

AMC rear w

The rear wheels of AMC heavyweights create all sorts of problems for restorers. Why? AJS and Matchless expert Don Hamilton answers that question and rebuilds one himself with the assistance and camera of Brian Crichton.

THERE are several reasons why the rear hub of an AMC can be a pain in the bum and I suppose the starting point of this stripdown feature is to list them. Owners will find this familiar, potential owners should take careful note.

1: Broken speedometer cables!

2: Wheel bearings. So many bikes have been built from basket cases with wheels obtained at autojumbles it is essential the bearings are carefully checked.

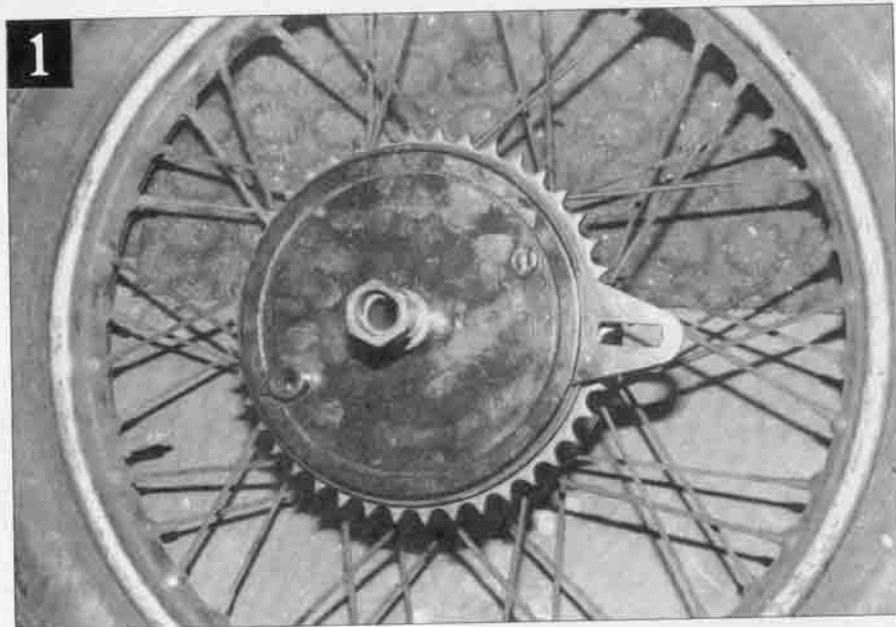
3: Handbook cock-up. The drawings in the official spares list of the component parts of the hub are inaccurate! This (understandably) has caused much consternation among AMC bike owners who can't fathom why the speedometer cables keep breaking.

All will be revealed as Don throws away aforementioned erroneous tome and takes *Classic & Motorcycle Mechanics* readers through the correct method of bearing removal and assembly.

STRIPDOWN

- With the wheel still secured to the swing arm slacken off the nut which secures the speedometer gearbox to the wheel. It will be impossible to do this once the wheel is out of the frame.

- Remove the speedometer cable and link from the rear chain to allow the



chain to be removed from the rear sprocket.

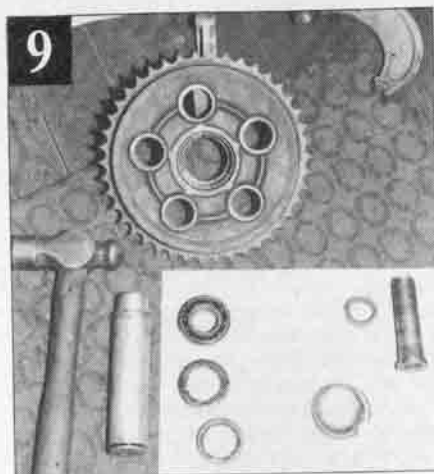
- Remove the wheel complete with the brake drum. Whether or not it is a single sided hub wheel, full width hub or quick release hub wheel, the assembly of the bearings, spacers, washers, oils, seals, etc. is identical.

- The only difference is the quick-release wheel which has an extra bearing in the brake drum. This allows the brake drum to remain in the bike when removing the rear wheel to repair a puncture.

- Our pictures feature a quick-release wheel in fact. Having removed the wheel complete (**pic one**) remove the brake drum from the hub.

- To do this remove the large nut from the end of dummy spindle in the brake drum, followed by washer (missing in this case), spacer, and brake plate (**pic two**).

- This is a good opportunity to examine the condition of the brake shoes (**pic three**). Should renewal be necessary they can be obtained on an exchange basis through the AJS and Matchless Owners Club spares scheme



(address at end of story).

- If they need replacing, lever up one of the brake shoes with a screwdriver. This will expand the two springs sufficiently to allow removal of both brake shoes (**pic four**). It is essential to remove the brake shoe adjusting pins (**pic five**).

- If one or both brake shoes have only moderate wear, it or they can be fully restored to full efficiency by placing a shim or shims behind the adjusting pins (**see pic four**). The shims are .005in thick and should be available through the club. If not, try a specialist supplier such as Hamrax.

- Inside the brake drum there is a second spacer between the bearing and the brake plate. This will fall out when you remove the dummy spindle with a blow from a soft faced hammer.

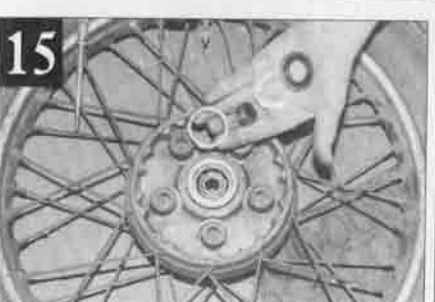
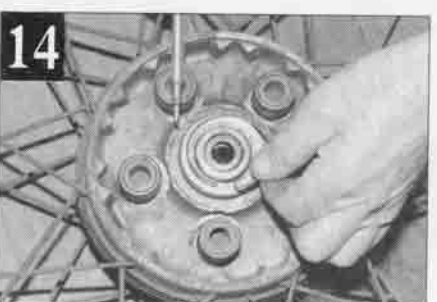
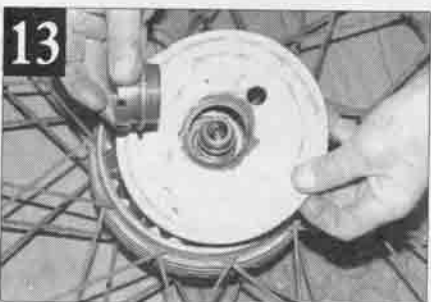
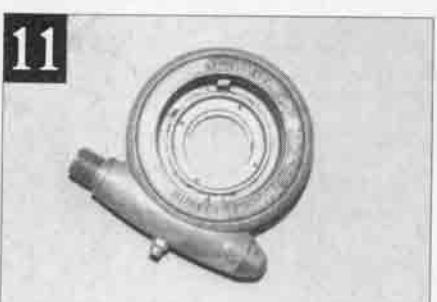
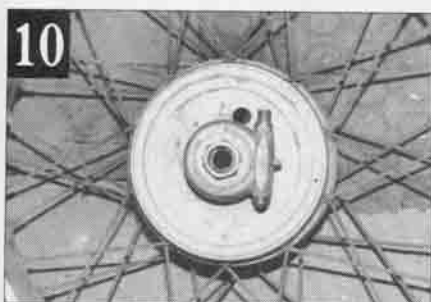
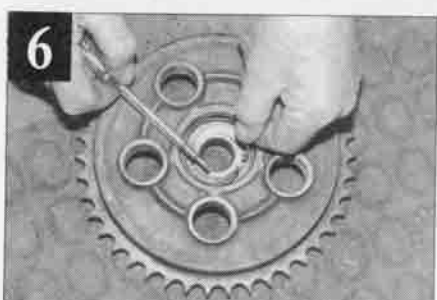
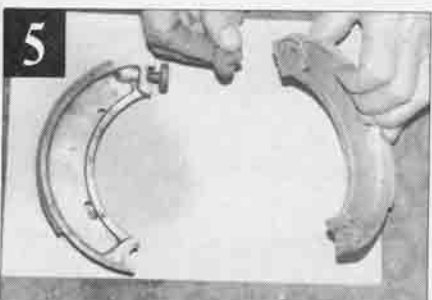
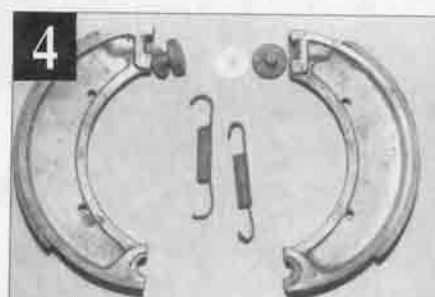
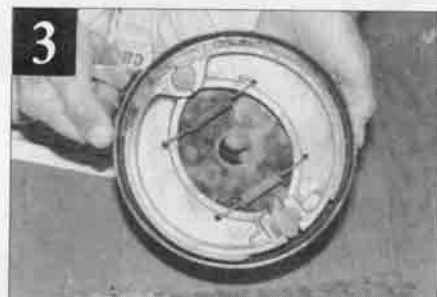
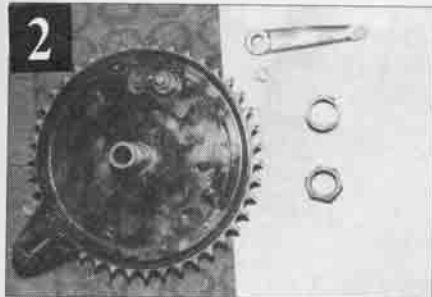
- Should the bearing require renewal carry out the following procedure. Place

Wheel hubs

ADDRESSES

● *AJS & Matchless Club Spares Scheme, c/o Ernie Merryweather, Northants Classic Bike Centre, 25 Victoria Street, Irthlingborough, Northants. Tel: 0933 652155.*

● *Hamrax Motors Ltd, 328 Ladbrooke Grove, North Kensington, London, W10. Tel: 081 969 5380.*



the brake drum face down on the bench. Remove the circlip which retains the bearing with the aid of a screwdriver (**pic six**). Then remove retaining washer.

● Turn drum over and lever out oil seal with screwdriver (**pic seven**).

● The oil seal should be renewed as a matter of course. These seals are not easy to remove. A certain amount of careful force may be needed.

● After removing oil seal, drift the bearing out of the hub using hammer and soft drift (**pic eight**). Don uses an aluminium drift. The spacing washer will then fall out with the bearing. Components are shown in (**pic nine**). It is

essential to use a heavy enough hammer to drift out the bearing.

● Oil seals and bearings can be obtained from the AJS & Matchless Owners Club.

● Placing the wheel with the speedometer side uppermost, remove the nut retaining the speedometer gearbox on the spindle (**pic ten**). Remove speedometer gearbox (**pic eleven**) and check it for free action.

● Having cleaned the wheel around the area on which you are going to work (paraffin and stiff brush useful here) proceed to slacken the speedometer drive locking ring which also serves the func-

tion of securing the aluminium wheel disc. This can be done by using a special C-spanner. If this tool is not available a suitable drift and hammer will do (**pic twelve**).

● This allows the speedometer drive and the disc (**pic thirteen**) to be withdrawn. In the centre of the speedometer drive is a spindle which carries the speedometer gearbox. This can now be lifted clear of the wheel.

● Turn the wheel over and using the soft drift drive the bearing into the centre of the hub about 25 thou (.025in) only. This will enable you to remove the circlip using a small screwdriver (**pic fourteen**)

STRIPDOWN

which retains the oil seal cup.

- The oil seal cup, oil seal, spacer and spacer ring may now be lifted free from the bearing. Components are shown in (pic 15).

- Turn wheel over again (speedometer drive side up). Lever out, with screwdriver, oil seal cup and oil seal, thin washer and spacer (pic 16). Place two blocks of wood under wheel hub (pic 17). Using suitable soft drift, knock out the speedometer gearbox side bearing.

- The drive side bearing complete with the spacer between the bearings and the taper bearing from the brake drum side will come out in one (pic 18).

- Turn the wheel over so the speedometer drive side is uppermost. Replace the correct inner taper bearing into the hubs (pic 19). Place bearing spacer in position and using soft drift remove centre bearing complete with its outer race (pic 20).

- That completes the stripdown and pic 21 shows the components arranged correctly. Note that the small washer (arrowed) between the taper bearing and oil seal always goes on the speedometer gearbox side.

- Failure to observe this will result in the taper bearing being locked solid which in turn will cause the speedometer gearbox to revolve with the wheel thus breaking the speedometer drive cable — a common problem.

- What often happens is that instead of fitting the 'small' washer we have shown here (ie. narrow depth ring), a deep washer (as seen separated from the components in pic 21) is fitted. The differences in depth cannot be seen in handbook diagrams (pic 22) so suppliers incorrectly supply two deep washers (with smaller centre hole) instead of one deep and one shallow type.

REASSEMBLY

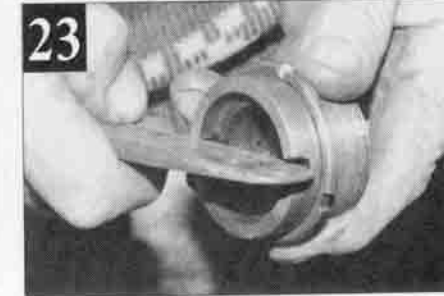
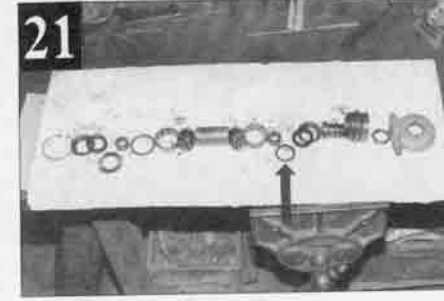
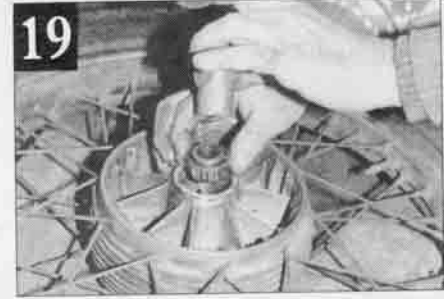
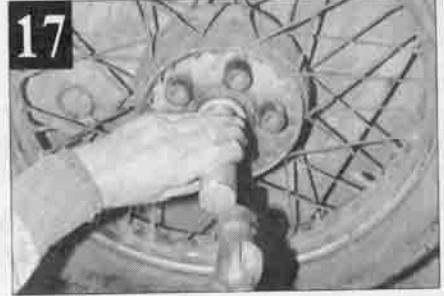
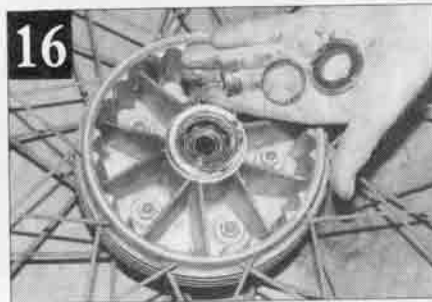
- With the gearbox drive side of the wheel uppermost, insert the outer ring of the taper bearing, driving it just beyond the threads which secure the speedometer gearbox drive. Turn the wheel over and insert the pre-packed taper rollers into the outer ring of the bearing. Place spacer on centre of bearing.

- Place brake drum side roller bearing into spacer and carefully drive in the outer ring of the race. Drive sufficiently beyond the circlip groove to allow the fitting of the spacer ring, larger washer, oil seal and cup, and small spacer.

- All can now be secured by inserting the circlip in the groove.

- Place small washer against the ball race, then oil seal and cup with central spacer in position.

- Secure by winding in the gearbox drive sleeve. This can be done by placing a tyre lever or suitable metal bar in the speedometer drive dogs on the sleeve (as demonstrated in pic 23). Screw in



until the bearing is tight. This can be assisted by lightly tapping on the tyre lever while screwing it in.

- When the bearing is fully seated remove the speedometer drive sleeve.

- Place aluminium disc on hub taking care to position the hole in the disc above the grease nipple in the hub.

- Insert speedometer gearbox spindle into sleeve. Screw locking ring hard against the drive collar of the gearbox drive sleeve and replace in hub. Screw drive sleeve hard up against the bearing.

- Unscrew speedometer drive sleeve half a turn and lock in position with the locking ring, checking that hole in disc is still over the grease nipple.

- Using a suitable drift strike the brake drum side bearing. This will give the required amount of clearance for free running of the bearings.

- Check that the rubbers on the five drive studs are in good order. Replace if necessary.

IMPORTANT NOTES

SHOULD replacement bearings be required these can be obtained from the club, but they are a different size. The spacer between the bearings will require machining to suit the bearing supplier because the centre of the bearing is bigger than the register in the end of the bearing spacer.

Ready machined spacers can be supplied by the club on an exchange basis for a nominal charge.

In the official spares list pictures and in some Matchless maintenance and repair books the oil seal cup (part number 018094) is shown facing the wrong way and in the wrong position.

If referring to an official spares list the order assembly should be: 021583 (speedometer drive sleeve), 021584 (locking ring), 018094 (oil seal cup), 014387 (oil seal), 021585 (small plain washer), 021608 (spacer on spindle for oil seals). The remainder of the official drawing is correct.