



Lift the front wheel off the ground and spin it to check for wobble and eccentricity



Extra life can be obtained from a part worn brake lining by fitting packing washers



The front hub locating washer should stand 1/16 inch proud of the brake drum edge



When re-assembling the front wheel ensure that the brake cover nut is correctly placed



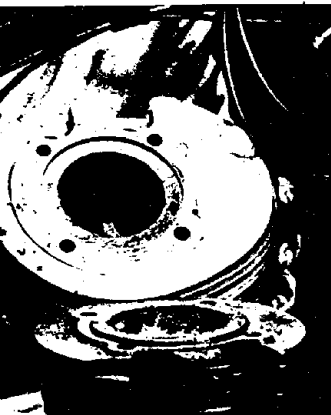
A week-end is long enough

to do most of the work, says MIKE HARRIOTT

ONE of the best ways to start an overhaul is with a free-wheel coast down hill. This uncovers numbers of noises that needn't exist—rattling rear chain and loose guard, the front brake shoes rubbing on the brake plate and perhaps a squeak from the front forks. But these are minor points, the major problem is probably lack of power and snap from the engine. With careful fettling the performance can be improved enormously and restored to its original efficiency. Most of the trouble can be overcome in a week-end.

Starting at the front end and working systematically towards the rear, the first check should be on the trueness of front wheel and tyre fitting. With a 12 in. square wood-block placed beneath the engine, raise the model and spin the front wheel. It should rotate truly with no wobble and no eccentric movements from the tyre.

If the brake shoes were rubbing the brake plate, remove the wheel. Take out the split pin and pin holding the yoke end of the front brake anchor stay. Then the nut on the left-hand side of the wheel spindle can be slackened but not removed. Lastly, it is only a few moments work to remove the four nuts retaining the caps to the fork sliders, so that the wheel can be withdrawn. A clean tin is useful for the bits and pieces and the two caps must



The oily condition of this cylinder head indicates that the valve gear may be faulty



Whilst the head is off place a rag over barrel and tidy up the cables



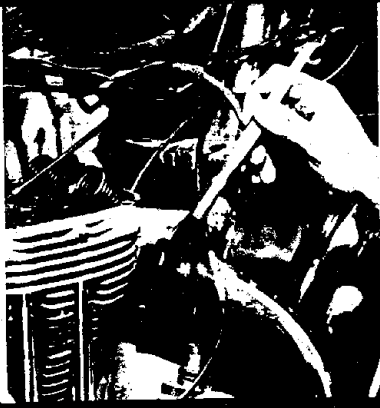
A cylinder head holding tool. Screw plug end in the head and grip the rod in a vice



No tools are needed to get the valve springs out a sharp pull and out they drop



Draining the oil from front forks. Replenish with 6 oz. of Castrolite in each leg



The exhaust pipe may be a bit stubborn, but can be eased with a little paraffin



Removing the tank on this machine showed untidy cables and distorted rocker rubber



Undo cylinder head nuts and release the head by turning the piston over compression

be scribed before removal (left and right) so that there is no mistake on re-assembly.

With the removal of the brake plate nut, the brake assembly is withdrawn from the spindle and any trouble revealed. On both brake shoes the rivets may be flush with the surface of the linings and burnished brightly. These cause squeak and inefficient braking and damage the drum. The makers exchange shoe service is the best bet, as the saving by fitting new linings to shoes is negligible.

Fitting brake linings

The new brake linings and shoes, complete, should be fitted—omitting any packing washers that may have been used before—and the front brake cover plate correctly positioned. This is located on the spindle by an inside nut and another outside. Between the inside nut and the cover plate is the locating washer. Make sure that the nut is positioned so that, when the locating washer is pushed up to it, the outside face of the washer is 1/16 in. proud of the outer edge of the brake drum—check with a ruler. The outside nut is fitted hexagonal side against brake cover plate. The front wheel is then ready for re-assembly.

With the model supported on the wooden block, the opportunity should be taken to check for any steering head bearing play. There must be no free up and down movement on the front mud-guard, while holding the other hand under

the head lug. The handlebars should turn nicely from lock to lock with just the merest trace of resistance. The front wheel can then be refitted (remembering to replace the two caps on their correct sliders) and the brake then centralised by leaving the cover plate nut slightly slackened, fitting a box spanner on the expander lever and maintaining pressure while the cover plate nut is fully tightened.

Last job on the forward end is the fork. If the springing is soft with a bad damping movement it may be due to lack of oil. Another pointer to this diagnosis is an occasional squeak. Firstly remove the wood-block and with full weight of the machine resting on the two wheels, place steady blocks under each footrest. Unscrew the hexagonal plugs on top of each leg and starting with the left-hand leg, remove the drain plug at the base and drain all the oil.

When the flow has stopped, replace the drain plug. The top hexagonal nuts (to which the damper rods were attached) should be worked up and down in a pumping action to eject any oil trapped in the damper tubes. A two minute wait and the drain plug can again be undone and a little more oil caught. With the drain plug reinserted for the last time, precisely 6 ounces of Castrolite (s.a.e. 20) should be carefully poured into the top of the tube. The whole process is repeated with the other leg.

And so to the "powerhouse." Remove

the tank. The two petrol taps obviate the need to drain the tank before removal.

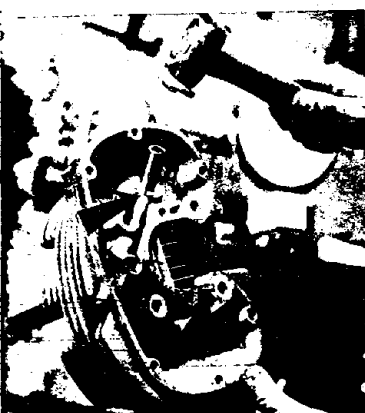
Next the exhaust pipe and silencer, the complete system being taken off. With the removal of the two retaining nuts, the exhaust pipe may be a bit stubborn and will not free easily from the exhaust port. A drop of paraffin brushed around the offending part soon helps to release it.

Undo the carburettor retaining nuts and with the component free, replaced on the studs. Unscrew the throttle and air slides from the body, the former to be wrapped in clean rag and stowed out of harms way. Off with the nuts and washers from the rocker box side cover and the oil pipe to the rocker box. After the engine has been turned over to ensure that both valves are completely closed, take off the nine holding bolts.

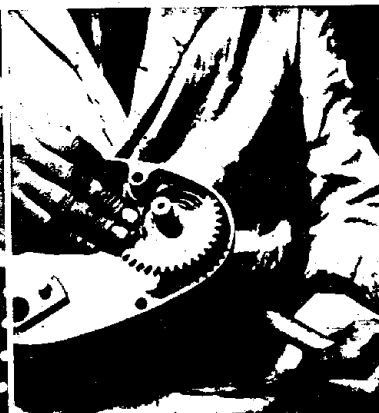
Removing rocker box

Then, with the valve lifter cable disconnected, the right hand side of the rocker box should be jarred with the heel of the hand, tilted upwards and the push-rods removed. The exhaust pushrod must be placed inside the dismantled exhaust system ensuring there will be no mistake on replacement. The rocker box is then taken off. If examination reveals that there is no wear on the spindle bushes of the rocker box, no end float or side play, then the component may be considered suitable for further service with no attention necessary.

Undo the nuts on the head and release



Fitting a new valve guide. The oil hole must line up with the pointer (arrowed)



Winding up a new kickstarter spring, taking care to hold the cover firmly in one hand



Oily clutch plates should be cleaned in patrol and roughened up with the wire brush



Refitting the clutch plates. Note the method of checking the primary chain tension.

1. On late models support toolbox underneath when undoing knurled knob. This will save dropping and damaging paint of toolbox lid.
2. If you find that air-filter rubber connecting tube tends to sandwich through deterioration, a coil of stout copper wire (one or two turns will do) can be inserted as a support.
3. The P.V.C. beading fitted around chromium tank panels can also be used to decorate other edges, rear number plate, etc.
4. Slightly slacken headlight retaining bolts in foggy weather; light can then be tilted easily to avoid glare.
5. Paint rear chain spring link with dab of white, useful for quick location, particularly after dark.
6. Remember push type petrol taps have different shapes for on and off. Serrated = off, hexagon = on.
7. Don't forget to periodically clean air filter gauze, if fitted. Difficult to detect performance fall-off if this is neglected.
8. Always adjust tappets when Warm, NOT hot.
9. A sturdier than most kickstarter rubber can be obtained by using a pillion footrest rubber from a Matchless 250 model G.2.
10. Remember to place a duster under steering head when removing petrol tank.

11. With coil ignition models, use your spare ignition key inside toolbox lid with piece of cellophane.
12. The makers supply a very substantial thief-proof lock bar to fit most models for a couple of shillings.
13. Safety bars must be safe. The manufacturers supply a really robust 2-bar type designed specifically for A.M.C. models.
14. If your machine is fitted with latest type oil tank, do not overfill. Although it is possible to fill higher than the recommended mark, do not be tempted.
15. For those with an eye to smartness, the sleek new midguard on current models will fit most of its predecessors.
16. Do not use multigrade oils, these are not recommended for Matchless or A.J.S. machines.
17. "Tekall" is an excellent weather-proofing fluid for rims, etc. It wipes off easily with paraffin and is transparent.
18. Do not forget a touch of wax polish on cable outer covers. They polish well and are then resistant to the elements.
19. For re-build enthusiasts, late type engines can be fitted into earlier frames on an interchangeable basis.
20. If you are a new owner, what about the A.M.C. Owners' Club? Address: A.M.C. Owners' Club, 22 Holland Avenue, Cheam, Surrey.

new, or cleaned up and past inspection, are then re-assembled, using the standard valve spring compressor advocated by the makers.

This is a simple tool which can be bought cheaply or even made up at home. As a final check pour petrol into the inlet and exhaust ports as a leak test. If there is no seepage past the valves, the head can be replaced. At this point, check the carburettor. Clean the float chamber and the jet and verify the needle settings as correct. The only part that may show heavy wear is the throttle slide and if this is so, it must be replaced. Make the flange for the carb. body a perfectly flush fit before replacing.

Replacing kickstarter spring

To replace a broken kickstarter spring. Drain the gearbox of oil. Detach the clutch cable completely from the gear box shell. The gear indicator disc should be unscrewed and also the five cheese head screws in the case cover. The entire cover can then be pulled free. It is a moment's work to remove the broken kickstarter spring and replace by inserting the new one, fitting the end over the stop peg and winding up by holding the cover in one hand and winding the kick starter with the other. The cover is then replaced, the box filled with fresh oil (s.a.e. 50).

If you have detected a certain amount of clutch slip and gear changes have not been as sweet as they might have been. Some of this may be due to a very slack rear chain, but the clutch should be suspect, too. Remove the primary chain case outer half after draining and take out and examine the five clutch springs and clutch spring cups. By using the old trick of comparing an old clutch spring with a new, you may decide to scrap the former. If the cups are undamaged they can be retained.

The clutch plates, on removal, may be oil impregnated and very smooth. A thorough wash in clean petrol and a roughing up with a wire brush will restore the inserts to a satisfactory state. The clutch thrust rod is next withdrawn and the end examined for any signs of "bellling." There should be none. Adjustment to the clutch springs is made by screwing the clutch springs right home and unscrewing exactly four complete turns.

Checking primary chain

While the chain case is off, the primary chain should be tested for adjustment, $\frac{1}{2}$ -in. whip. Teeth on the engine sprocket must show no sign of "hooking," and by spinning the clutch with the kickstarter (gear engaged, clutch withdrawn) the clutch assembly should pull up squarely. All parts cleaned, the chaincase replaced and filled with fresh oil.

Still working on the drive side, examine the rear chain. If there is a great deal of slack apparent, and no further adjustment possible on the chain adjusters, scrap it and replace with a new one.

With the last of these major jobs completed, the rest is just routine maintenance. Drain oil tank and refill, check battery, pillion rests, dualseat fixings and other items and tighten where necessary. The model is now ready to give you many miles of trouble-free motor cycling and for a long time to come, you should need to do no more than routine maintenance.

by kicking over compression. Take away complete with pushrod cover tubes. Oily and heavy carbon deposits indicate that either the bore is worn or that the valve guides are no longer fitting snugly to their stems.

Before starting work on the cylinder head, the electrical harness and other control cables can be tidied up and re-attached to the top frame tube; care being taken to ensure gradual, clean sweeps on clutch, throttle and air cables, etc., and those that show signs of bad fraying discarded ruthlessly.

With the cylinder head on the workbench inspect the sparking plug. If badly burnt, the plug must be scrapped.

A useful tool

A useful tool can be made from an old sparking plug and a length of $\frac{1}{2}$ in. diameter solid steel. Brazed together, the plug body will fit into the cylinder head orifice and the other end can be clamped into the vice. You can then work comfortably with no strain on yourself and no risk of damaging the alloy head.

The valve springs are easily removed. This requires no tools, the springs being simply freed by hand. With a finger in each coil, a sharp pull and they are out.

The top spring collar and split collet of each valve are best placed in a tobacco tin and then the valves can be withdrawn. If the guides are badly worn and the springs have lost most of their tension, scrap these items.

After decarbonising, the valve guides can be removed. Being a force fit, it is necessary to use a suitable drift. After removing all traces of burnt oil and carbon drive the guides out and down into the ports. It helps to heat the head beforehand in the kitchen. The fitting of the new guides must be completed before the head has time to cool. These are inserted by putting each guide on to the valve stem and pressing hard to start the insertion evenly. Align the oil hole correctly. Check protrusion—each guide is allowed to protrude to the correct $\frac{1}{2}$ in. amount. Once the guide has been press-fitted it should be tapped home with a hide or wooden mallet. Both the valves are then ground and you will probably find that the inlet will respond to a light grinding. The exhaust may reveal a few bad patches of face pitting. This can be re-faced at the local garage for a small charge. The old valve springs, if compared against a new set will soon show if they can be used again. All components either