HINTS ON THE UPKEEP AND ADJUSTMENT OF RALEIGH BICYCLES
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YOUR RALEIGH BICYCLE

There is much truth in the old adage “Leave well alone” as applied to your Raleigh Bicycle. Before it reaches your hands it is carefully surveyed by long experienced mechanics and so far as its moving parts are concerned, is adjusted to give the best results over a long period. Any slight slackness or tightness which may reveal themselves are there for a definite purpose and will in a very short time disappear and leave you with a sweet running, trouble free mount. “Leave well alone.”

Observance of the few hints and tips given in this booklet will ensure your Raleigh being always in the best condition and ready to meet any call you make upon it.
Let pride of possession be a strong point. Not periodically, but when it requires it, give your machine a good clean, so preserving its enamel and plate and retaining its pristine newness.

For those who have not the leisure or inclination to look after their machine, we suggest that it be taken at regular intervals to the Raleigh dealer, who will be pleased to maintain it in first class condition for a nominal charge.

LUBRICATION

To ensure sweet running and long life, carefully and often lubricate all bearings and moving joints. The crank bracket, hub and pedal bearings, top and bottom of steering head, brake joints and free wheel will repay frequent attention. Use only the best bicycle lubricating oil—your Raleigh dealer can supply this.

If your Raleigh is not fitted with a gearcase, remove the chain occasionally, wash it in paraffin and immerse it in melted tallow, working it in the joints and wiping off the surplus before replacing the chain.

If you have a gearcase, insert about a teaspoonful of oil through the lubricator on the top of the case, gently revolving the cranks awhile so that the whole of the chain receives its quota of oil. Regard your chain case as a dust and dirt excluder more than as an oil sump.

ADJUSTMENT

HANDLE BAR (Reference Fig. 1)
Expander Bolt Type. Slacken the coupling nuts “A” and “B” (Fig. 1) on the brake rods. Unscrew the expander bolt “E” three complete turns and knock downwards; the bar can now be moved to the desired position. Screw up the expander bolt and coupling nuts “A” and “B”; the brake pads will have altered their position and must be held at about 3-32nds of an inch from the rim whilst doing this. At least 2½ inches of handle bar stem must be left in socket.

Head Clip fitting Type. Slacken the hexagon nut on the side of the clip and the handlebar stem is then free to be raised or lowered. Tightening up this nut will then lock the stem in the required position.

RIM BRAKES
Front. (Reference Fig. 1).
Loosen the nut “A” (Fig. 1), and bring the rubber pads so that they just clear the rim when wheel revolves. See that the hand lever “K” is in its lowest position, then tighten the nut “A.”

Rear.
Loosen the nut “C” and press “D” forward to bring the rubber pads nearer to the rim, and vice versa to give more clearance.

ROD OPERATED HUB BRAKES
Front.
Tighten the Knurled Thumb Nut at the bottom end of the rod. Adjustment at “A” (Fig. 1) should only be made when the handlebar height is altered.

Rear.
To compensate for wear in brake linings, adjustment is made by the Thumb Nut “Y” (Fig. 2). Adjust-
height of handlebar, or to take up initial slackness in brake rods. The component "X" (Fig. 3) should be a distance of approximately 1/16-in. away from the frame lug in the brake free position.

Upon completion of the above adjustments the wheels should be tested for free running.

**CHAIN**

The correct tension is when there is a sag of about one inch of the bottom portion of the chain. To take up excess slackness, loosen rear wheel axle nuts and screw up nuts "C" (Fig. 4) until correct tension is obtained. Tighten axle nuts and nuts "C."

**CHAIN BRACKET BEARINGS**

With lock ring.

Slacken the locking ring "A" (Fig. 5) by turning to the left with the special key "B." Screw up the loose cone "C" quite tight then slack off about one-eighth of a turn. The crank axle should revolve freely.
without any play. Screw up the locking ring tight when the bearings are adjusted.

CRANKS

The removal of the cranks is effected by unscrewing the nut “D” (Fig. 3) on the cotter pin and tapping smartly the threaded end of the pin until it can be withdrawn. The crank can then be drawn off the axle. It is a good plan to only partially remove the nut “D” so that it may protect the end of the pin from injury when tapped. Should any considerable amount of force be required to knock out the cotter pin, a piece of wood should be interposed between the hammer and the end of the pin, the crank should be supported underneath when hammering the cotter pin, for if not, the bearing is liable to injury if much force is used. Note when replacing the cotter pins that they are inserted correctly, or the cranks will not lie in line with each other. The head of cotter on one side should always point in the opposite direction to that on the other side.

SEAT PILLAR

This should be so adjusted that when on the saddle the rider’s heel will find rest on the pedal when the latter is in its lowest position. At least 2½ inches of the pillar should be left in the frame tube.

STEERING HEAD
(Reference Fig. 6).

![Diagram of steering head](image)

Fig. 6.

Slacken the lock nut “A” (Fig. 6) with the special portion “C” of the combination spanner, then turn the adjustment nut “B” to the right to tighten, and to the left to loosen the bearings. Screw up the lock nut “A.” With machines fitted with head clips it is necessary to slacken the hexagon nut on the side of the clip before proceeding as above.

WHEEL BEARINGS
(Reference Fig. 7).

Slacken nut “A” on the end of the wheel axle (Fig. 7) on the opposite side to the chain, and with the combination spanner screw up the
movable cone "B" until all play is taken out of the bearing. Then tighten axle nut "A." The wheel must, however, be allowed to run freely enough to oscillate with the weight of the valve, and must be in a perfectly central position between the fork sides or stays.

**WHEEL REMOVAL**

To remove the wheel it will be necessary to disconnect the brake pad holders. To do this unscrew the hexagon nuts from the small square-headed bolts which attach the pad holders to the stirrups, the pad holders will then come away. Remove the axle nuts, and in the case of the front wheel withdraw along the slots at end of fork. With the rear wheel the chain must be taken off first, then loosen the axle nuts; the wheel will then draw out along the adjustment slots.

**FREE WHEEL**

Don't try to adjust or take the free wheel off the hub.

**PEDALS**

The pedal bearings are adjusted at the outer end. Take off the cap, unscrew the locknut, and tighten or loosen the cone at the end of the axle. To do this the feather washer must be loosened from its seating; this can be done by a penknife blade point. Afterwards screw up the lock nut and replace the cap.

To remove the pedals from the cranks, loosen the pedal axle by means of the flats at the crank end, turning the right-hand pedal axle from right to left, and the left-hand pedal axle from left to right.

**HUBS**

Hub dust caps can be taken out and before replacing to make a tight fit give boss that fits in cup a few light taps with a hammer.

**SPORTS MODELS AND LIGHT-WEIGHT CYCLES**

The rear hub has a sprocket each side and to obtain a different gear it is necessary to unscrew the two wing nuts, slide the wheel forward until released from the frame slots, reverse the wheel and assemble in a like manner, drawing the wheel back until the chain is correctly adjusted. Tighten wing nut on chain side and then make sure
wheel is central in the chainstays before tightening opposite wing nut.

DETACHABLE CELLULOID MUDGUARDS

The front guard is held in position by small brackets attached to the fork. To detach, unscrew small wing screws four or five turns, when same will slide out of brackets.

The nut behind the fork crown should now be loosened and the guard removed by a sideways movement which releases the fork crown attachment.

Front guards with separate spear points are handled in a slightly different manner. After unscrewing the wing nuts and sliding same out of the brackets, turn the fork and swing the guard upwards. This detaches the fork crown attachment and releases the guard.

The rear guard is released from the small brackets in a similar way by unscrewing the wing screws after which the bottom spring clip near the chainwheel is pulled out of engagement. The spring clip behind the rear brake should now be pushed forward so releasing the complete guard. Assemble in the reverse order.

CALIPER BRAKES

These are readily adjusted by unscrewing the locknut underneath the knurled adjusting screw on the brake itself, turning this same screw to the right or left until brake is adjusted correctly and finally tightening locknut.

It is advisable to detach the operating cable occasionally and insert a few drops of thin oil. This materially increases the efficiency of the brake.

Raleigh Detachable Gear Case

(Reference Fig. 8)

TO DETACH CASE

Remove slide and take out the disc (by inserting coin or other thin metal article between rim and body of case) and carefully pass it over the crank and pedal through aperture left by the slide. Take out small screw “B” and draw the end cap “A” as far back as possible, then upwards when the end cap will come away. The chain and chainwheel now being exposed,
remove chain by taking out chain bolt at the place left open by the removal of "A," pulling it along the top of the case and out at this opening. Remove chain wheel by knocking out the cotter (see section on cranks) and drawing the crank off the axle. Remove the rear wheel (see section on wheel bearings page 10). Take out the Back Stay Screw at "H" when by unscrewing and removing the hexagon headed screws at "M" and "N" the whole case will slide easily from the frame.

Points worth knowing

THAT the rear wheel can be taken out of the machine without removing the case.

THAT it is unnecessary to carry more oil in the case than sufficient to allow the sag of the chain just to touch the surface.

THAT the motion of the machine and the revolving chain do the rest.

THAT the oil may be drained out through the aperture "O." In order to do this, raise the front of the machine to the necessary angle.

THAT it has all the advantages of a fixed case with none of the disadvantages.

THAT it is easier to take off and put on than the ordinary gear case.

TO REMOVE TYRES

First deflate the tyre—remove the valve and the lock nut on the valve stem, then on the opposite side of the chain, press the cover all round from the edge to the centre of the rim; insert under the cover near the valve a tyre lever or, if this is not available, some blunt article such as the end of a key or tablespoon. Using the edge of the rim as a fulcrum, lever the side of the cover over the rim; having it over in one place, another tyre lever should be similarly used a few inches from the position of the first lever, it will then be an easy matter to force the tyre over the rim with the fingers.

To replace, put the valve stem in the hole in the rim, screw on the valve, not the lock nut; and slightly inflate the air tube; raising the edge of the cover, push the tube into position, taking care that it is not twisted or stretched in one place and crowded in another; then, taking the edge of the cover close to one side of the valve, press
it with the fingers over the side of the rim; continue this round the wheel until nearing the other side of the valve; the edge of the cover having become tight, spring it into place by hand and do not use the tyre levers unless absolutely necessary. Take out the valve, press the valve stem upwards to allow the edges of the cover to get under the valve seating, screw on the locking nut, fix the valve and inflate the tyre. Care must be taken that the air tube is not caught between the edge of the cover and the rim.

LUBRICATION

The bearings of the crank bracket, hubs and pedals should be lubricated, say, after every 100 miles of riding. Use only a few drops of Raleigh lubricating oil. The top and bottom of the steering head, brake joints and free wheel should be oiled at longer intervals.

FREE WHEEL

An occasional cleaning of the free wheel is necessary by injecting paraffin, to clean all dirt out, remembering to use Raleigh Bicycle Lubricating Oil afterwards. Heavy body oil or oil thinned down with paraffin will clog the free wheel action.

CHAIN

The most effective way of lubricating the chain after cleaning it by washing in paraffin, is to immerse it in melted tallow, which should be allowed to work into the joints, the surplus being wiped off. A coating of vaseline is a good protection against mud, and may be used by those who have not the leisure to treat the chain with tallow.

PEDALS

The pedals are lubricated by injecting oil through the oil hole in the dust cap.

RUBBER PEDALS

CARRIER BICYCLES

When these pedals are assembled the bearings are packed with good quality grease which should last for an indefinite period, the rubber excluding water and dirt. If the pedals become stiff in action or denote in any way that lubrication is necessary, the rubber casing should be pulled from the pedal bearings. It may be necessary to utilise levers, etc., to remove the rubber. The complete pedal barrel is thus exposed and the hexagonal end cap should be removed giving access to the spindle nut and bearing cone. The pedal can be
completely dismantled, cleaned, and the bearings repacked with good quality grease and assembly can then be carried out in the reverse order.

LUBRICATING OIL

It is a matter of the first importance that the oil used for lubrication should be both of good quality and suitable. A bicycle is a light running machine and its easy running depends upon the perfect fit of its bearings, bearings designed with balls so as to create the smallest possible amount of friction, with the least possible amount of attention.

Don't use a thick heavy oil; don't use a vegetable oil; the first is not suitable for light bearings, the second will only leave a deposit and "gums them up" and you will blame the cycle for the fault of the oil.

If you have any doubt regarding the oil you have been using, use Raleigh Oil. Wash every bearing well with paraffin, then inject a little oil into each bearing.

Don't pour it in until it comes out over everything; the machine runs no better for being oily and dirty outside; any traces of oil on the outside should be removed.

CLEANING

Enamel. Remove all dirt with a wet rag, or preferably, paraffin, then wipe over with an oily rag and polish with a clean dry rag. This will give a bright finish and prevent rust forming in any scratches which may have penetrated the enamel.

Do not remove dirt with a dry rag as this may score the surface of the enamel and cause it to lose its lustre.

Chromium. Dip a piece of rag in a solution of soft soap and hot water, wipe over, then polish by rubbing lightly with a clean rag and a trace of oil. Chromium plating requires no other attention. Heavy rubbing should be avoided.

Do not use any kind of metal polish on chromium-plated parts.

ONCE A MONTH

1. Give your bicycle a thorough clean.
2. Generally adjust and see that all nuts are tight.
3. Lubricate all moving parts with Raleigh lubricating oil.
4. Keep tyres well inflated to ensure easy running and light steering.

... ... and you will be amply repaid for this little trouble by years of trouble-free riding. The value of your bicycle too, will be maintained.
THE RIGHT LUBRICATING OIL IS "RALEIGH"

Lubricating oil will keep the Raleigh bicycle efficient, and for this reason we urge all "Raleigh" Bicycle owners to use this special oil. It has been prepared for your protection and also to retain that sweet running for which "Raleigh" machines are so world famous.

"Raleigh" lubricating oil is as essential to your equipment as a pump and you should never be without a supply.

OBTAINABLE FROM ALL RALEIGH AGENTS.

PRICE
6d.
PER TIN