

MORETON INVESTIGATOR ASSOCIATION

Technical Report No. 2 - MAINTENANCE OF TRAILERS

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1. Introduction

The correct maintenance of your trailer is a very important factor in permitting the maximum possible enjoyment from the ownership of your Investigator.

The wheel-loading on single-axle trailers is at the upper limit of tyre and wheel-bearing capacity when loaded with an Investigator. It is therefore critical, if serious problems are to be averted, that the trailer and its components be correctly and regularly maintained.

This report sets out recommendations on the correct maintenance of the critical components of your trailer.

2. Maintenance - Wheel Bearings

HOLDEN L.M. BEARINGS.
FROM "PHOENIX" TRAILERS.

2.1 Wheel Bearings - Operating Conditions

These components are very severely loaded in this application and are at their limit without allowing for the added disadvantage of an occasional dunking in salt water.

On launching, the air space in the bearing housing is hot and the air contracts suddenly when contacted by the water. This draws water in through the seal, and the scene is set for a premature bearing/lubricant failure.

2.2 Wheel Bearing Lubricant

Normal wheel-bearing grease is NOT up to the job in this application. The presence of water in a normal Lithium based grease will cause the lubricant to fail. The grease type required is either Silicone based or Water Repellant.

Suitable brands are:

- Silicone - Esso NORVA 285
- Water Repellant - Ampol RR3

These greases are probably not stocked at service stations; but can be bought without trouble by the Agent.

2.3 Grease Application

The normal construction of wheel bearing housings makes the regular application of grease a tedious and messy job. The suggested solution to this problem is to instal a grease nipple in the housing. This can be achieved by two methods:-

(i) Bearing Cap

A hole 5/16" in diameter should be drilled in the cap and a 1/4" UNF nut brazed on to the outside of the cup concentric with the hole. The nut will need to be re-tapped to clear any welding slag from the thread. A 1/4" UNF grease nipple may now be screwed into position.

2.

Heat must not be applied to the grease nipple because the small spring inside will be ruined and the nipple rendered U/S.

The siting of the grease nipple may vary with the individual trailer design. Two positions are suggested, if practical:-

(a) At the end of the knock on bearing cap, PROVIDED the nipple is well inside the outside line of the tyre - or it will get bumped and broken.

(b) On the side of the bearing cap is probably the preferred location. It requires the installation of a right-angled (90 degree) grease nipple.

This job should cost about \$3 for two wheel caps.

(ii) Wheel Housing

A hole can be drilled and tapped in the wheel hub to accept a 90 degree grease nipple. This method is not desired because of the necessity of removing the wheels and cleaning out the bearings. It is a more robust installation and if the bearings and wheels are to be removed for cleaning and checking and re-packing with new grease it does not inherently present the problems mentioned above.

(iii) A more expensive alternative - the Bearing Buddy

This is a kit, the chief element of which is a stainless steel knock-on bearing cap which contains a grease nipple on a spring loaded plate. The kit also includes a stainless steel inner deflector, a spring loaded seal, and a neoprene O-ring.

The Bearing Buddy Kits are available from Redco Trailers (Redcliffe) and Bert Skuse Marine at Mayne and possibly other retailers. The price for a pair seems to be around \$14. The kits, as far as can be ascertained, seem to be designed for Holden type hubs and stub axles.

The kit is assembled thus:

- (1) stainless steel deflector with its concavity facing the centre line of the chassis.
- (2) spring loaded seal, with its concavity facing outwards.
- (3) inner bearing race.
- (4) wheel hub
- (5) outer bearing race
- (6) castellated nut and split pin
- (7) knock-on Bearing Buddy cap

The bearings and hub are filled with the recommended grease in the usual way. Then, after the assembly, the spring loaded plate carrying the nipple is pumped up with the grease gun until the plate moves outwards, but not so far that the plate has no further distance to travel against its spring.

The Bearing Buddy was reviewed favourably in Australian Boating (April 1976 issue). We know of no one who has yet proved the unit in practice, but No 18 (Windsong) has had her trailer fitted with it.

2.4 Frequency of Greasing

The following is the recommended procedure if there is any likelihood of the bearing housing's being partially submerged (remembering to allow for natural and other waves).

On arrival at the launch site carefully refill the housing with grease, but ensure that the grease seals on the inside have not been pushed out.

After recovering the yacht, re-grease the bearings.

If the set-up is well organized this procedure will take only a few minutes and is probably a good investment.

At the time of writing, K-Mart Automotive Accessories Division market grease guns - KH120 for \$3.64 and KH300 for \$5.27.

3. Wheel Nuts

For those fortunate enough not to have had a flat tyre, these components may not have been given much thought.

Undisturbed, these nuts will seize on to the studs, and when a wheel has to be changed could cause the studs to be broken - with great concern and consternation I can assure you from personal experience.

It is recommended that these items be removed every six weeks and the threads smeared with Ampol White Grease A (a zinc based grease). The nuts can be removed and replaced one at a time without the need to jack the trailer wheel from the ground.

4. Electrical Connections

Bulb and wire terminals can be areas of trouble and the recommendation here is to clean the connections and liberally coat them with Copper Shield. This material is also ideal for the battery terminals of your car.

5. Winch Rope

This rope is subject to extremely high local stress situations, and should be inspected regularly for fraying (before the fray is found with a hand). The swaging should be inspected for corrosion and fretting.

Ideally, the winch rope should be greased with white grease A and if your winch runs out freely, this may not be an unpleasant feature. A short piece of plastic tubing could be split and placed over two feet or so of the rope at the hook end.

Economically, stainless steel rope would deserve consideration when replacement of the existing rope becomes necessary.

6. Hitch Connection

Check the fit of the hitch to the ball regularly, and adjust as required.

White Grease A is recommended for this connection.

Grease the over-rider coupling unit regularly and check its free operation by pushing on the stern of the boat, or observing while someone

stops and starts the car/trailer.

7. Braking System

The drum braking system on most trailers will become inoperative without regular attention and lubrication. The mechanism should be exposed by removing the wheel hub and freed up regularly by using penetrating oil and WD spray compounds.

8. Tyre and Wheel Care

The pressure in trailer tyres is critical to safe and stable towing of your yacht.

Generally, a pressure of 30-35 p.s.i. is the minimum required. The pressure will depend to some extent on the balance of your unit, but too low a pressure in the tyres will cause excessive swaying and instability.

Wheels require attention to the inside of the rims. Rust will form here and weaken the rims to the extent where the rim will burst off.

The removal of tyres and rust preventing are recommended once a year.

A comment on wheels is appropriate here. Our opinion is that 14" wheels are the minimum size for this application, and they should be fitted with heavy duty tyres.

An interesting point is that five-stud Holden hubs take either 13" or 14" Holden wheels. Check first, but if the need to replace your 13" wheels arises give thought to 14" wheels as their replacements.

9. Springs and Tilt

The spring shackles require regular greasing. Unless the shackles are free to move, premature spring breakage will occur.

The tilt, if fitted with grease nipples, should be greased regularly.