CREWE 'D JOTTINGS

TECHNICAL SELF HELP GROUP MEETING
AUGUST 14th 2005 REPORT

It seems that our little group has awoken a sleeping giant with more and more phone calls received and larger attendances.

Today, at Ken Long's premises in West Melbourne we had the pleasure in the company of the following attendees: -

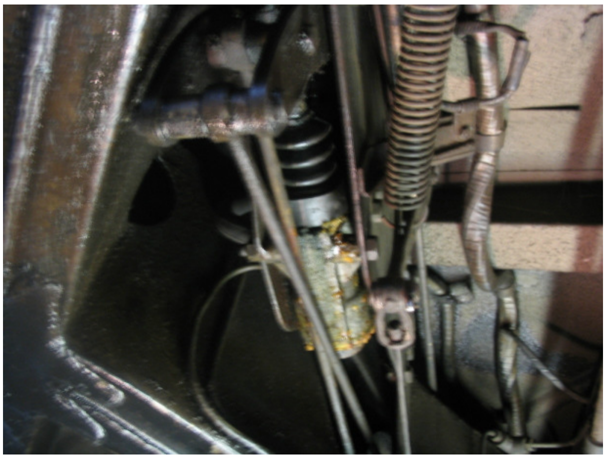
Ken Long, Neil Matthews, Nick Lang, Alan Dyer, Graham Thorpe, David Wright, Lionel Gell, Bill Humphreys, Graeme Haley, Mark Walton, Laurence Bottomley, Mark Herbstreit, Denis Rogers, Troy Sartori, Paul Dabrowski and yours truly Robert Wort with my daughter, Elizabeth (who happily sketched away in the lunch room).

Our mission today was to flush out the braking system of Ken Long's Silver Cloud 11 LWB, but as is usually the case, old Murphy and his law prevailed and a few problems emerged when our team carried out a preliminary check on the rest of the braking system prior to the anticipated event.

Let me explain.

Our team, headed by Neil Matthews and Nick Lang decided quite wisely that it would be prudent to check the condition of the braking system (both mechanical and hydraulic) before jumping headlong into the process of flushing the system first. This involved checking the condition of the brake lines, removal of the brake drums, checking for lining wear and wheel cylinder leaks, the condition of the master cylinder, the mechanical servo and the linkages.

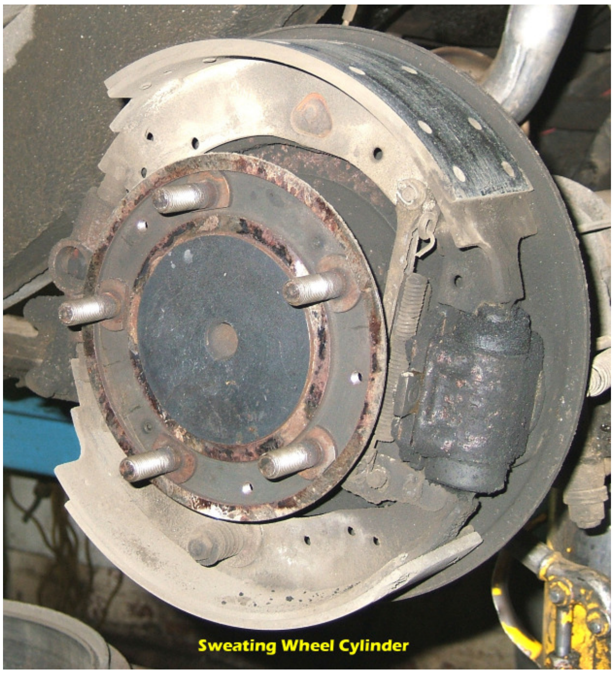
It was ascertained that the brake lines were in good condition but it soon became apparent that there were other problems afoot.



The master cylinder itself was leaking and it was evident by the crystallized deposits of old brake fluid that had encrusted itself outside the main body, that it had been leaking for some time.

Ken Long is a veteran in the tyre industry and has many handy tools at his fingertips. Pictured is Ken using his $400 wheelnut remover. It is important to note here that many's the time a motorist has failed to remove the wheelnuts because of an over-zealous mechanic using gargantuan strength to tighten them when replacing the wheels. If power tools are used, it should be remembered that upon removal of the nuts the tool setting be set to maximum. But on replacement the power tool should be set on minimum. Better still, hand-tighten the wheelnuts first, ensuring that the wheel is centralised and then tighten to the point when the nut just stops tightening further (Usually between one quarter to half a turn further) and NEVER over-tighten them, lest you damage the thread on the stud or the wheelnut itself.

With the wheel removed, you may encounter two small screws that secure the brake drum onto the rear axle hub (front drum pictured). In many cases, the screw head has been badly damaged and can be difficult to remove. A handy hint made by Nick Lang is to go down to your local hardware store with the screw and replace it with a tapered brass one with an Allen Key head. Original? No, but practical as it will be far easier to remove in future with less chance of damage to the head when removed again.



Sweating Wheel Cylinder

Another problem that was encountered (and quite a common one) was that the wheel cylinders had become porous and fluid was sweating into the drum area. This can be remedied by relining the cylinders with stainless steel which is far more cost-effective than replacing the unit. It was quite evident by this time that it would be highly impractical to flush the system and put good fluid in after bad until these areas have been rectified.

Noticed also was that the rear brake expanders had seized, making it impossible to adjust the brakes (the front brakes are self-adjusting and have double trailing shoes to ensure even braking and fade resistant drum brakes). These will require a good soaking in WD40 or some other brand of penetrating lubricant and then gently freed from their state of slumber.

Ken complained that the car suffered from servo lag and was it possible to adjust it?

Well! We couldn't flush the fluid until the aforementioned had been attended to, so Nick didn't waste any more time and went into action.

Did I mention the linkage adjustments?

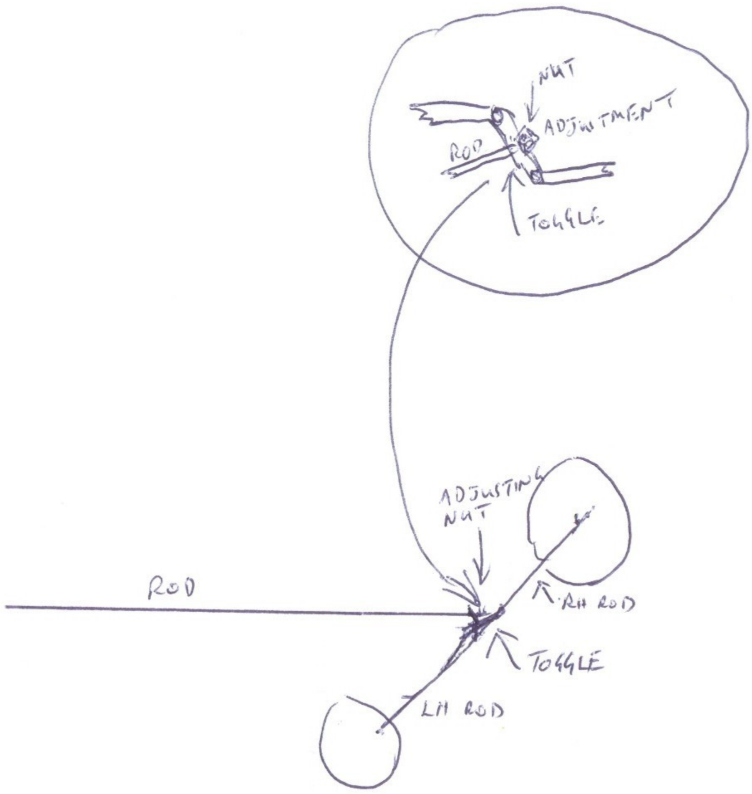
Pictured below is a very simplified diagram of the rear brake linkage and toggle lever (I'm no artist as you can see). This linkage performs essentially two operations.

1/ To actuate the handbrake operation.

2/ To enable braking at low speeds and manoeuvring when the speed of the vehicle is too low for the servo to take effect. It also is an adjustment for brake pedal travel.

At the anchor point of the toggle there is a bush that keeps everything secure.
We must remember that the Cloud series have attained the ripe old age of 40 years plus and the 1st of the series are now approaching the half-century. Therefore most of these bushes are considerably worn and Ken's vehicle was no exception. This creates a large amount of lateral movement in the toggle and has the effect of creating an uneven application of the rear brakes. Nick was however, able to adjust it enough to improve pedal feel. There is an adjusting nut on the end of the rod and this operation is easily accomplished by any Cloud/ S Series owner, but not too much! Otherwise you may find smoke emanating from the rear wheels as you drive away.

When adjusting the main pull rod to the equalizer it must only be adjusted enough to take up the freeplay at the equalizer and on the rods going to the rear brake expanders. Rear brake adjustment is mainly done at the wheels themselves. The parking brake has its own separate adjustment but this is rarely used.



Nick Lang Adjusting The Rod At The Toggle

Now to the Servo.

Long before vacuum-assisted power brakes were thought of, Hispano-Suiza came up with an ingenious idea of assisting the driver in bringing the vehicle to a rapid halt. Rolls-Royce was very impressed with this system and adopted it on their Pre-War cars right up until the Cloud series. It in effect applies about seven times the force that a person could normally be expected to apply to the brakes and served the company well until the accumulator system replaced it in the Shadow/ T series.

The servo reminds me of the friction motors that powered toy cars in my infancy but of course its operation goes well beyond that. As the vehicle sets into motion, the transmission spins the servo motor, the faster you travel, the more effective the servo. When you apply the brakes, the pedal actuates a linkage that engages a kind of clutch mechanism in the servo, which in turn applies pressure to the master cylinders. Anyone who has experienced servo failure will soon tell you how much he or she had to stand on the brake pedal and visit his or her coronary specialist afterwards.

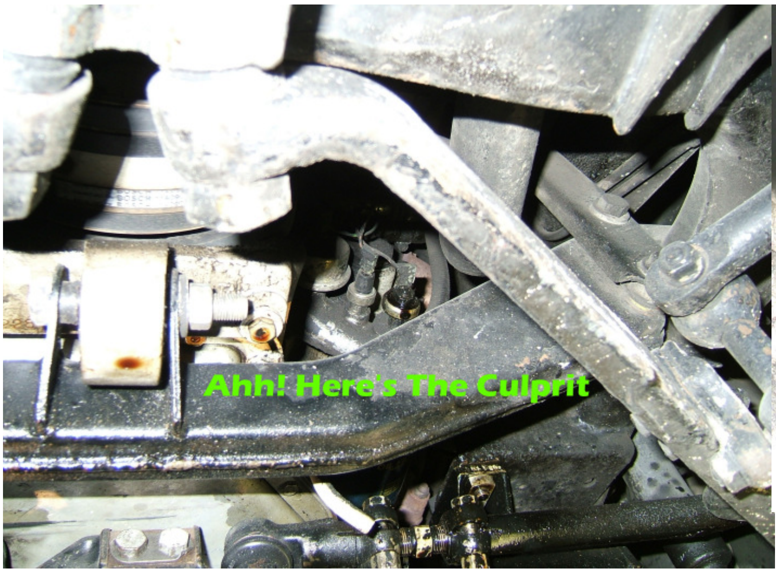
On the side of the unit are two large nuts. One is the locknut and the other is the adjuster.
Nick demonstrated to all present how to adjust the servo motor and the procedure is relatively simple.

1/ Loosen the locknut and have someone turn the driveshaft (Neil Matthews got the honours of getting his hands dirty on this occasion).
2/ Turn the adjusting nut slowly clockwise until movement is just evident on the servo motor.
3/ Back off the adjusting nut ‘Two Flats’ (The flat side of the nut).
4/ Tighten the locknut.
5/ Road test and readjust if necessary.

Having successfully completed this operation to Ken's satisfaction, it now lies with Ken to attend to the other matters before flushing the system at a later date.

Having got jealous of all this attention, my Silver Spur (ANC04359), decided to spring an oil leak and so, up on the hoist it went. No major problem, just the warning light switch sender unit at the front of the engine. One of the less expensive Rolls-Royce items, so a visit to Chapman's for the part is in order next week.

We did note that the supporting brackets were damaged by someone in the past using them as a jacking point (a definite no-no). Neil and Nick did the honours and straightened them sufficiently to clear them from the body. On the way home, a bumping sound that I got used to and thought was normal has now disappeared. Thank you gentlemen.



Our next meeting will be a 'Back to Basics' session when we will be changing the spark plugs, oil and oil filter on Laurence Bottomley's Bentley T Series.
This will be carried out at either Laurence's residence or at his mechanic friend's workshop complete with hoist.

The date will be Sunday, 9th October
Time 10.00 is

'Til next time.

Happy motoring.

Robert Wort

* Photos courtesy of David Wright and Neil Matthews, thank you gentlemen.

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