

TEE ONE TOPICS

Number 43 April, 2005

A FAIRLY FULL MONTH

Yet another Rally has passed and all the participants are back home wondering where the next one will be. I sometime wonder whether we should increase the membership fees considerably and discount them for members who have worked on organising such events. As with all organisations it is the willing few who cater for the majority. There is nothing to be done about this, the days of 'all in' have long gone and we must count ourselves lucky that the few are still willing to get in and help. I by the way did nothing other than paid my money and enjoyed myself. This year the



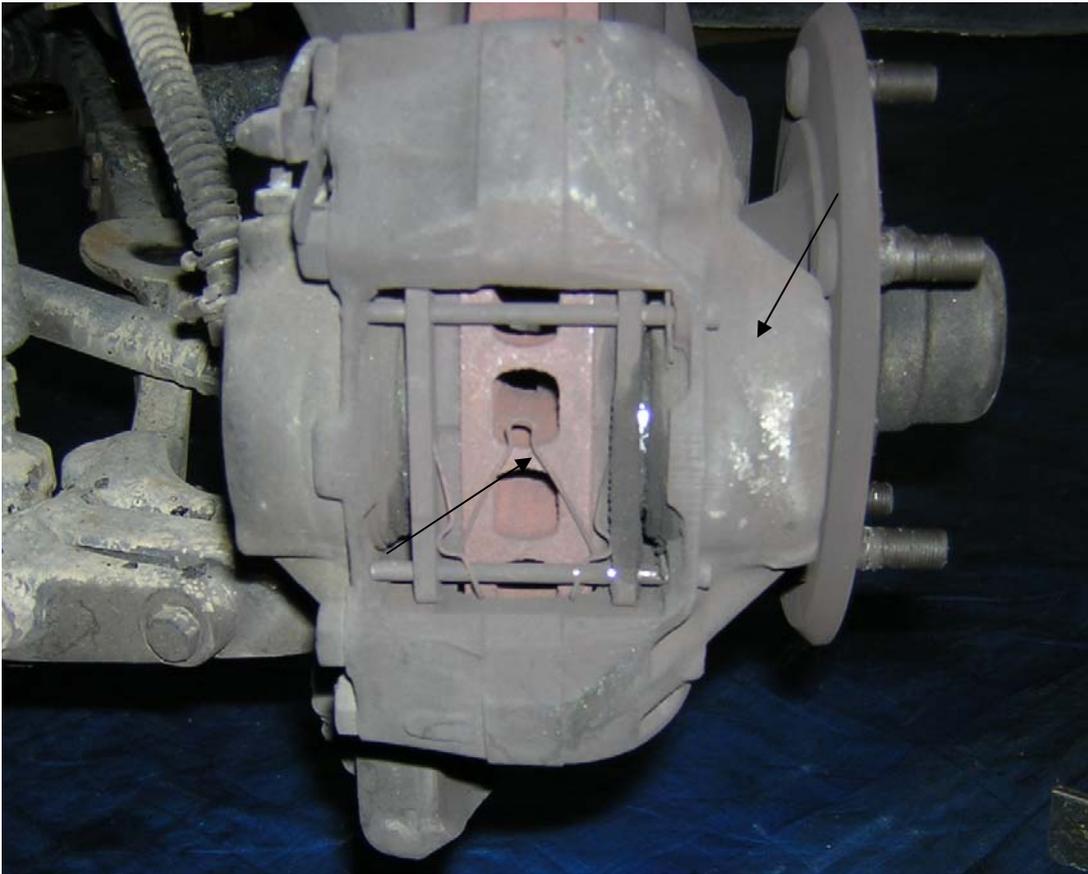
Registers got a charter which facilitated individual get togethers and these seemed to be well attended. Peter and I decided to do the honours for the S.M.A.R.T. group and some 70 people turned up for a nosh a natter and to renew old acquaintances. We overcame the immediate problem of where to park 30 odd cars by the use of a bus, quickly applied alcohol and dispersed people through the house to work out their own entertainment. In the middle of all this sat Terry

Bruce that octogeneric icon who quickly demonstrated he had not lost his verve. Judging by what was left over the food fitted the bill and evcerybody departed at an orderly 10.00PM.

As to the cars there was a good cross section, the usual breakdowns and innocent owners who never thought..... and a few owners who simply got their cars out and turned up grot and all. Good for them!! Spare a thought for people who are silly enough not to disguise themselves and who know something about these cars and guess what they were doing. I really wonder whether the recipients take these people for granted. So we live through another year for the next shindig and see what a different body of people can come up with. Meanwhile we will share some of our experiences with keeping the objects of our interests on the road!



HYDRAULIC INCONTINENCE



Leaking wheel cylinders in drum brakes on your old Silver Cloud or Mark VI was something that was par for course as with most similarly braked cars. But it seems that for some reason the SZ cars suffer from leaking calipers and the picture is a typical sight. So the next time you are checking the meat on your pads look for oily deposits around the pistons. For some reason Shadows seldom have this problem.



ON TECHNICAL CONTRIBUTIONS

I was quite delighted to see a review in Praeclarvm of Ashley James' web site KDA132.com which is more or less dedicated to the Mark VI Bentley of which he has two. Ashley is very much a hands on man and pleads the cause of among others, Shadow owners who seem to be rather neglected by some Clubs for a variety of reasons although they comprise a very large percentage of the Club memberships.

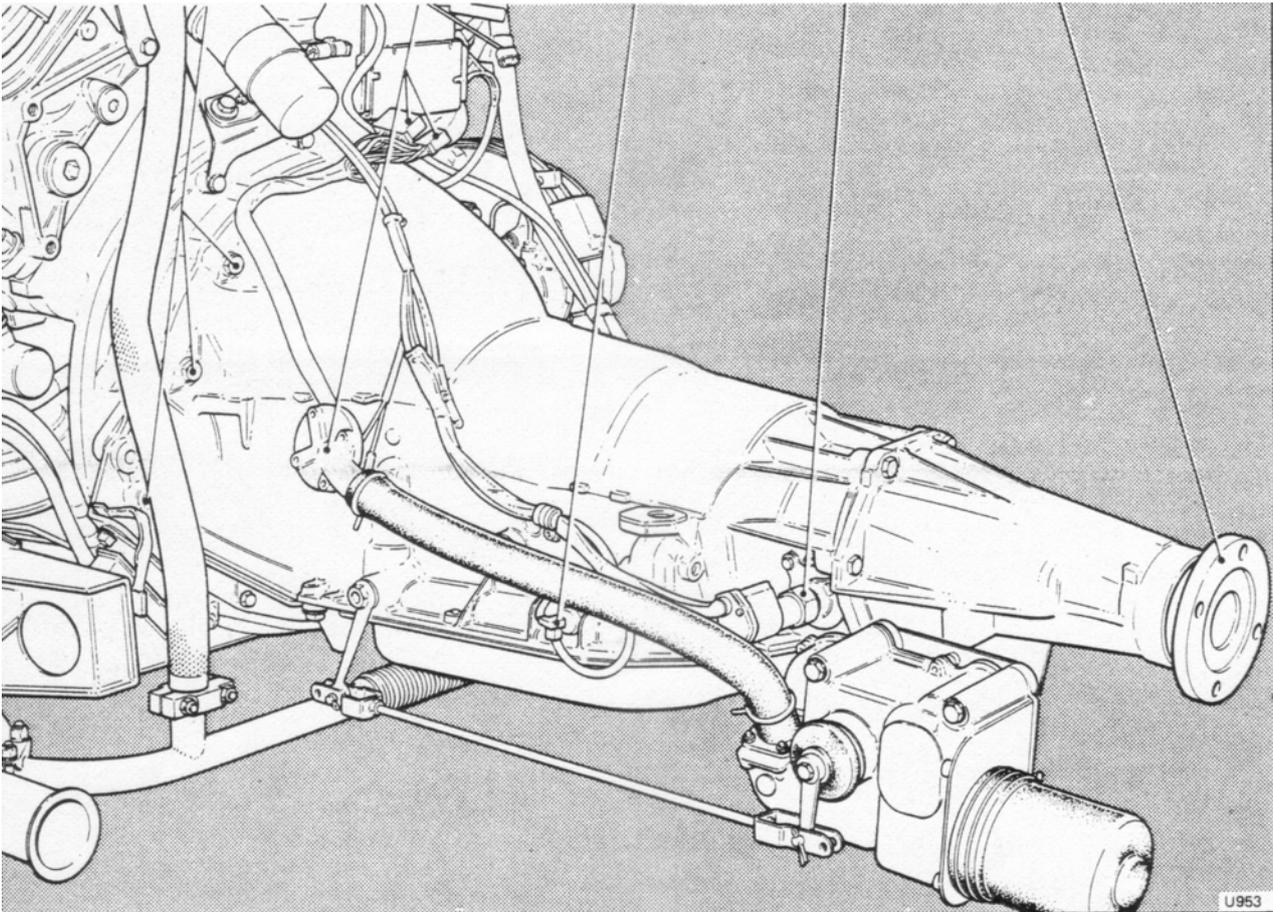
One of the great philips I have had this year has been Ashley's insistence that he include relevant bits of Tee One Topics relating to the Mk VI on his web site and somewhat flatteringly has even included some notes on yours truly. I was therefore a little surprised to find that the reviewer did not notice that my contributions are highlighted on the site as I mistakenly thought that it would be a connection of some note to Australian Club members.

But then the Registrar of the Australian Club Mark VI site some issues ago accounted for and lauded in detail the individuals who had provided technical input for the benefit of owners of that model and he also seemed to overlook the fact that he is a recipient of these notes and unaware of the author. And so I recalled the verse,

Yesterday upon the stair,
I met a man who wasn't there.
He wasn't there again today,
Oh how I wish he'd go away.

(Hugh Means 1875-1965)





THE GM 400 TRANSMISSION

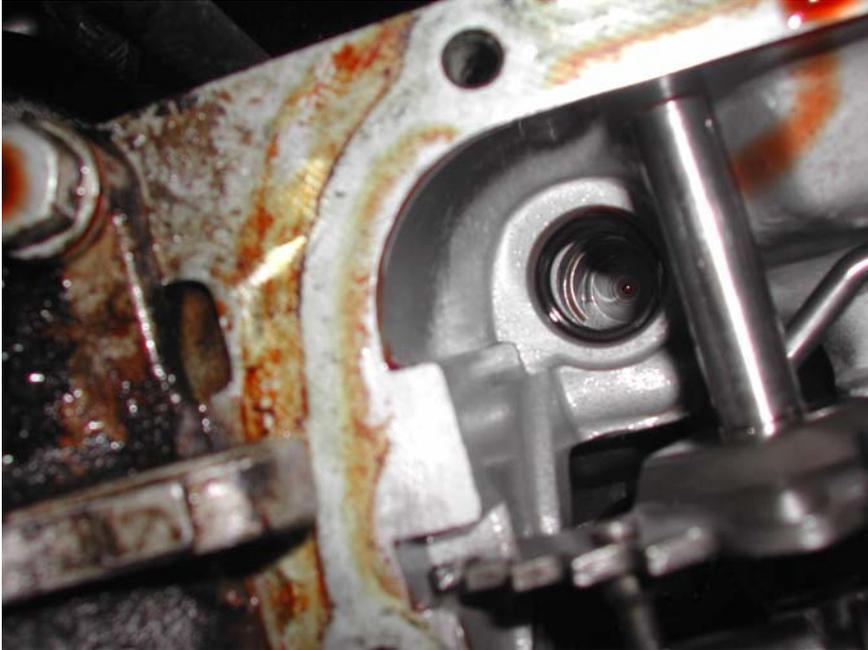
Since April 1968 Rolls-Royce and Bentley cars have enjoyed this transmission, which replaced the old warhorse, the four speed Hydramatic which had served us well for some 14 years. There are two big physical differences in the build of these units, the casing and the driving unit. First the casing which in the newer GM400 is aluminium, a considerable saving in weight. For strength however the general design is tubular with the main driving members clutches etc threaded through the structure and the control units strapped on underneath. The Hydramatic was more like a box where all the bits were assembled through the bottom of the box which of necessity had to be cast iron.

Secondly the Hydramatic used as a driving unit, that is the bit between the engine and the gearbox, a fluid flywheel. For the reader whose eyes are about to glaze, one has to have some means to disconnect the engine power from the gearbox otherwise every time you stopped, the engine would stall. The fluid flywheel while it worked well, was comparatively inefficient and wasted a significant heap of power. Quite often you will see a Shadow driver get in a Cloud for the first time, and go to drive off only to throttle back and check that he actually had the car 'in gear', such is the comparatively higher rate of slip.

The Driving Bit

The GM torque converter consists of three hydraulic turbines driving a multiple planetary gear train. Insert three multiple-disc clutches, a roller clutch, a sprag clutch, and two bands, and you have a pretty nifty gearbox.

The torque converter, clutches and rollers connect the engine to the planetary gears using pressurized transmission fluid. The three forward gears and a reverse are supplemented by the torque converter by multiplying engine torque. The converter is made up of two sections with internal vanes which face each other within a fluid filled housing. An analogy is two halves of a grapefruit with the nice squishy bits removed but the segments separating the bits left intact. The front half of the converters is connected to the engine and is referred to acts as a pump and the other half known as the turbine is attached to the transmission.



When the engine is running the front half (the pump) rotates and throws fluid against the rear half (the turbine), causing the latter to rotate. The fluid then returns to the pump in a circular flow and continues this cycle as long as the engine is running.

At left- This is the smaller of the two 'O' rings needed for the oil change. Always account for them since two rings in the hole or none are very havoc making!!

In the middle of all this there is a smaller turbine called a

stator, which directs the fluid back to the front turbine through smaller openings at greater speed. Boyle's Law comes in here. As fluid is incompressible it has to get through those holes or blow the transmission up. The designers thought of this and thickened up the fences. The little oilicles desperately trying to get through the smaller holes necessarily come out at a much greater speed bashing the pump and multiplying engine torque. I think Buick (When Better Cars Are Built Buick Will Build Them) was the first to use this device and it really brought the then fashionable but somewhat archaic 'fluid drive' out of the boondocks. Daimler used a fluid flywheel with its preselector box and it was not unusual to send a letter to the transmission requesting an increase in speed!!! Beautifully smooth but 'Ho Hum'.

Back to the GM400. A separate hydraulic system pressurized by an gear pump provides the working pressure to operate the clutches and bands and automatic controls. The gear ratios of the transmission are First 2.5:1, Second 1.5:1, Third 1.0:1, Reverse 2.0:1. Each gear ratio can be multiplied by as much as 2.2, depending upon the slip speed of the converter pump and turbine.

Note that reverse is a higher ratio than first unlike most manual gearboxes. I can still remember Mellior Street in South Hobart which had a hill so steep the mountain goats used to wear oxygen masks and crampons. Half way up there was a level driveway into which pre war cars would swing, engage reverse and back up the rest of the hill. Ah the romance of early motoring.

Controlling the Beast

To harness all this intricate machinery you need reins and the Factory devised the following.

- a. **An electric gear change actuator, connecting rod, and levers.** This is controlled by the 'gearlever' on the steering column and for the the very late cars on the floor! This complex

method met Rolls-Royce's ambition to separate the mechanical change lever from the gearbox which they considered a source of noise. It was probably overdue as those who have used the control mechanism on a Cloud know that even the best adjusted linkages give the feeling of trying to break the legs on an arthritic octopus! The actuator receives a signal from the switch on the steering column, and moves the gear change lever on the transmission to the required position.

b. Engine vacuum operates a vacuum modulator unit. This automatically senses engine torque input to the transmission. The modulator sends a signal to the pressure regulator which controls main line pressure, so that all the torque requirements of the transmission are met and the correct gear change spacing is obtained at all throttle openings.

c. 12 volt electrical signals to operate a detent solenoid. The solenoid sits in the control unit under the gearbox and opens a tap forcing the car to change down. It is switched on by that little button under the accelerator pedal which you never bother to clean around. If enough muck gets around it and it jams down you will enjoy a very original change pattern or none at all! A down-change will occur at speeds below 113 km/h .

d. The anti-getting too hot thing. Owners still forget that an awful lot of energy is belted into that torque converter and a lot less comes out the other end to drive the tail shaft.

As Mr Newton discovered and so eloquently enunciated, 'Energy cannot be created nor destroyed'. So it has to be dissipated somehow and in this case it is through heat. A boiling gearbox is a sight to be remembered as the expression on the owner's wallet. If you are climbing a long hill and the old girl is grunting a bit manually change back to Intermediate. The converter will stop most of its converting and thus producing less heat – so simple! As some relief the oil is pumped through a separate radiator beneath the engine radiator and hopefully the temperature will remain at a reasonable level despite the driver!

Looking at the thing.



Well there is not much there. As with all other gearboxes the oil is preferably kept within the casing. The rear seal seldom leaks but can be changed in situ if needed. The sump's gasket goes hard and the bolts holding it on tend to loosen a bit otherwise there is little to see.

At left- The hole through which the oil drains and into which the dipstick tube fits. The 'O' ring is vital and must be replaced. It is slightly larger than the filter ring.

Leaking up the front means the front seal is going and the box has to come out. Make sure the oil is engine and not transmission. But do not forget the oil cooler. This is a separate radiator at the bottom of the main radiator. The idea is to keep the coolant and the oil separate. Sometimes one or the other gets lonely and a little hole is eaten through. The result is usually a most unusual cocktail appearing in the radiator or else Mr Whippy sets up shop in the transmission, his product appearing liberally on the transmission dip stick.

The idea of these two units being in one is not unique being used by most modern cars. In practice the radiator rots before the oil cooler, you throw the whole thing out and start again with peace of mind. An interesting fact is that the glues used to attach friction facings to the metal clutch plates is actually water soluble. So if any quantity of water gets into box you are surely up for a transmission overhaul. This is a common problem with cars that have been stored for ages and started up once a month but not moved. The ensuing condensation is enough to start loosening the glue and /.....

There is one more thing to look at while you are rolling around under your car and that is the hoses from the front of the engine to the lower radiator. Because Rolls-Royce engines run slightly cooler than Krakatoa these tend to get well and truly baked. They should be quite flexible and if not they should be replaced before you manage to pump the entire contents of the transmission out in the middle of a major intersection and are remembered by the citizenry for years to come. The hoses can, by the way be made by any reputable pressure hose manufacture.

Servicing it.

Really not a great deal to do. There are no adjustments just a filter to change along with the oil. The torque converter by the way, unlike the fluid flywheel cannot be opened by mere mortals to drain it. The outer casing is machine welded and balanced requiring specialised equipment and skill. It is important to remember that if you have transmission trouble it usually involves bits breaking or wearing or grating and these bits usually finish up in among other places in the torque converter. All transmission shops have an exchange service for these units. Don't ever resist changing the unit otherwise you could well have the most extraordinary problems as the metal chutney courses its way through the system.

Safety. Be very careful with hot oil. Leave the transmission to cool as hot oil can be lethal. You will need to lift the car fairly high (sills about from the floor) to work in comfort. Use adequate jack stands under the sills.

Bits to get. You will need a filter kit which is available as an after market spare and two 'O' rings, one for the filter tube and a slightly larger one for the filler tube. The latter also can be bought at any reputable 'O' ring store – take the old ones along and tell them where they are used. You will also need at least 5 litres of Dexron transmission oil.

Doing it. To drain the oil on 1989 cars and later undo the drain plug. Prior cars drain through the hole in the side of the sump where the filler pipe screws in. Undo the gland nut and carefully pull the tube out with bucket at the ready. You should get about 5 litres of oil.

Remove the bolts securing the sump, move the bucket to a rear corner and lower the rear end. More will flow out probably a lot over you, the floor etc. The front end of the sump will catch on those mysterious projections on the back of the flywheel housing and need to be wiggled around. Those projections were originally used to mount the first primitive oil cooler fitted to the very early Shadows!!!

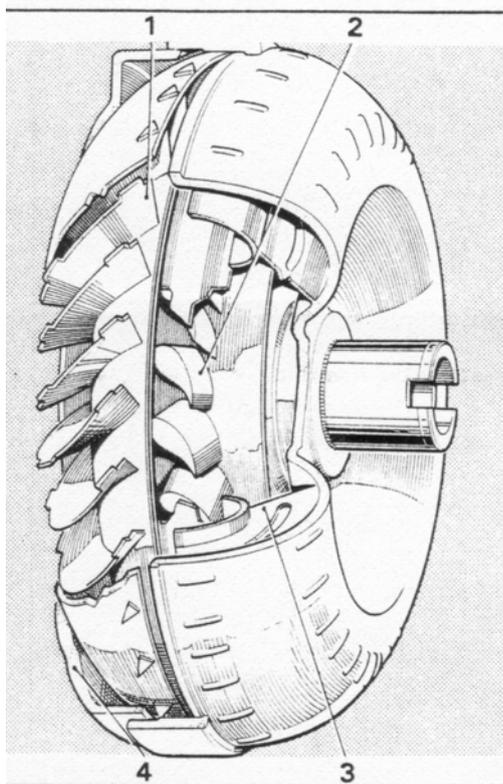
You lie there there wiping the oil off yourself and contemplate the internals. Eventually you summon up courage to find out what is in the bottom of the sump. Sundry bolts, metal shavings the odd spider – we hope not. There will be some black sooty deposits which is merely clutch dust. If there are metal bits, replace the sump, refill with oil and drive carefully to your favourite transmission man with the car and the news.

All clear, so you remove the filter which is held loosely by one stepped bolt. It is meant to be loose. Usually a coloured plastic tube will come out with the filter which inserts into a hole in the right front corner of the box. If not pull the tube out of the box. Throw the filter away and with a smooth hook go looking for an 'O' ring up in the hole where the tube went. It may of course be on the tube but find it and discard it.

Clean the sump fit a new 'O' ring to the top of the tube insert the latter into the new filter and fit the assembly back into the box and snug up the securing bolt. The tube will only go in one way which you can work out. Don't get Herculean tightening the securing bolt. You are screwing steel into aluminium. If you do not fit the 'O' ring you will rapidly belch transmission fluid out of the filler tube all over your exhaust manifold generating enough smoke to give you a heart attack.

Clean the face of the gearbox fit a new gasket and refit the sump. Before doing so fit a new 'O' ring into the side of the sump where the filler tube goes. It is the larger of the two rings. Fit the filler tube and snick it up.

Get yourself a steel funnel with a flexible nozzle and bend it to fit comfortably in the tube. Pour about 5 litres of Dexron transmission oil down the filler tube. Have a cup of tea (or coffee).



At left- The fundamental driver the torque converter. The right hand side of the drawing is the engine side.

- 1 Turbine
- 2 Stator
- 3 Pump
- 4 Converter cover

Note that there is no provision to drain the oil.

Remove the funnel leave the dipstick, which you have wiped, out and start the engine with the gear selector in 'Park' and the parking brake firmly applied (any doubts chock the wheels). Move the selector to 'R' and the tail should lift (the car's not yours). Well so far so good. Into 'N' and we relax, then into 'D', tail goes down. It didn't?? Plunge your nice clean dipstick right down the pipe pull it out and gadzooks there is no oil!!! Pour in another half litre. Repeat the process tail up, tail down etc.

Fiddle around like this until you get the oil level up to the 'Add Oil' mark then leave the thing to warm up. Each time you check the level move the lever from '**PARK**'

through all positions on the quadrant and back to '**PARK**'. This ensures that all the little things that go in and out and the corridors between them are all full of oil. The reason the tail didn't go down the first time is that there was insufficient oil in the sump to fill the cup of the little elf that pushes the thingamy down to engage first gear!

Check that there is not a steady drip of anything depending from the car, remove all items carefully stored on the wipers, aircon vent front bumper and roof. Refit the dip stick close bonnet doors boot lid and carefully drive out of the garage, car port, back alley or front room and go for a 20 mile drive. When you get back go through the checking again and lo the oil seems to have multiplied.

Add little bits if necessary to get the right level and contemplate how clever you are. If you happen to everfill the thing you have to suck it out. Yes a large plastic tube carefully sucked on will

remove enough to eventually get it to the right level. I use a simple large metal syringe which is readily available. Otherwise have on hand bladder syringes available at all good medical shops and get some plastic tubing to fit the nozzle.

By now you will know how to check the transmission level. Always after a good drive when the thing is hot. As to getting showered with oil, get a cheap very large plastic tray under the box and that will save your temper and your clothes.

✠ ANOTHER ACHILLES HEEL

The introduction of the automatic air conditioning system required a different hot water tap seen here at the bottom of the picture. The three parallel hoses actually below it are from left the lower radiator hose, the heater tap supply hose and the heater return pipe. The centre one is the most important since it cops the full blast from the water pump. The Factory recommends, no directs, that it be changed at least every two years. You have been warned.

Back to the GM400. A separate hydraulic system pressurized by an gear pump provides the working pressure to operate the clutches and bands and automatic controls. The gear ratios of the transmission are First 2.5:1, Second 1.5:1, Third 1.0:1, Reverse 2.0:1. Each gear ratio can be multiplied by as much as 2.2, depending upon the slip speed of the converter pump and turbine.



While fussing around under your Shgadow have a good look at the high pressure supply hose from the power steering to either the steering box or the rack and pinion. These seldom burst but they can ooze and it is easy to dismiss this as general muck excuded by the engine. Wipe it off drive the car for a day or so and have another look. Again it is easily remade by your local friendly hose maker – just give him the old one as a sample.

It is also interesting to note the two pipes seen in the picture. This was taken from under a T2 Bentley. This series used rigid pipes to pump the transmission oil through the bottom of the radiator for cooling. To provide for engine movement the above pipes wandered down the underfloor of the car and then connected with a couple of high pressure hoses to the gearbox. Later cars carried rigid piping to the front of the engine then went flexible to the radiator. Either way after 28 years in this case it is not a bad idea to fit new ones at you next oil change.



I made scant reference to this elsewhere but if you happen to pull the sump off your GM400 transmission you will of course observe this dinky little ratchet on the left side of the control box. And we know that this gearbox in the picture is in 'P' don't we. The actuator is supposed to know precisely where to stop pushing or pulling so that that little sprint loaded roller pops into the right notch. But what if it doesn't and it

only gets half way in and stops. If it park that it's aiming for you could be in trouble and you will remember the buttock protection warning in the handbook that when you leave the car ALWAYS leave the thing in Park AND put the parking brake on. The workshop manual as far as I can find makes no mention of adjusting the rod between the actuator and the lever on the side of the transmission which operates the shiny shaft which moves the notched plate. I suppose it is common sense. As a step towards assurance that all is well try getting the wife to move the selector when you have the sump off just to make sure the little thing is doing as it should!!!

Safety. Be very careful with hot oil. Leave the transmission to cool as hot oil can be lethal. You will need to lift the car fairly high (sills about from the floor) to work in comfort. Use adequate jack stands under the sills.

To drain the oil on 1989 cars and later undo the drain plug. Prior cars drain through the hole in the side of the sump where the filler pipe screws in. Undo the gland nut and carefully pull the tube out with bucket at the ready. You should get about 5 litres of oil.

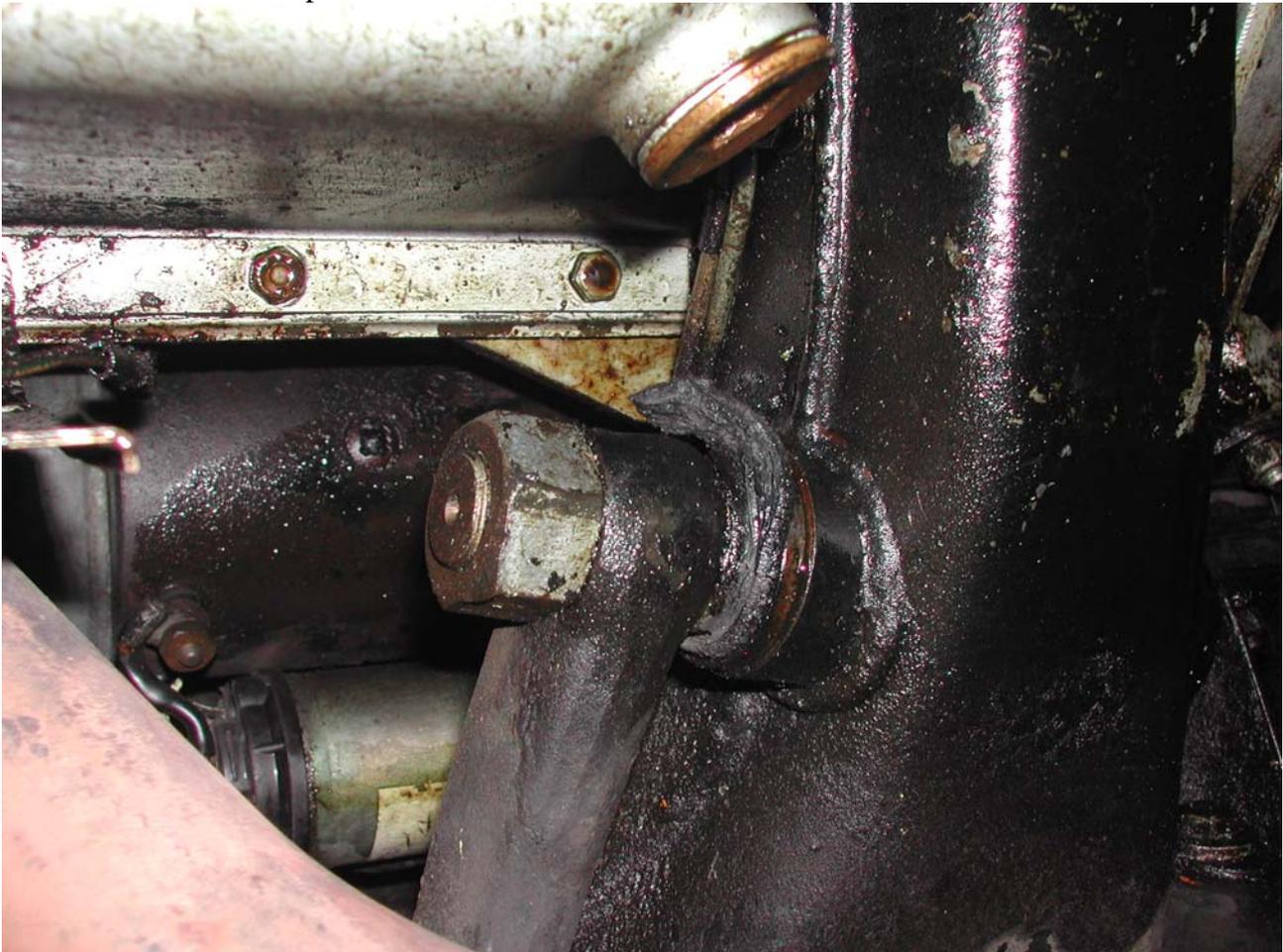
Remove the bolts securing the sump, move the bucket to a rear corner and lower the rear end. More will flow out probably a lot over you, the floor etc. The front end of the sump will catch on those mysterious projections on the back of the flywheel housing and need to be wiggled around. Those projections were originally used to mount the first primitive oil cooler fitted to the very early Shadows!!!

You lie there there wiping the oil off yourself and contemplate the internals. Eventually you summon up courage to find out what is in the bottom of the sump. Sundry bolts, metal shavings the odd spider – we hope not. There will be some black sooty deposits which is merely clutch dust. If there are metal bits, replace the sump, refill with oil and drive carefully to your favourite transmission man with the car and the news.

All clear, so you remove the filter which is held loosely by one stepped bolt. It is meant to be loose. Usually a coloured plastic tube will come out with the filter which inserts into a hole in the right front corner of the box. If not pull the tube out of the box. Throw the filter away and with a smooth hook go looking for an 'O' ring up in the hole where the tube went. It may of course be on the tube but find it and discard it.

Clean the sump fit a new 'O' ring to the top of the tube insert the latter into the new filter and fit the assembly back into the box and snug up the securing bolt. The tube will only go in one way which you can work out. Don't get Herculean tightening the securing bolt. You are screwing steel into aluminium. If you do not fit the 'O' ring you will rapidly belch transmission fluid out of the filler tube all over your exhaust manifold generating enough smoke to give you a heart attack.

Clean the face of the gearbox fit a new gasket and refit the sump. Before doing so fit a new 'O' ring into the side of the sump where the filler tube goes. It is the larger of the two rings. Fit the filler tube and snick it up.



You are looking at a self destructing rubber bushing holding the right rear lower suspension arm to the front sub-frame. The oozing rubber is the result of hot engine and possibly transmission oil soaking it. In that environment the rubber has no chance and replacement of the rubber bushings should be accompanied by termination of the damaging leaks!

Get yourself a steel funnel with a flexible nozzle and bend it to fit comfortably in the tube. Pour about 5 litres of Dexron transmission oil down the filler tube. Have a cup of tea (or coffee).

Remove the funnel leave the dipstick, which you have wiped, out and start the engine with the gear selector in 'Park' and the parking brake firmly applied (any doubts chock the wheels). Move the selector to 'R' and the tail should lift (the car's not yours). Well so far so good. Into 'N' and we relax, then into 'D', tail goes down. It didn't?? Plunge your nice clean dipstick right down the pipe pull it out and gadzooks there is no oil!!! Pour in another half litre. Repeat the process tail up, tail down etc.

Fiddle around like this until you get the oil level up to the 'Add Oil' mark then leave the thing to warm up. Each time you check the level move the lever from 'PARK' through all positions on the

quadrant and back to 'PARK'. This ensures that all the little things that go in and out and the corridors between them are all full of oil. The reason the tail didn't go down the first time is that there was insufficient oil in the sump to fill the cup of the little elf that pushes the thingamy down to engage first gear!

Check that there is not a steady drip of anything depending from the car, remove all items carefully stored on the wipers, aircon vent front bumper and roof. Refit the dip stick close bonnet doors boot lid and carefully drive out of the garage, car port, back alley or front room and go for a 20 mile drive. When you get back go through the checking again and lo the oil seems to have multiplied.

Add little bits if necessary to get the right level and contemplate how clever you are. If you happen to overfill the thing you have to suck it out. Yes a large plastic tube carefully sucked on will remove enough to eventually get it to the right level. I use a simple large metal syringe which is readily available. Otherwise have on hand bladder syringes available at all good medical shops and get some plastic tubing to fit the nozzle.

By now you will now know how to check the transmission level. Always after a good drive when the thing is hot. As to getting showered with oil, get a cheap very large plastic tray under the box and that will save your temper and your clothes.



KEEPING ON THE STRAIGHT AND LEVEL

Owners of early Shadows, you will notice, tend to change the subject or shout an unexpected round of drinks whenever the subject of body roll comes up. The young among us (I saw one at the Rally) may not be aware that the very early cars not only had self levelling on the front of the car but used the rams to actually level it on a corner. I have never put one of these systems to the test but I do remember an account of driving the very first Shadow from Melbourne to Sydney by the Sydney Agents and hearing that they nearly turned the car over twice.

The problem was apparently brought about by there only being one level sensor. If the car was being driven hard around a long bend the ouboard side would jack up to level the car but if the bend then went in the other direction, the car entered it leaning in the wrong direction!! Apart from this foible front levelling was not practical from a maintenance point of view and it was scrapped along with the anti-roll feature. Ironically the same problem has been noticed to a lesser extent on the SZ cars with the rear getting cocked one way on a reversed turn. The solution here was to have a central sensor on the rear antisway bar and apparently jack up up both sides. Somebody explain this please!!

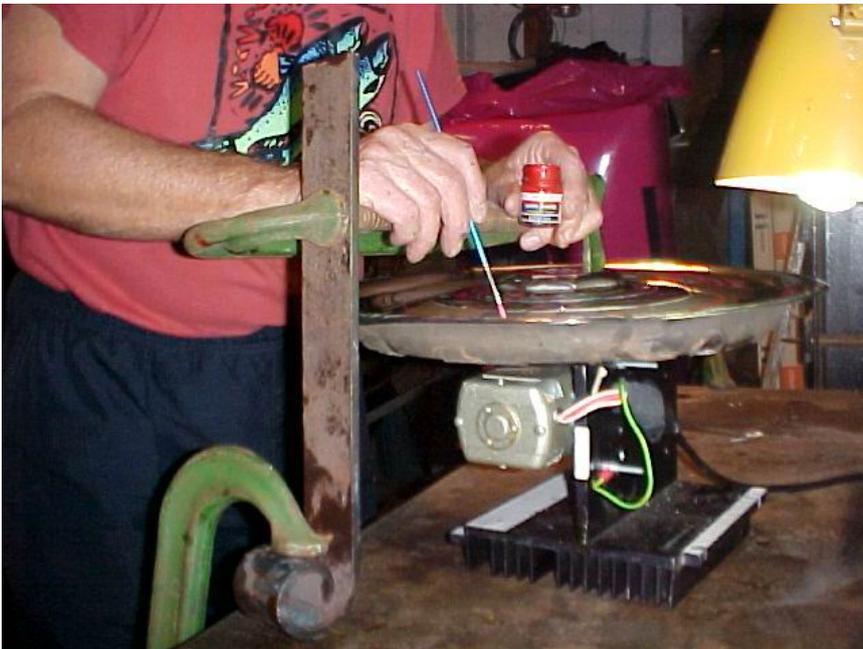
To keep some levelness the company relied on the tried and tested anti-roll bar also known as sway bars but probably more correctly stabilizer bars. These bits must be just about the most reliable thing on any car they almost never break and just sit there and do their job. It was not the first time that the Factory had to back track on a design. The early Clouds had a standard front stabilizer and a similar 'half' device on the rear axle which did not give a happy result at high speed on twisting roads. That had to be shortended. The Shadow started with a bar at the front and progressed to an extra one at the back

Nick Lang whose interests fortunately extend beyond our chariots sent the following notes on the fixtures contributed by a Malcolm Thomas to the Honda newsletter. A little cross education I felt wouldn't go astray!

“Stabilizer bars are part of a car's suspension system. They are sometimes also called anti-sway bars or anti-roll bars. Their purpose in life is to try to keep the car's body from "rolling" in a sharp turn. Think about what happens to a car in a sharp turn. If you are inside the car, you know that your body gets pulled toward the outside of the turn. The same thing is happening to all the parts of the car. So the part of the car on the outside of the turn gets pushed down toward the road and the part of the car on the inside of the turn rises up. In other words, the body of the car "rolls" 10 or 20 or 30 degrees toward the outside of the turn. If you take a turn fast enough, the tyres on the inside of the turn actually rise off the road and the car flips over.

Roll is bad. It tends to put more weight on the outside tyres and less weight on the inside tyres, reducing traction. It also messes up steering. What you would like is for the body of the car to remain flat through a turn so that the weight stays distributed evenly on all four tyres.

A stabilizer bar tries to keep the car's body flat by moving force from one side of the body to another. To picture how a stabilizer bar works, imagine a metal rod that is an inch or two (2 to 5 cm) in diameter. If your front tyres are 5 feet (1.6 meters) apart, make the rod about 4 feet long. Attach the rod to the frame of the car in front of the front tyres, but attach it with bushings in such a way that it can rotate. Now attach arms from the rod to the front suspension member on both sides.



I am embarrassed to find that one of my readers sent me this picture ages ago and I lost it among other files. Subsequently I discovered that the Factory used almost precisely the same system. It is one of those techniques where a lot of practice would be needed.

When you go into a turn now, the front suspension member of the outside of the turn gets pushed upward. The arm of the sway bar gets pushed upward, and this applies torsion to the rod. The torsion then moves the arm at the other end of the rod, and this causes the suspension on the other side of the car to compress as well. The

car's body tends to stay flat in the turn.

If you don't have a stabilizer bar, you tend to have a lot of trouble with body roll in a turn. If you have too much stabilizer bar, you tend to lose independence between the suspension members on both sides of the car. When one wheel hits a bump, the stabilizer bar transmits the bump to the other side of the car as well, which is not what you want. The ideal is to find a setting that reduces body roll but does not hurt the independence of the tyres.





VANDALISM

One of the things I notice in the changing world of the automobile is how seldom one sees tyre changing by owners in public places. Somehow in the last thirty years tyres seem to have developed the ability to shun nails, screws and anything else lying in wait on the highways. And when did you last have or even hear of a blowout? That was the stuff of my young nightmares given the graphic accounts I was regaled with by my father. Actually I lie, to the extent that not long ago a certain official of the old Company was apparently demonstrating the legs on a very new Turbo Bentley on a suitable racing circuit in the home country. He had three passengers.

At a speed the legend records as exceeding 140 mph there was a tyre blowout. The car mounted the safety rails which in the process managed to rip out the front and rear subframes complete with their respective suspensions and finished its trip ingloriously sailing along the track on its floor describing various circles as odd bits dug into the planet surface. All four occupants alighted unhurt.

So it is relevant to ask you, could you jack up your car? Where is the jack, where does it go and how does it fit? The SZ cars (Spirits etc) use a scissor jack, lifting the car immediately adjacent to the wheel you are attacking. This is a bit more dignified than the old wind-up gadget used on previous models that lifted the entire side of the car in a most undignified manner. But that system had a neat aperture protected by a door that short of a side swipe by a Hummer could not be damaged. Not so with our Spirits Spurs et al.

The picture tells all. The mangled bracket in fact all four of them which depend from the floor of the car is designed to locate the jack. Vandals far too lazy to get down and look under the car, fling a trolley jack under the thing and jack with the damage seen above. Fortunately with levers and a shifter most of the damage can be repaired. But if you have occasion to leave your car in the hands of these people think of a suitable process of vivisection which you can describe in detail to them if they bend your jacking brackets.



Slow Windscreen Wipers

One of our North American correspondents Bill Hunter picked up a chance remark that the wipers on my Spur were inordinately slow. He put the trouble down to binding wiper shafts. Wipers incidentally were invented by an American woman! That aside, all wipers arms work from a spindle which in turns runs in a bush and housing poked through the body usually beneath the windscreen. Apart from initial lubrication on assembly there is no easy way to top this up and if the lubricant dissipates and not replaced you have a good chance of burning out the wiper motor.

Bill sent this procedure to me some time ago and it got lost in my computer. My apologies and thanks.

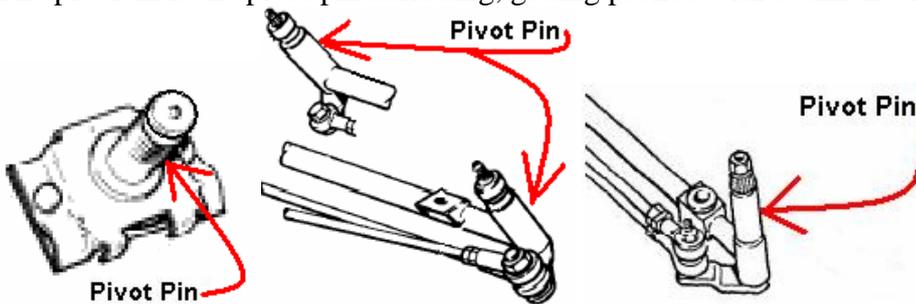
Warnings:-

Do NOT allow the oil to pool on the paintwork.

Do NOT use silicon lubricant or WD40 or similar, they will wash out in the first light rain and can damage your paint.

The normal binding point is in the pivot pin on most post WW2 cars.

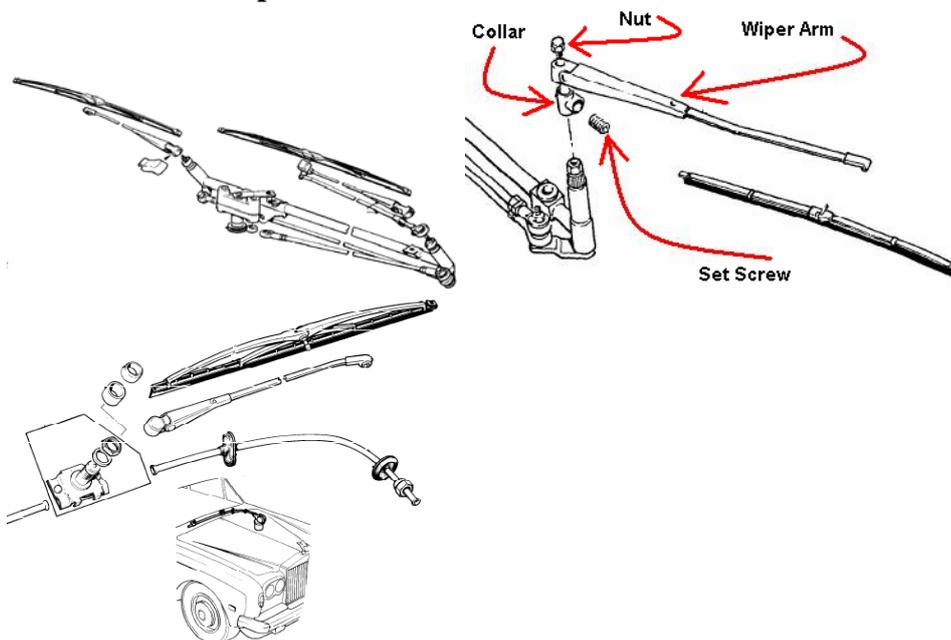
The problem is the pivot pin corroding, getting packed with sediment or drying out and binding.



A careful application of lubricant can bring them back to proper speed and function.

The difficult part is; you must “saturate” the pivot pin that the wiper arm attaches to with automatic transmission fluid, while the wipers are running.

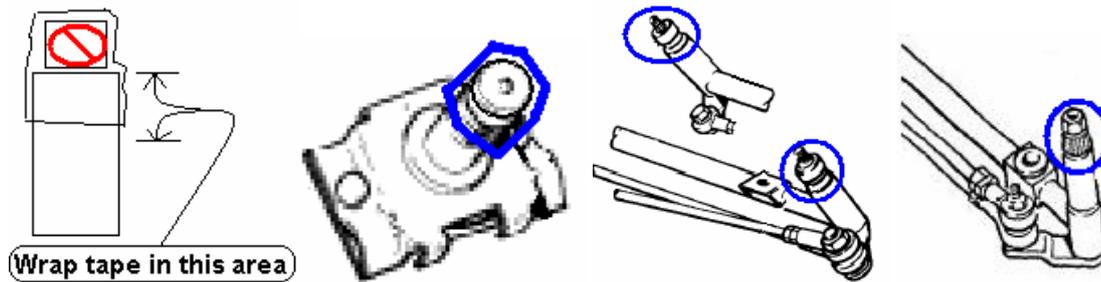
#1. Remove the wiper arms.



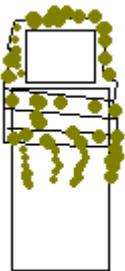
#2. Take eight or ten paper towels, cut a hole to fit the pivot pin in them, and put two or three over each pivot pin to protect your paint, you may need to stop and change them several times.



#3. Wrap cotton or gauze around the pivot pin and wrap that with tape.



#4. Soak the cotton with fresh transmission fluid, using an eye dropper, until it starts to run down the shaft.



#5. Start the engine, turn the wipers on high and let them run for fifteen minutes, adding fresh transmission fluid as needed.

Notes

- The total fluid volume needed is roughly one ounce for both pivot pins.
- You are creating a saturated wick = controlled leak.
- The movement of the pivot pin will draw from the wick = rough total penetration ten drops per pin.
- Not enough to be a concern of leaking into the car.
- If you see the pin speed up, the run time can be reduced to fifteen minutes total.
- You may repeat this as often as needed.
- This procedure requires patience and care.



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 spur84@bigpond.com.

www.BritishStarters.com

An American site offering Nippondenso Starters for among other British cars, units for our cars.

<http://www.nzrrbc.co.nz/>

Our New Zealand enthusiasts web site

<http://www.books4cars.com/>

A great source for handbooks and workshop manuals

<http://www.rrec.co.uk/>

The British RREC.

barbarawestlake@rrec.org.uk

The address of the lady who will send you the build sheets for your car.

www.enginesaver.com.au

The sensor to warn you about the loss of coolant

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