this feature in my 944. This kit will work in any positive switched vehicle (both motor wires at +12v when the motor is at rest).

How the unit works

Automatic operation - Press switch in the up direction and release. The window will travel up until it is fully closed. Press switch in down direction and release. The window will travel down until it is fully open.

Partial operation - When window is travelling up press the switch down momentarily. The window will stop where it is. When window is travelling down press the switch in the up direction momentarily. The window will stop where it is.

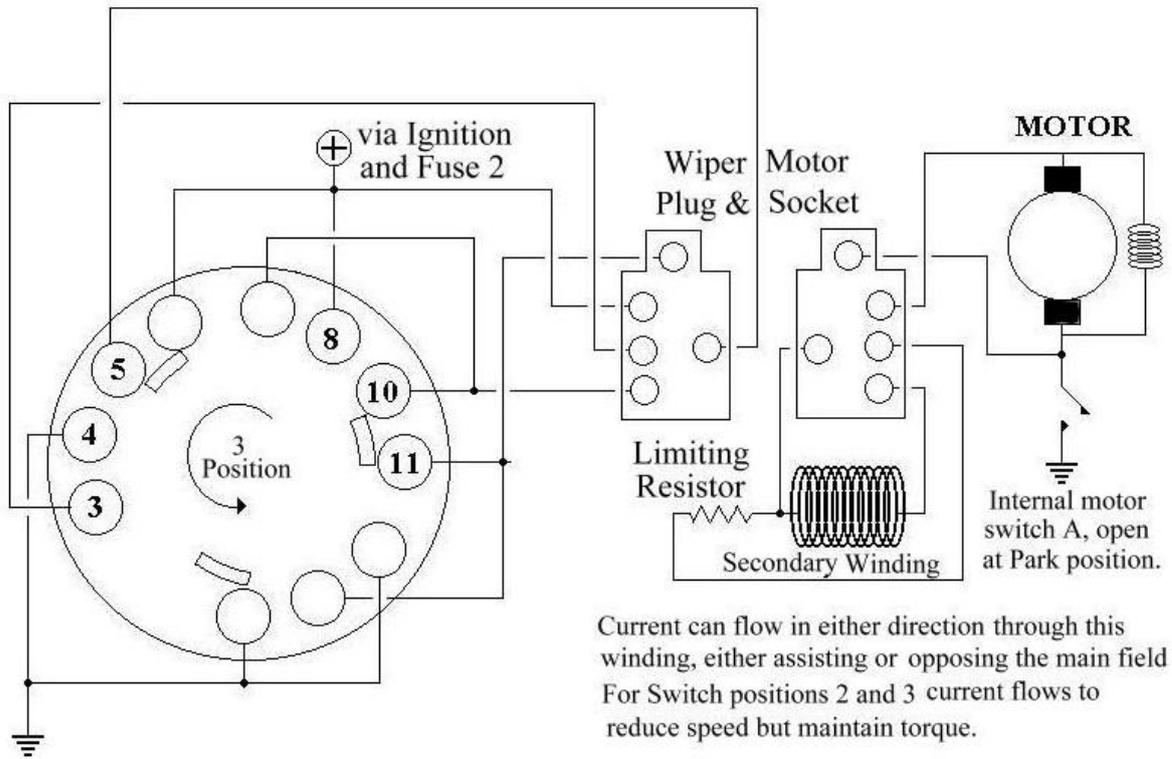
Safety - If the window is obstructed during its travel it will stop when stalled as if it had reached the end of its travel, this is a safety feature that operates if you get an arm or hand caught etc.

Construction - The circuit is built on a professionally etched fibreglass circuit board and is sealed in a plastic box. What is really neat is if a second unit is installed on the passenger side, it will automatically work from both the passenger side AND THE DRIVER'S side switches. **One unit will control one window.**



Shadow 1 Windscreen Wiper Operation

John Kilkenny

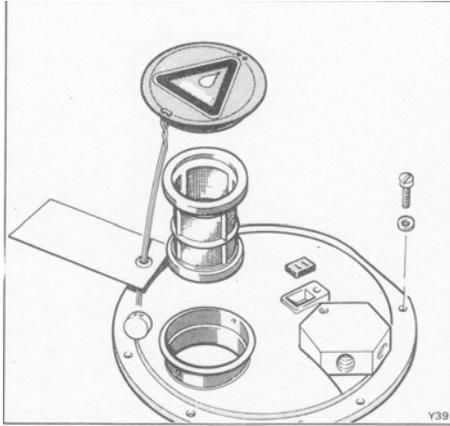


LUCAS 6.W WINDSCREEN WIPER

<u>Switch Position</u>	<u>Remarks</u>
<u>OFF</u>	If the motor is in the Park position, no current can flow. However if the switch has been turned to OFF during a cycle, current is maintained through Switch A to the main motor windings and also in an assisting direction to the secondary winding. The motor now quickly reverses to the Park position. If the anti-streak modification has been fitted the motor will complete a wiping cycle.
<u>SLOW</u>	Continuous current is applied to the motor and to the secondary winding in a direction opposing the main field. The limiting resistor is by-passed, which results in the motor running at a reduced speed.
<u>FAST</u>	Continuous current is applied to the motor and a reduced current (via the limiting Resistor) is applied to the secondary winding in an opposing direction. This results in the motor running at a faster speed than Position 2. NOTE : The timing of the internal switch used to stop the motor at the park position

CONTAMINATING MINERAL OIL SYSTEMS

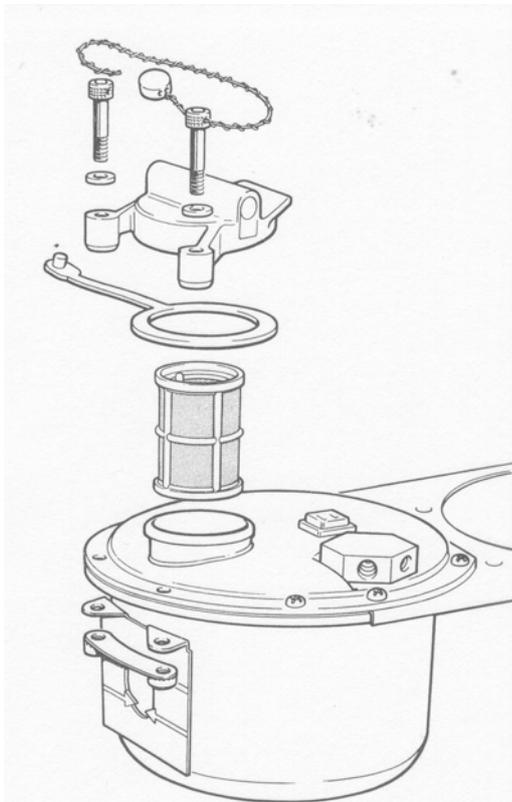
After trying out the now well accepted mineral oil system in the early Corniches and Camargues the Silver Spirit and derivatives adopted the installation as standard. While Citroen among a few others used mineral oil in their hydraulics it was still quite a novelty at the local garage. A few cars were therefore treated to a dose of conventional (vegetable based) hydraulic fluid which almost destroyed the car.



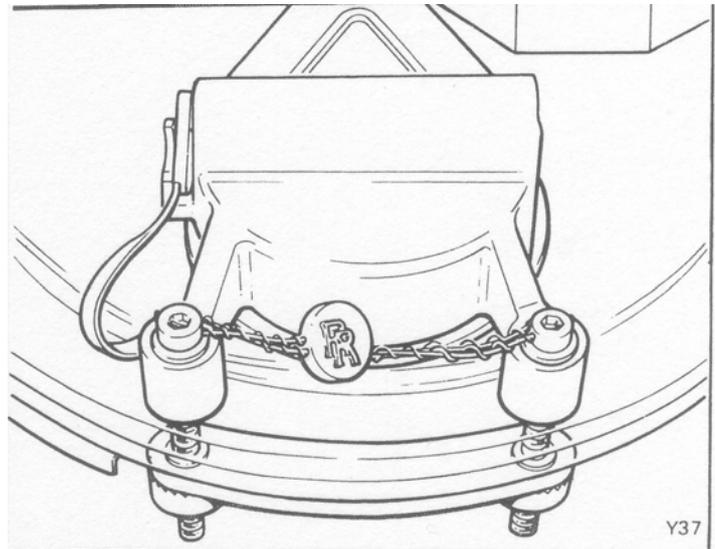
Early scheme

The problem was so serious the Factory produced contamination kits designed to ascertain whether even the most minute quantity of the offending oil had found its way into the system. I had thought these experiences were now history but was shocked to hear of a Silver Spirit recently discovered to have been contaminated. The time to remove every hydraulic fitting and overhaul it and the materials to among other things replace the rear struts, the accumulators and the gas springs is incredible and at today's man-hour rates prohibitive.

Recognising the infallibility of drivers and service station attendants alike, the Factory modified the filling arrangements a number of times to minimise the dangers. By 1986 the final iteration was installed involving lead seals, keyed sealing plugs sprung ball sealed filler caps, an impressive warning plate and a filling system to avoid casual insertion of fluid in the reservoirs. All cars prior to this should be modified to this level. The



Later scheme



parts are still available. Talk to your friendly Bentley spare parts man.

The other safeguard of course is to ensure that you have two intact sealed bottles of the correct oil in the battery compartment in the boot (trunk).



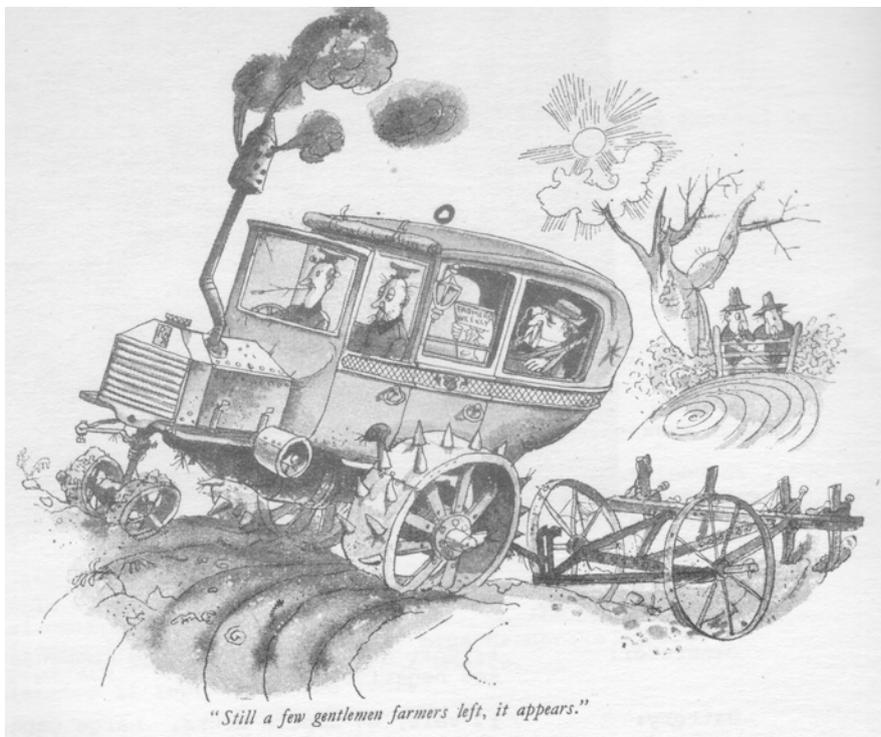
HYDRAULIC LEAK DOWN TIME

For those owners who have progressed from an early Shadow through to the later Spirits, the appearance of the warning lights for the braking system can cause a little anxiety. The original Shadow accumulators had quite a large capacity and could produce nearly 200 brake pumps before the dreaded lights appeared. When the Shadow II arrived complete with its rack and pinion steering and climate control, the accumulators had moved to snuggle up closer to the engine and at the same time their lower halves were almost flattened. Less capacity meant less pumps before light up time.

Associated with this was the leak down time. All these systems with their various valves have an internal seepage designed to lubricate them. This results in the system pressure gradually dropping when the car is stationary and the engine switched off. This will continue until the accumulators are exhausted and switching on the ignition will bring out the array of warning lights.

New owners of Silver Spirits and derivatives are sometimes startled to find that their lights come on after a seemingly short park. This is the result of the new mineral oil system which leaks down just like its predecessors, but also because the accumulators, now supplied straight out of the Citroen machine are of even smaller capacity.

So how long should it take for a fully charged system to leak down to the point of the lights coming on. Well the Factory twenty years ago quoted the length of a really decent lunch including port and coffee afterwards i.e. about three hours. The trick is having paid the bill to get in the car and immediately start the engine while you put the seat belt on, swallow breath freshener and antacid pills. By then the lights or at least one of them should be out. Do not drive with the lights still on – they are there for a purpose. If you want to test this put the car on



a deserted slope, switch off the engine then turn on the ignition. Pump the brakes until the lights come on and then some, release the emergency brake and move the gear change to neutral. Observe how the car slowly rolls down the hill. Then apply the brakes – nothing??? quite an invigorating experience is it not. I hope I have made the point.



WEB SITES YOU SHOULD HAVE ON YOUR COMPUTER

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

Rolls-Royce Owners' Club of Australia

<http://web.rroc.org/>

Rolls-Royce Owners' Club of America

<http://www.swammelstein.nl/rolls.htm>

A Dutch private web site with an excellent forum

All the above sites have free forums where you are welcome to share your knowledge and ask your questions. Or write to me - Bill Coburn Post Office Box 827 FYSHWICK ACT 2609 Australia or tuppercharles@bigpond.com.

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