

Rolls-Royce Owners' Club of Australia Library

Across the Nullarbor in Silver Dawn SFC138 "Helga"

By Lloyd Missen, 1998

Part One

Having the 1997 Federal Rally on the other side of our great continent presented a wonderful opportunity for an "Overlander". All previous Overlanders had been great, but this was twice the distance for those living on the East Coast, therefore it would take twice as long, and it would have to be twice the fun!

At over 8,000 kilometres minimum, if one drove both ways, it would also be a test for one's car, particularly our Silver Dawn, as it had already travelled almost a quarter of a million kms with its eight owners in the forty-five years since being assembled for its first owner, a Mr. Brunskill M.P. of Wagga Wagga New South Wales.

The fact that such an Overlander eventuated, that twenty-eight Club members participated in nine vehicles is now history unfortunately, as I for one found it great fun and didn't really want it to end. This may sound strange as fellow Overlanders expressed concern at my continued interest under the bonnet on the run to Fremantle

If you are interested in our preparation, in my lack of concern, or alternatively concerned as to what I found so interesting under the bonnet on the westward leg and the adventures that unfolded on our return leg, then read on, along with those who have a general concern as to how a somewhat "aged and exchanged sample of one of the Rolls-Royce lineage really performed on such a test.

We had owned our Dawn for five years but because of my many interests which I was trying to pursue in my early years of retirement, we virtually had only driven her once a year on the previous Overlanders and had only completed some of the mechanical reconditioning necessary.

The Dawn had in fact given total trouble free running on the four previous Overlanders which tallied up to some 11,606 kms in our case; the last to the Barossa being the longest where we registered exactly 2,500 miles or just over 4,000 kms; hence we knew the motor was basically strong and we had in fact named our Dawn "Helga" as she went up hills like a Norwegian skier. However, the sum of the ingredients inherent in this Overlander would provide a trial surpassing all previous tests to which we had subjected Helga.

We had planned to drive both ways with some detours on the return leg and when added up, the distance looked very much like being equivalent to the total of all previous Overlanders; i.e. more than 11,000 kms. To maintain our planned schedule, we would be driving at the 110 km/h speed limit of South and Western Australia, which was 10% higher than on previous runs. Ambient temperatures would most likely be near the 40 deg. C. some days and of course we would be somewhat remote from help, mechanical or otherwise if needed. Obviously, one had to take the planning and preparation of the Dawn seriously for this venture.

There were a number of items calling out for attention and the condition of some components still had to be determined and during our three-week January '97 holiday on the South Coast, I set about compiling a long list of items requiring attention/inspection. The list looked formidable, and it meant that Shirley took on the full responsibility of the remaining and surprisingly ever increasing Overlander preparations, motel confirmations, "rally notes" etc. etc---. We both enjoyed eight somewhat frantic weeks prior to departure.

Pre-Overlander Preparations

The work on the Dawn was divided into minor and major tasks. Minor items included a check for oil and fuel leaks; changing the engine oil and filter., topping up the oil in transmission, steering box, differential, front and rear dampers and chassis lube reservoir, insuring that each and every regulator in the latter system was working (dismantling and removing oxidised oil in inoperative regulators, was not a five minute job!); greasing the tailshaft and a check of the condition of the universals, cleaning out the fuel filter and fitting an additional one at the carburettor intake (just in case), a check that both sides of the fuel pump were operative (the pump was rebuilt only 6 months earlier), a thorough check of the front wheel bearings, then repacking and adjustment, a check of the tyres, the clutch adjustment, the carburettor tune, the spark plugs, the points, the static and dynamic ignition timing, the engine vacuum and compression, the windscreen washers, the fan belt adjustment, that all lights were working and that the dynamo (recently refurbished), battery and charging circuit were sound.

We had planned on runs of some 500 kms per day on the 13-day Overlander and I had written to all drivers suggesting that they consider fitting a CB UHF radio as a safety measure. Five of us came so equipped. I fitted a Model 650 Philips unit and for this it was necessary to convert the Dawn's electrical system from positive to negative earth. Not a big job, but another task to be attended to in those busy weeks, mainly relating to sourcing a suitable crimping tool and components to provide reliable extensions to the battery leads.

There were three major tasks requiring attention before departure., brakes, steering and the cooling system.

Brakes

Examination of the rear brakes showed them to be in good condition with plenty of "meat" above the rivets of the linings. They only required a thorough cleaning; however, after a close examination of the front hydraulic system, where one lining was found cracked and all rivets loose on another, I decided that a complete refurbish was necessary. This involved stripping the master cylinder, sand blasting, honing the stainless-steel liner (fitted during some earlier repair) and fitting new rubbers and valve assembly. The brake expanders were beyond restoring by honing, so they were bored out and stainless-steel liners fitted, and new rubber pistons and dust covers sourced. New bonded linings were fitted to the shoes. The steel hydraulic fluid lines were flushed and new hydraulic rubber hoses fitted; surprisingly, the latter was the most expensive single item. To complete the overhaul, adjustment of the servo, followed by seven specific adjustments of the numerous linkages in the brake system in the correct sequence was necessary. A breeze with the Dawn or Bentley MK VI manual in front of you.

After all this work, I filled the system with the best Dot 4 hydraulic fluid but had one problem to attend to before the system was operating perfectly. The master cylinder kit was supplied with a rubber washer not shown in the expanded view in the workshop manual. With some misgivings I initially installed this between the aluminium piston and the rear spring piston retainer. This prevented the piston withdrawing sufficiently and resulted in too high a residual pressure in the lines with the brakes off. It was easily removed but necessitated resetting the linkages, after which the system operated perfectly.

Steering

Ever since we had owned the Dawn excessive play existed in the steering. Obviously, now it was time to bite the bullet, degrease the front end and carry out a thorough examination to see what really needed to be done. It wasn't quite as bad as it could have been. The inner steel bush in the Silentbloc bearing in the upper end of the yoke had separated from the rubber, both lower yolk bearings were "shot" requiring new bearing pins, roller housings and rollers and the steering box needed adjustment. Fortunately, the pivot axle was quite sound. The chassis lubrication system had maintained oil supply to both top and bottom pivot bearings, no water had entered and a maximum up/down deflection of only 0.003" was evident at the outer end of each stub axle. This was a relief as replacement would have been expensive and time consuming. New Silentbloc bearings were installed but were really tight and required a long lever and my full weight on my 2.25 tonne Kmart jack to extract the old ones and then press the new ones home. Not a simple "screw thread exercise" as per manual.



A cleaned-up stub axle assembly with a new Silentbloc bush pressed into the yoke. Shown are the new needle bearings complete with outer journals, original housings bored out to suit, neoprene quad seals, manufactured bearing pin and internal spacer. Washers, not shown, were made to provide the right cavity for the quad seals.

Replacement of the lower yoke bearings was not expensive with the method adopted but required a few hours machining on the lathe; ASSAB Steel (Auburn/Brookvale) provided AIR 4140 steel blanks and a nitriding service after machining. Thus, new bearing pins to original Rockwell hardness figures were produced for a few dollars. Consolidated Bearing Co. (Artarmon) came good once again with suitable components this time with roller bearings complete with outer journals and it was only necessary to bore out the old worn housings to suit- One eight-inch square neoprene 'quad' seals were installed in lieu of original felt seals and should provide better oil retention and water exclusion. With steering box adjusted the Dawn felt like a new car.

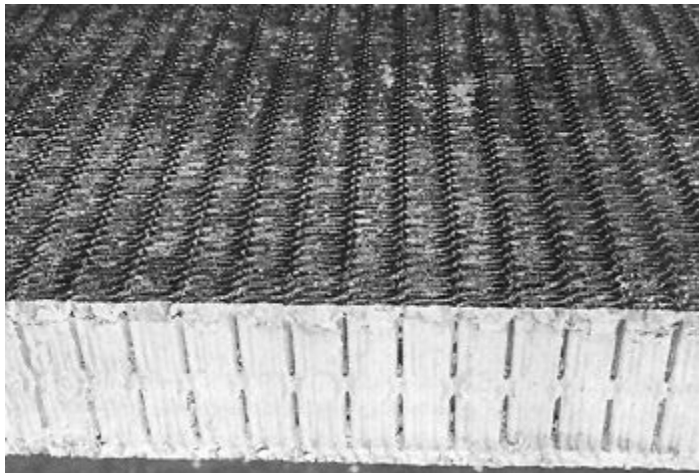
Cooling System

Since we had owned the Dawn the water gauge temperature increased with speed, load (e.g climbing hills) and ambient temperature. I have always felt that if a cooling system is sound then coolant temperature, following the initial application of load, should momentarily rise, but then settle back to a common temperature related to the thermostat design. Our Dawn's didn't.

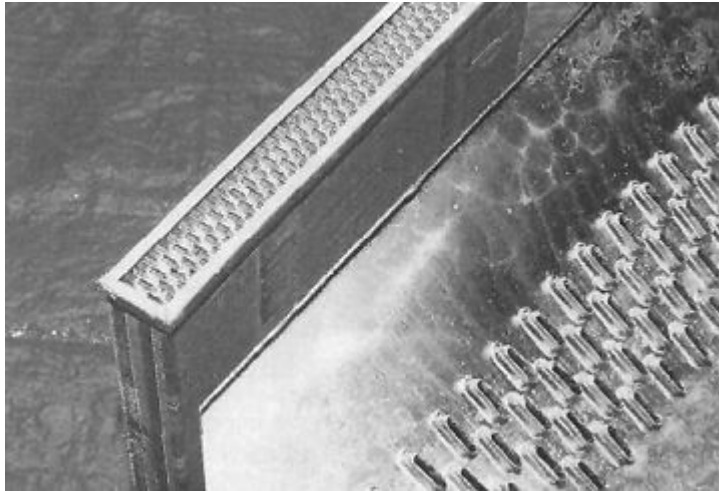
After observing fluctuating temperatures on our first Overlander to Ballarat I had 'attacked' the cooling system. I removed the radiator, water pump, steel plate and spacer behind, the three circular plates on the right-hand side of the engine definitely not a 5-minute job, the rear drain cock and then inserted hoses every which way in the engine block and head. Very little sediment came away and I had to assume all was clean inside.

Prior to reinstalling the radiator, I took it to a large North Shore Repairer to have the top tank removed to determine whether there were tube blockages; however, I was forced to accept a 'reverse flush', an acid dip and a second 'reverse flush'. The radiator was of so-called 'cellular' design, manufactured in New Zealand where the finning and two rows of tubes, front to back, were formed from an assembly of brass zig-zag strips of quite complex shape, crimped and soldered together. With this design and from previous experience, the Repairer was simply not game to unsweat the top or bottom tanks, for fear of ending up with a series of leaks he was unable to seal. Hence, ever since, I have remained unsure of the state of the radiator.

With the distance contemplated to Fremantle and return, the high continuous speed and the very high ambient temperatures likely, it was essential that I knew the state of the radiator before we set out. I therefore visited another Repairer and explained the situation. His reaction was much the same and recommended fitting a new radiator of more conventional design, which I eventually agreed to. The new core consisted of 148 vertical tubes of 2 by 11.5 mm cross section set in four staggered rows front to back with horizontal finning. Natra, the Radiator Manufacturer, prepared the core with the top and bottom plates soldered to the tubes and it was only necessary for the Repairer to solder on the top and bottom tanks and insert the radiator into its frame. I had the radiator back in the Dawn just under 24 hours before departure. Unfortunately, due to time, a run up the hill from Roseville Bridge was its only pre-Overlander trial!



View of the old "cellular" radiator core, unsweated from the top tank, showing some blockage evident in the two rows of tubes, which are formed from an assembly of crimped and soldered zig zag brass strips of quite complex shape.



The new core as supplied by Natra complete with top and bottom plates ready for the Repairer to solder on the original tanks (Bottom plate uppermost), The insert shows the four rows of tubes protruding through top plate.

All the jobs that I had planned to attend to were completed. The Dawn was packed with what we needed for the next month or so, including Shirley's carefully prepared Overlander Driver Packs and heaps of other relevant paraphernalia.

We were ready to leave bright and early on Saturday March 22nd, 1997. With all this loving attention suddenly lavished on our "Helga"; WHAT COULD POSSIBLY GO WRONG?

However, we included with our luggage a full toolbox, multimeter, gasket material, various bottles of Loctite wire, tape, nuts, bolts, etc., Just In Case!