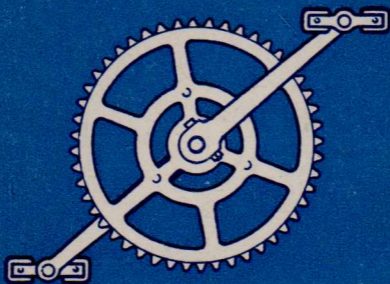


ALL YOU WANT TO KNOW  
ON  
**CYCLING**

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THREE SPEED GEARS,**



**BRAKES, HINTS & TIPS,  
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# BOTTOM BRACKET ASSEMBLY

SLOTS FOR  
LOCKING

LUG

AXLE

OILING  
NIPPLE

CUP

LOCKING RING

CUP  
LOCKING  
HOLES

REAR  
MUDGUARD

LOCK NUT FOR HEAD  
& HANDLEBAR STEM

ADJUSTING NUT  
FOR SADDLE HEIGHT

HANDLEBAR  
STEM

BRAKE  
SHOES &  
BLOCKS

TOP  
TUBE

BRAKE  
CABLE

SEAT  
STAYS

SEAT  
PILLAR

BRAKE  
LEVER

REAR  
LAMP

HEAD

LAMP  
BRACKET

SEAT TUBE

DOWN  
TUBE

RIM

FRONT  
FORKS

VALVE

FRONT  
HUB

COG OR  
FREEWHEEL

COTTOR  
PIN

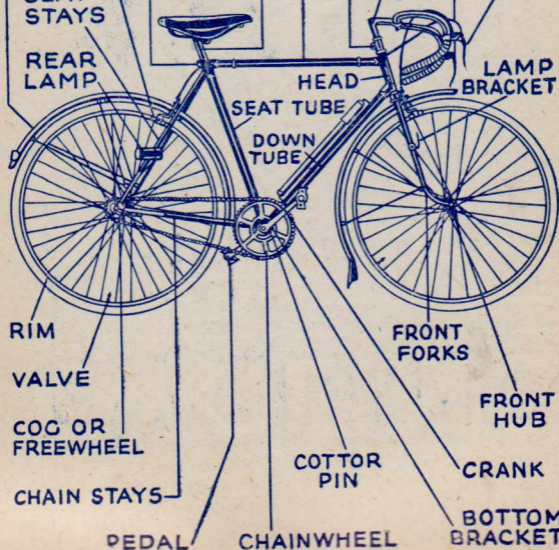
CRANK

CHAIN STAYS

PEDAL

CHAINWHEEL

BOTTOM  
BRACKET



## FOREWORD.

The bicycle is the cheapest and handiest form of transport. Whether it be for riding to work or business, for shopping, visiting friends, for evening or week-end spins or a holiday tour, the bicycle is always ready for the occasion.

Purchase and maintenance costs are very cheap compared with the years of service rendered, and only a few simple rules should be observed to keep the machine in running order.

Apart from the undoubted usefulness of the bicycle for business and pleasure purposes, the value of cycling from a health point of view cannot be too strongly emphasised. Doctors are unanimous in describing its beneficial results. Even if only used for business purposes, the rider will benefit by improved general health.

When used for pleasure spins in the country, the bicycle has the knack of taking the rider completely away from all worries and cares. It provides a complete change from everyday routine and gives the cyclist freedom to wander along the country lanes, with stops for rest or refreshment at will.

For those interested in the sporting side, there are racing tracks and also the road Time Trials which take place on Sunday mornings on country roads. Rewards are small for the winners of Time Trials, and riders participate for the good clean sport which it provides. There are events at all distances for both men and women.

## TYPES OF MACHINE.

1. The ordinary ROADSTER bicycle, for use when riding to and from business, shopping, or exclusive town use, usually has  $1\frac{3}{8}$ -in. or  $1\frac{1}{2}$ -in. wheels with "Westwood" type rims and brakes which pull up under the rims. Saddle is optional, being either of leather or the "spring" variety, and the models can usually be obtained with 3-speed gears or single free wheel.

Mudguards are of steel and fitments are usually of the heavier kind (strength being the main consideration) and flat handlebars are standard. An oil-bath gear case, protecting the rider from chain grease and dirt, can be obtained for a small extra charge.

2. The LIGHT ROADSTER. This machine can be used for similar purposes to the heavy roadster, but owing to its much lighter construction it can also be used for pleasure riding. The frame is lighter and the wheels are 26-in. by  $1\frac{3}{8}$ -in. or  $1\frac{1}{4}$ -in. with "Endrick" rims which allow the much lighter calliper brakes to be used, operating on the side of the rim. Speed gears either of the hub or Deraillleur type can be fitted, and celluloid mudguards save more



weight. Handlebars are of the flat variety, and saddle is to choice.

3. The **SPORTS MODELS** produced by all the well-known manufacturers are for those who ride their bicycles mainly for pleasure purposes, and like the feel of a fast and lively mount. They can, of course, be used for business riding, and, generally speaking, they are a useful all-purpose mount.

The frame is made of light alloy steel, similar to the tubing used in aircraft construction. The wheels are 26-in. or 27-in. by  $1\frac{1}{4}$ -in., "Endrick" pattern, and sometimes, for the fast rider, special narrow section wheels known as "high-pressures." These are fitted with motor car type valves and can be inflated much harder than ordinary tyres, consequently reducing the area of tyre coming into contact with the road, and so requiring less effort on the part of the rider. The disadvantage is that they are not quite so safe in wet weather.

The rear wheel is either fitted with a 3-speed hub or is of the double-cog type with a free wheel on one side and a fixed cog on the other. The wheel can be changed from one to the other in a few moments. Some expert riders definitely prefer the "fixed" wheel, which gives a better sense of balance and is useful for braking slowly on slippery surfaces.

Tyres are of a lighter and speedier type and celluloid mudguards are standard. Eyes for front and rear lamp brackets are brazed on to the forks and handlebars are of the "dropped" variety, of which there are many patterns. These allow of several riding positions, which is especially useful on long journeys.

4. The **HAND-BUILT LIGHTWEIGHT**. Enthusiasts nearly always have their machine made to measure. In other words, they go to their local lightweight builder and tell him exactly what kind of frame, wheels, tyres and speed-gears, saddle and brakes they require, and the machine is built to their own specification. Charges, of course, are slightly higher, but the machines are hand-built to your own choice, with hand-filed lugs and many other refinements not to be found on mass-produced machines.

Special cycles with alloy or wooden rims are produced by these makers for road and track racing, and the joy of riding a real lightweight has to be experienced to be believed. These makers also produce light roadsters, tandems and tricycles to order.

5. The **TRICYCLE** is now almost exclusively used only by the connoisseur and is made by lightweight builders to order.

The three-wheeler has a special fascination for its rider, and one advantage is its greater stability in wet weather.

Special races are run for tricyclists.

6. Excellent TANDEMS are produced by most manufacturers. Great pleasure can be obtained by kindred spirits on a tandem, coupled with which it is faster than the solo machine and is capable of great speeds, with safety, downhill.

Change-speed gears are almost essential and the modern tandem is cleanly built, of light construction, and has very efficient brakes.

It is the ideal mount for a married couple and a sidecar (of which many excellent types are made) can easily be fitted, enabling young children to sample the good fresh air at a very early age.

### **CHOICE OF MACHINE.**

Obviously your choice of machine will be governed by the purpose for which you intend to use it. If you want to use it for cycling to and from business, you cannot do better than buy a standard roadster model, which will give years of hard wear with little attention apart from tyres and occasional oiling. Wider section wheels and tyres also make for greater safety.

Should you wish to use the machine for business and shopping, and also for occasional spins into the country in the evenings or at week-ends, the ideal mount is the light roadster. Its lighter construction makes for less effort and it is a good dual-purpose machine.

For the pleasure rider, the lightweight sports model is the obvious choice. Should you wish to combine your touring with a little racing, your best course would be to consult your local lightweight builder. Helpful advice is freely given, and his wide experience is readily placed at your disposal. Whichever machine you choose, it is wise to buy the best that you can afford.

This applies also to the accessories, and sometimes it is wise to just pay a deposit on the bicycle and spend more money on good equipment, completing the payments for the bicycle under a hire purchase agreement. Of course, if you are in a position to pay cash down, so much the better, but in any case, spend as much as you can and get the best. You will be amply repaid in trouble-free rides.

### **HINTS & TYPES WHEN ORDERING A MACHINE.**

1. The frame height is measured from the top of the seat lug to the centre of the bottom bracket spindle. Take 11 inches from your inside leg measurement and it will be the best size of frame.

2. If this size is unobtainable, get the next smaller size.

3. The shorter the wheelbase, the more lively the mount. Wheelbase is from centre to centre of the two hub spindles.

4. See that good quality brakes and tyres are fitted.
5. Spring saddles seem more comfortable at first, but leather is best when worn in.
6. Choose the correct size of gear for your requirements ; 65—68 inches is normal for a man and 60—63 inches for a woman.
7. See that the handlebars and grips are suitable.
8. If you order a hand-built machine, seek advice on frame angles ; 73 deg. head and 71 deg. seat tubes make a good general purpose mount.
9. On delivery, check up all nuts for tightness, and see that all parts are oiled. Check the brakes.

### **ACCESSORIES.**

Essential items which should be on all cycles are as follows : Bell, pump and connector, saddlebag, tools, puncture outfit, front and rear lamps. Also a good set of oilskins for wet weather wear.

The tool kit and puncture outfit should comprise the following :—

Cone spanner.	Solution.
Spanners to fit all nuts.	Patches.
3 tyre levers.	Tyre canvas.
Small screwdriver.	Valve rubber.
Small pliers.	French chalk.
Penknife.	Chain spring link.
Nipple key.	Spare bulb.
Small nuts and bolts.	Piece of fine glass paper.

If on a long journey carry spare batteries.

This may seem a lot to carry, but it can be taken easily in the side pocket of the saddlebag, and it will be much appreciated when in difficulties.

**Riding Position.** The first point to remember is that the weight should be equally distributed between the handlebars, saddle and pedals. If there is undue strain on either part the handlebars or saddle should be adjusted to suit.

#### **Points to Remember.**

1. For most riders, the tip of the saddle should be roughly 2 inches behind the centre of the bottom bracket.
2. The correct saddle height is when you are just able to pedal comfortably with the heels.
3. Toe clips and straps will assist your pedalling effort.
4. The top of the saddle should be level or tilted slightly backwards.
5. The handlebars should be adjusted so that your wrists are straight. If you have to twist your wrists, this will be uncomfortable after a few miles.
6. The top of the bars should be roughly level with the saddle.



## VARIABLE GEARS.

The size of the gear you use determines how fast you will have to turn the pedals to maintain a certain speed. The higher the gear, the lesser the number of turns per minute you will have to do. Obviously, then, you will need a smaller, or a lower, gear to pedal uphill or against a wind than you will need downhill or with a following wind. Therefore, it is an advantage to have a variable gear which enables you to have a gear ready for each occasion.

There are many varieties of speed gears on the market, but there are two principal types, the hub gear and the Deraillieur.

The hub gear, as its name implies, has all the mechanism enclosed in the hub shell, with the chain running continuously on one sprocket, while the Deraillieur is operated by a device which causes the chain to "jump" from one cog to another. Each type has much to recommend it, and each rider has his or her own preference. Principal points are that the hub gear is neater and it is completely enclosed and oil-bathed, while the Deraillieur has the advantage of being easily inspected if trouble develops without necessity to strip down the hub.

Both types are made in 2, 3 and 4 speeds, and by a combination of the two or with a double chainwheel, 6, 8, 9 or 12 speeds can be obtained for riders who want to try mountaineering and so forth, but they are mainly regarded as freaks.

The gear size is determined by the diameter of the rear wheel and the number of teeth in the chain wheel and rear sprocket. The formula for obtaining the gear is multiply the diameter of the rear wheel by the number of teeth in the chain wheel, and then divide by the number of teeth in the rear sprocket, e.g., 26-inch rear wheel, 48-tooth chain wheel, and 16-tooth sprocket:—

$$\text{Gear} \doteq \frac{48 \times 26}{16} = \frac{1,248}{16} = 78 \text{ inches.}$$

See over for a complete table of gears (in inches) for all sizes of wheels and sprockets.

CHAINWHEEL SIZE (N<sup>o</sup> of TEETH)

FOR 26 inch WHEELS

SPROCKET SIZE	38T	42T	44T	46T	48T	50T	52T
12T	82.3	91	95.3	99.7	104	108.3	113
13T	76	84	88	92	96	100	104
14T	70.5	78	81.7	85.4	89.1	92.8	96.6
15T	65.9	72.8	76.3	79.7	83.2	86.6	90.1
16T	61.7	68.2	71.5	74.7	78	81.2	84.5
17T	58.1	64.1	67.2	70.3	73.4	76.4	79.5
18T	54.9	60.7	63.5	66.4	69.3	72.2	75.1
19T	52	57.5	60.2	62.9	65.7	68.4	71.1
20T	49.4	54.6	57.2	59.8	62.4	65	67.6
21T	47	52	54.5	57	59.4	61.9	64.4
22T	44.9	49.6	52	54.4	56.7	59.1	61.4
23T	42.9	47.5	49.7	52	54.3	56.5	58.8
24T	41.2	45.5	47.7	49.8	52	54.1	56.3
25T	39.5	43.7	45.8	47.8	49.9	52	54.1
26T	38	42	44	46	48	50	52

FOR 27 inch WHEELS

12T	85.5	94.5	99	103	108	112.5	117
13T	78.9	87.2	91.3	95.5	99.7	103.8	108
14T	73.3	81	84.8	88.7	92.6	96.4	100
15T	68.4	75.6	79.2	82.8	86.4	90	93.6
16T	64.1	70.8	74.2	77.6	81	84.3	87.7
17T	60.3	66.7	69.9	73	76.2	79.4	82.6
18T	57	63	66	69	72	75	78
19T	54	59.7	62.5	65.4	68.2	71	73.9
20T	51.3	56.7	59.4	62.1	64.8	67.5	70.2
21T	48.9	54	56.6	59.1	61.7	64.2	66.8
22T	46.6	51.5	54	56.4	58.9	61.4	63.8
23T	44.6	49.3	51.6	54	56.3	58.7	61
24T	42.7	47.2	49.5	51.7	54	56.2	58.5
25T	41	45.4	47.5	49.7	51.8	54	56.2
26T	39.5	43.6	45.7	47.8	49.8	51.9	54

FOR 28 inch WHEELS

12T	88.7	98	103	107	112	116.6	121
13T	81.8	90.4	94.8	99	103	107.6	112
14T	76	84	88	92	96	100	104
15T	70.9	78.4	82.1	85.9	89.6	93.3	97.1
16T	66.5	73.5	77	80.5	84	87.5	91
17T	62.5	69.4	72.7	76	79.3	82.3	85.6
18T	59.1	65.3	68.4	71.5	74.7	77.7	80.9
19T	56	62.1	65.1	68	71	73.6	76.9
20T	53.2	58.8	61.6	64.4	67.2	70	72.8
21T	50.6	56	58.7	61.3	64	66.6	69.3
22T	48.4	53.6	56	58.7	61.3	63.6	66.4
23T	46.3	51.1	53.6	56	58.4	60.9	63.3
24T	44.3	49	51.3	53.7	56	58.3	60.6
25T	42.6	47	49.3	51.5	53.8	56	58.2
26T	41	45.2	47.4	49.5	51.7	53.8	56

**CARE AND MAINTENANCE.**

The most important parts of a bicycle are the running parts, the wheel hubs, free wheel, chain, bottom bracket assembly, head and pedals. On the accuracy and condition of these parts depends the smooth running of the machine. Also the brakes should be given frequent attention and kept in good trim.

Here are general instructions for maintaining the machine in good running order.



**Wheels.** Wheel bearings should be adjusted so that there is no side play and the wheel spins freely. If it binds in one place, slack off the cone until free, even if this means play in one spot. First, undo locking nut, adjust the cone and then re-lock the nut.

Hubs should be oiled regularly at least once a month. See that the oil reaches both bearings by tilting to either side after the oil has been applied. It will be found advisable to remove the spindle and balls once a year, clean out the hub and replace the balls in grease or vaseline.

Worn or damaged balls or cones should be replaced. A cracking sound usually denotes a broken ball.

If a wheel becomes buckled, first look for broken spokes, which usually break at the hub end. Remove the broken spokes and take them to your dealer, who will replace them with ones of the same gauge and length. Length is very important because a longer spoke will protrude through the nipple and puncture the tube, and, of course, a shorter one will not reach.

Deflate the tyre, insert the spoke in the hole in the hub, taking care to put it in from the same direction and to cross it in the same manner as the previous one, and introduce the other end into the nipple in the rim. Tighten with a nipple key (these are inexpensive and can be obtained for a few coppers).

If a wheel is slightly buckled without broken spokes, the following procedure should be adopted. Spin the wheel between the forks and note the position of the buckle. Tighten up the spoke nipples at the buckle which are on the opposite side of the rim to the direction of the buckle. If these are already tight, slacken off the spokes on the same side as the buckle. Repeat this until the wheel runs true.

If the wheel is badly buckled it is best to take it to a dealer, as an inexperienced person can easily cause "bumps" in a wheel, i.e., the rim pulled out from the hub more in one spot than in another.

Be sure when you replace a wheel that it runs central in the forks. This can be obtained in a rough and ready manner by trying a finger between the fork and rim on each side.

**Free Wheels and Cogs.** Free wheels should be kept well oiled through the hole provided for the purpose. If there is no oil-hole, oil on the slant.

If a free wheel starts to slip when pedalling, soak it in paraffin and then in thin oil. This should free it.

A free wheel can be removed by using a hammer and punch on the slots provided, but it is advisable to obtain a special "free wheel remover."

This is used as follows. Take off the wing nut from the wheel. Place the remover in position in the slots and replace the wing nut. Hold the remover firmly in a vice and turn the wheel by hand. The free wheel then comes off quite easily.

A fixed cog does not require much attention. When removing remember that the cog has a right-hand thread and the lock nut a left-hand.

**Variable Gears.** With hub type gears, oil the hub frequently—with the mechanism running in oil you will reduce trouble to a minimum. Also oil or grease the cable where it bears on the small wheel and also at the lever end. Keep the cable adjusted to the maker's instructions.

For Derailleur gears, keep the free wheel well oiled and also the jockey or tension cogs. Oil the cable at the lever and at the cog end, and this will reduce breakages to a minimum. Should you break a cable your dealer will replace same for a small charge if you return the old one.

See that the bracket and spring clips are fixed securely to the chain stay (these may work loose). Always change to a low gear when you stop, to facilitate an easy start without undue strain on the gear.

**Bottom Bracket.** The axle should spin freely and yet have no shake in the bearings.

Usually there is a fixed cup on the chainwheel side and an adjustable cup and locking ring on the other side. The locking ring should be tapped loose with a soft punch and the cup adjusted by the same means. Then tighten the locking ring.

The bracket should be oiled regularly (see that oil reaches both bearings), and about once a year should be dismantled, cleaned and the cups and balls replaced in grease or vaseline.

Worn cups and balls should be replaced.

This is important as water may reach the bracket on very wet days, and rust will set in.

**Cranks.** If you wish to remove the cranks in order to get to the bottom bracket, undo the nuts of the cotter pins and tap out the cotteners with a brass or other soft punch. If you use the hammer direct on the cotter, you will burr over the thread and be unable to fit the nut when the crank is reassembled. When putting the cotteners back, remember that they should be driven in from opposite directions, i.e., when looking at the two cranks from any direction you should see one nut and one top of a cotter. When fitting new cotteners you may have to file the flats to suit your axle.

**Pedals.** Pedals should be oiled and adjusted frequently. To adjust, remove the dust cap, undo the lock nut and adjust the cone. Do up lock nut and replace the dust cap.

If you wish to remove the pedals, remember that the pedal on the chainwheel side has a right-hand thread, and on the other side there is a left-hand thread. The reason for this is so that the tendency will be for the pedalling action to tighten the pedals in both cases.

**Chain.** The chain is one of the most important parts of the transmission. It should be correctly adjusted so that there is about  $\frac{3}{4}$ -inch play midway between the chainwheel and the rear cog. If badly worn, it should be immediately replaced to avoid wasted effort on the part of the rider.

The chain should be oiled frequently on the INSIDE with thick oil previously thinned by warming, and graphite grease. After every two months (or less if you do much riding) remove the chain and soak in a paraffin bath. Then immerse in a bath of warm oil and allow the oil to penetrate into the rollers. Wipe off superfluous oil and refit chain.

**Head Bearings.** These should have no shake and be perfectly free to swing from side to side.

If you are unable to obtain correct adjustment by undoing the lock-nut at the side and adjusting the large nut, either the cups or the balls are worn and should be replaced. Nipples are usually provided for lubrication.

**Saddle.** The saddle is very often neglected although it is very important for the rider's comfort.

When a leather saddle begins to stretch, tighten up the nut just under the tip of the saddle.

If the saddle squeaks, turn the bicycle upside down and oil between the leather and the metal frame.

The leather must also be attended to and dubbin or neatsfoot oil can be applied underneath. The top should be treated with "Proofide" or some similar product. A little care and attention will be amply repaid by longer life and greater comfort.

**Brakes.** It is very important to keep brakes in efficient working order as your life may depend on them. Keep them adjusted equally close to the rim on each side if they are rim brakes, and replace the brake blocks when they become worn. If they "screech" in use, file grooves in the blocks. Keep the cable and all joints well oiled, but take care that no oil reaches the blocks.

Hub brakes should be kept adjusted at the arm on the outside. Re-lining of the brake shoes is only required at long intervals and care should be taken that the rivets are well below the lining surface and do not touch the inside of the drum. Also the lining should be bedded down evenly on the outside of the shoes.

**Lamps.** With electric lamps, keep all contacts clean with a small piece of emery paper.



On long rides, switch off the lamp at every stop. This helps it to recuperate. Have a look at your lamps after a wet ride—water will short the battery.

**Tyres.** The great majority of tyres nowadays are of the wired-on variety. There are many first class tyres manufactured and if well looked after, they have a very long life. The first point to be remembered is that both oil and strong sunlight are injurious to tyres.

So when you oil your wheel bearings, make sure that none reaches the tyre, and when you pop into "the local" on a hot, sunny day, see that your bicycle is parked in the shade.

When you puncture a tyre, proceed as follows. First try the valve rubber, and if this is O.K., spin the wheel round slowly and see if you can locate a thorn or sharp stone, or other sharp object likely to cause a puncture.

Use a little moisture at a suspicious spot, and watch for any bubbles. If you find the spot, remove the valve and loosen the lock nut at the top of the valve stem. Insert two tyre levers under the tyre near the puncture, and gently lever the tyre off the rim. (Three levers may be necessary in some cases—and be careful not to nip the tube). Next, extract the tube for a few inches and feel inside the cover for the sharp object and remove same. If the puncture is not easily visible, a few pumps of air will soon bring it to light.

If you cannot find the puncture in this manner, remove the wheel and use the tyre levers as above. Then extract the whole of the inner tube, replace the valve and pump up until it is fairly stiff. Then pass the tube through a bowl of water (a stream will do if on the road) and stretch each section when under water. The puncture will soon come to light and should be marked with indelible pencil.

It may also be due to the valve leaking at the seating end, and this will usually be found to be due to a loose lock-nut.

When you have located the puncture, proceed as follows. Clean all round it with a piece of fine glass paper or a match head. Then apply a thin layer of solution, allow to become tacky and fix the patch. Press on for a few moments, and then apply talc powder or French chalk.

If a sharp stone or tin-tack has been found in the tyre, it is as well to examine the tube opposite the puncture, in case the sharp point has penetrated right through the tube.

To replace the tyre, first give about three or four pumps and then push the tube into position. The cover can now be pushed over the rim by using the fingers and thumbs. Be careful not to catch the tube between the tyre and rim, and never use tyre levers except in the most obstinate cases. It will very rarely be found necessary

To repair worn or cut outer covers, the following points should be observed. Tyre stopping is sold to fill in cuts. First, clean the cut with petrol and then apply the compound, which should be pressed in to fill the whole cut.

Where the tyre is worn or badly cut, tyre canvas should be used on the inside. First of all, thoroughly clean the part in question with fine glass paper, and then apply two or three coats of solution. The canvas should then be pressed on.

For best results in cases of bad damage, the fabric should reach right across the tyre, and under the wire edge at both sides. It is then able to stand the full force of the inflation.

Racing tyres, or TUBULARS as they are called, have the tube completely encased and are a different problem.

In the sewn up type, several inches of the tape is first pulled away, and some stitches cut. The tube is then pulled out and the puncture repaired as above. The tube is then replaced and the stitches re-sewn with special thread (obtainable with needle in tubular repair outfit), care being taken, of course, to avoid the tube. The tape is then stuck down.

In the seamless type such as the "Constrictor," two diagonal sets of strands are used instead of the stitches. The strands are separated, and the tube drawn out, either by use of the special tool supplied with the outfit or with the little finger. When the puncture is mended, the tube is eased back, and the strands straighten themselves out.

It is advisable to carry a spare tubular, since it is usually more than a five minute job to repair one on the road.

## USEFUL HINTS ON MAINTENANCE.

1. Regularly see that wing nuts, cotters, etc., and nuts on brakes are tight.
2. Punctures, especially on tubulars, can be minimised by a "thorn catcher," which is a piece of wire or fine gauge chain fitted across the stays to rest lightly on the tyre.
3. If you tighten up spokes, be sure to file the ends to avoid punctures.
4. Always carry a spare bulb and battery and spare chain link or bolt.
5. Keep tyres inflated hard—for easier running and longer life.
6. When you remove the inner tube on rear wheel, take it out on the opposite side to the chain, or it will get covered with grease.
7. Use front brakes with caution in wet weather.

8. Broken celluloid mudguards can be joined with a small piece of clean celluloid and amyl acetate.
9. Celluloid pumps and mudguards, etc., are pliable after immersion in hot water.
10. To remove grips that have been fixed with solution, dip into hot water and leave for a few minutes.
11. If your dynamo goes out, it is probably (a) the bulb, or (b) faulty contact between the bracket or the front and rear lamp and the frame.
12. Carry a lock and chain especially when shopping.
13. Valve rubber sticking inside a valve stem can be moved by playing a match flame around the stem.
14. Periodically remove small stones from the tyres.
15. Tarnished white mudguards can be cleaned with metal polish.

## TOURING.

There is no healthier or cheaper way of spending a holiday than a bicycle tour. It takes you right away from your everyday worries and cares, and you can choose your own touring ground according to your taste. If you want wild, hilly country with mountains and lakes, you can choose N. Wales, Scotland, the Lake District or the Derbyshire Peaks. If you like pleasant countryside, with farms, villages and country lanes, there is Sussex, Somerset, Oxfordshire, Kent and a host of other places. For wild coastline there is W. Wales, Devon, Cornwall and the Scottish coast. For rich hilly and wooded scenery, there is Gloucester, Hereford and Worcester, Devon and Cornwall, Brecon, Radnor and Montgomery; so whatever your taste there is plenty of scenery of the right kind in Britain.

Others may wish to see the old historic buildings with which the British Isles abound—the castles of Chepstow and Harlech, the ruined Abbey of Tintern, or the cathedrals of York, Canterbury, Lichfield or Winchester.

In normal times, it is also possible to spend very cheap holidays abroad.

First of all then, you make up your mind which district you are going to tour. Then you decide whether you are going to stay at a fixed spot and tour every day in a different direction, or whether you will move on to a different place each day. If the former you will be well advised to book up in advance.

Next, you decide whether you will take train for the first part of your journey in order to save precious time, or if you will ride all the way. A lot depends on the distance of the touring centre from your home.



You should then provide yourself with a good map of the area to be covered with a scale of  $\frac{1}{2}$ -inch to the mile. Good maps can be obtained from the Director-General, Ordnance Survey, Southampton, or from J. Bartholomew & Son, Ltd., Duncan Street, Edinburgh, 9, from whom lists are available.

If you are in any doubt regarding your touring centre, advice is readily given by the cycling periodicals and also (to members) by the National Cycling Organisation. Also, good, simple accommodation can be obtained through the Youth Hostels Association for one shilling per night. Food is also provided together with facilities for the tourist to cook his own food. The Hostels are situated all over Britain, and are usually in very beautiful surroundings. Full particulars can be obtained from the Secretary, Y.H.A., Welwyn Garden City, Herts.

When you are getting your bicycle ready for the tour, make sure that you have a pair of good tyres, your bearings are well oiled and your brakes are in good condition; also provide yourself with a good touring bag and a bag support if necessary to keep the bag off the mudguard and wheel. Suggested equipment for a tour is as follows. Each rider, of course, will have his or her own personal items to take. This may seem a long list, but it is surprising what can be squeezed into a saddle bag and you may be glad to have some item which may seem unnecessary when packing.

Cape and sou'wester.	Swimming costume.
Tools (as outlined above).	Camera.
Lamps (spare bulb and batteries).	Watch.
Maps.	Handbook of hotels, etc.
First Aid outfit.	Iron rations (chocolate, etc.).
Identity cards.	Penknife.
Spare socks or stockings.	Spare straps and string.
Spare shirts and underwear.	Needle and cotton.
Pair trousers or skirt.	Warm jersey or jacket.
Pyjamas.	Lock and chain.
Handkerchiefs.	Pencil and notebook.
Comb.	Stamps.
Tooth brush and paste.	Small mirror.
Razor and blades.	Small torch.
Soap and towel.	Slippers or sandals.

Here are some useful tips for tourists.

1. Carry some food in the saddle bag—you never know when you may feel hungry miles from anywhere.
2. Likewise an aluminium "feeding bottle" is useful for drink and fits on the handlebars.
3. Don't plan the tour in detail—follow your inclination each day.

4. Don't leave it too late to ask for "digs" Book early and then go for a walk or an evening spin.
5. Don't ride too fast or too far—a leisurely tour is far better.
6. A pack of cards will be useful in wet weather.
7. A nail bent over will temporarily replace a lost chain bolt.
8. Wheels badly buckled can be pulled straight on a telegraph pole or a gate by a sudden jerk.
9. A postage stamp or even chewing gum will mend a small puncture temporarily if no outfit is available.
10. A broken frame can be repaired temporarily by wedging in a piece of wood. Use great care.
11. Any cloth without solution will effect a roadside repair to a worn tyre.
12. A small safety pin in the chain will fix a hub 3-speed in any required gear when the cable breaks.

### CAMPING.

Cycle-camping is surely the freest and most unfettered manner of spending a holiday. It is also the cheapest. With present day equipment, which is of the lightest, there is no difficulty in carrying all that is necessary.

Just a word of warning. Do not camp at the roadside or on a public common, or you may have an official visitor at an awkward hour to move you off. Ask permission to camp on private property—you will seldom meet with a refusal if you approach the farmer in the right manner.

If you wish to light a fire, you should first obtain the consent of the owner. Then cut out a piece of turf which can be replaced when you move on and leave no trace. Be sure to leave no rubbish behind.

Choose a sheltered spot, if possible, on high ground. Remember that low ground, especially near ponds and streams, is the happy hunting ground of all sorts of insects, and usually has a morning mist. Do not camp under trees because of the dripping water during and after rain. Also, don't forget to slacken off the guy ropes in the rain.

In regard to equipment, buy the best you can afford. A good tent will be necessary since you do not want to carry a fly-sheet. A single pole tent is sufficient for the lone camper, but two or more will require the 2-pole type, with 6-inch or 9-inch walls. Ordinary blankets are far from satisfactory, and a down sleeping bag is far warmer, lighter and less bulky. A thin ground blanket should be used under the sleeping bag with an oilskin ground sheet if it can be afforded, if not, a rubber one will do.

Suggested additional equipment is as follows :—“ Primus ” stove, canvas water bucket and wash-basin, tin-opener, knife, fork, spoon, bakelite plate and mug, boxes for butter and jam, small bags for tea and sugar, and an aluminium cooking canteen.

This kit can be carried in a pair of pannier bags over the rear wheel and the usual saddlebag. The stove can be fixed to the frame with a special clip.

## WAR-TIME LAWS AFFECTING CYCLING.

1. **Lighting.** Lighting up time is from one hour after sunset to one hour before sunrise from the third Sunday in April to the first Sunday in October, and for the rest of the year half an hour after sunset to half an hour before sunrise.

Cycles must carry a white front lamp, red rear lamps, and a white patch. Both lamps must not exceed 7 watts, and the upper half of the front lamp glass must be obscured, and the lower half of the reflector must be painted matt black, or otherwise rendered non-effective. All side or rear windows must be completely blacked out.

Rear lamps must have one sheet of tissue paper behind the red glass, white patches must have an image of at least 12 sq. inches, at least 6 sq. inches of which must be on the off side of the machine's centre line. No part of a bicycle should project more than 20 inches, or on a tricycle more than 30 inches, beyond the white patch. A 6-inch length of white or white-painted mudguard will do, but aluminium or chrome is not legal.

2. **Touring Districts.** At present Ireland, the Isle of Man, parts of Scotland, the Isle of Wight, and the South and East Coasts of England are out of bounds to tourists, but other areas are likely to be declared prohibited from time to time, and therefore enquiries should be made before planning a tour.

3. **Maps.** Maps with a scale of greater than 1 mile to the inch are no longer obtainable without special permission.

## PHOTOGRAPHY.

Without special permission it is forbidden to photograph any aerodrome, aeroplane, barracks, fortified area, assembly of armed forces, docks, wireless or signal station, gas, electric or waterworks, military vehicles, ships, factories, air raid damage, riotous assemblies or people being evacuated. In short, you must not photograph anything connected with the war effort. Servicemen on leave, scenery, churches and buildings not connected with the war effort can still be taken.



## **CAMPING.**

Camp must not be pitched within 2 miles of any Army, Navy, Air Force or munitions establishment. Tents should be camouflaged earthy brown.

There should be no more than 20 tents together in the Eastern half of England.

No light must be visible during black-out hours.

## **SPEED.**

No more than 20 m.p.h. in built-up areas in black-out hours.

## **POINTS ON RULE OF THE ROAD.**

1. Cycles are carriages within the meaning of the Highway Act and subject to the same rights and penalties as other road users.

2. Cyclists are not compelled to use cycle paths.

3. Cycles are not legally compelled to carry a bell, but it is most advisable to do so.

4. You may carry a child on a properly constructed seat but not standing on the rear nuts or sitting on the top tube.

5. You can wheel an unlighted cycle at the kerbside.

6. An additional light should be carried on a sidecar.

7. It is illegal to ride or wheel a bicycle on the footpath.

8. "Halt at Major Road" signs must be obeyed by putting one foot to the ground and bringing the machine to a standstill.

9. No speed limit on the open road—but a law against "furious riding."

## **NATIONAL ORGANISATIONS.**

There are three main National Organisations for cyclists, each of which is able to offer admirable facilities to cyclists in the shape of touring advice and assistance, planning of routes, legal assistance, insurances and membership of a local section.

Unattached cyclists, for their own benefit, are strongly advised to get in touch with one of these organisations. The addresses are :—

The Cyclists Touring Club, 3, Craven Hill, London, W.2.

The National Cyclists Union, 35, Doughty Street, London, W.C.1

The National Clarion Cycling Club, 15, West View, Hopwood Lane, Halifax.

There are also excellent facilities for insuring your cycle for only a few shillings.

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