

Classic Car Care

Wheels

Too easily forgotten, wheels are most important. The experts show us what's what.

IT'S funny, isn't it, the things you can miss when you're buying a classic – sorry, Lionel, I wasn't poking fun at left-hand-drive TRs – I've missed plenty of things even buying professionally. I once bought an early post-war Vauxhall 25 with an engine from an ex-WD Chevrolet truck in it, but that's another story. I'd wager most people, even when they look over a prospective buy carefully, miss the wheels. They look at the tyres, but judging from the number of times chaps come to me with wheel problems they assume everything is all right till they get the car home and look at it closely.

Spoked wheels probably hold the biggest traps for the unwary. They look nice, and when they're in good order they're as strong as any wheel, but if the spokes are at all sorts of tensions they can run so far out of true your tyres have a short life. And if the spokes are badly corroded there's real danger of a major let-down if you hit a bad bump at speed.

When you're looking a car over with a view to buying it, and indeed every six months or so, it pays to play a few tunes on the spokes with a screwdriver. Just run the screwdriver round the spokes letting it bounce on them. You ought to get a series of nice musical "tings". They won't all be at the same pitch, but they should all ring clearly. If you get a few "tonks" and dull thumps you've found loose ones. While you're doing this have a look to make sure none of the spokes is bent. They might still ring, but they won't do their job properly.

And have a close look for corrosion. I've come across more than one example of spoked wheels which have been prettied up with silver paint but the spokes have corroded in places to nearly half their original thickness.

If you've got any doubts about your spokes have the tyre and tube off so you can see what sort of state the end of the nipple's in. You'll probably find the ragged and tattered remains of what was once a rim tape, and under that a fair old coating of rust. Get it all off with a wire brush and give the ends of the nipples a good dosing of penetrating oil or WD 40. If you've got to adjust any of the spokes clean the thread where it goes into the nipple as well.

The nipple has a square on it, and there are proper spoke keys for turning them, but these seem few and far between outside specialist wheel shops and you may have a job to get one. A good substitute is a thick jawed close fitting spanner. The cheaper, thicker drop forged spanners are better for this than the more expensive chrome-vanadium sort which, though they're good spanners, are thin and more likely to round off the nipple which is quite soft.

In a wheel shop the wheel is mounted on a dummy hub at the bench, but as you haven't got this the front hub of the car makes a good substitute. Provided you haven't got any spokes which are bent or corroded, turn the nipples on the ones which "tonk" till they "ting" like the rest.

When they're all tinging you've got to check the rim for truth. Bring a box or something similar up to the wheel to steady a pointer, and spin the wheel to check the rim for "run-out" as wheel men call it. Run out is the amount by which the edge of the rim wobbles as it goes round. On 100% wheel truing there shouldn't be any, but for practical purposes on a road car if you get the run-out to within about an eighth of an inch on a 16 inch rim, with a little more allowable on older 19 inch rims, it's passable.

If the run-out is too much substitute a stick of chalk for the pointer so you mark the "high spots" on the rim. Unless the rim's been buckled in an accident, in which case the run-out will be enormous, you true the rim by adjusting the tension on the spokes. The principle is that you loosen spokes slightly at the high spots and tighten them slightly at the low spots. Only use a turn or so of the nipple at a time, and keep on using the chalk to see how the rim is going. The ideal is to finish up with the rim running true and all the spokes with approximately the same tension. You won't get them all exactly the same, but you should get them reasonably near. When you've finished, go round with the screwdriver again to make sure you haven't left any loose.

If all the spokes are badly corroded, or a large proportion of them are, you're better off letting a wheel specialist have it. But if only one or two spokes are bad, or bent, you can put new ones in yourself. When you buy your spokes the shop will want to know the length and the gauge. Don't be misled into thinking you can buy spokes which are far too long, cut them down to size and run a die down them to make a new thread. The threads on spokes are rolled so they stand out proud of the spoke diameter. The root diameter of the thread should be the same as the diameter of the main part of the spoke so the tension stress is distributed evenly along the whole length. If you cut a thread into the spoke you'll weaken it and set up a local stress point. The rolled thread will be longer than you need, but the plain part of the new spoke must be at least as short as the plain part of the old one. Don't forget to buy new nipples with the new spokes.

The easiest way to take out a damaged spoke is to cut it. Then you thread the new spoke through the hub and into the hole in

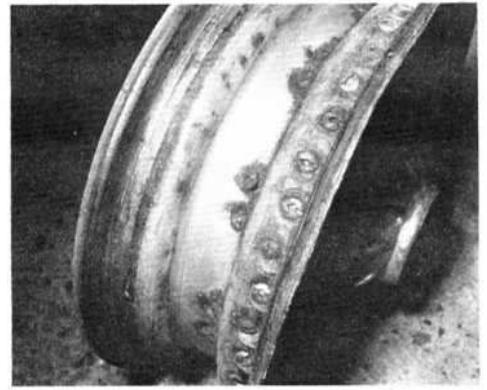


the rim. You might have to spring it a little, but do this in an even bend like a bow to avoid kinking it. If you make a sharp bend you've ruined the spoke. Put a spot of grease on the spherical seating where the nipple goes, thread it on and tighten it to tension the spoke.

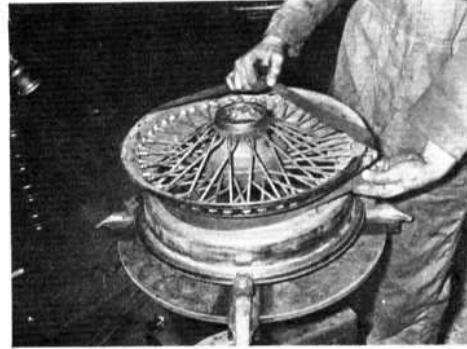
The thread will stick out of the end of the nipple, so cut it off flush. Then undo the nipple again and cut a further piece off – about an eighth of an inch. This is because the new spoke will settle down and stretch after a while, and if you retension it when the tyre's on, the end you cut off flush will poke up and puncture the tube. By cutting the extra eighth off you give yourself clearance for adjusting later. Go over the ends of any other spokes you've tightened and file off any sharp ends that might chafe the tube. Now you can go over the well of the wheel with rust killer, give it a coat of paint, fit a new rim tape and you're ready to put the tube and tyre back.

Quite a lot of spoked wheels have Rudge Whitworth splined hubs. The splines on both the hub and the wheel must be in good condition. Clean all the old grease off and try the wheel on the hub dry. Ideally there shouldn't be any rock at all, but there's bound to be just a trace or you'd never get the wheel on and off. If you think there's too much, or if any of the splines are damaged, consult the wheel specialist. In some cases he can salvage the hub and wheel by welding, or metal spraying, and remachining.

Pressed steel wheels don't often give a lot of trouble unless they've been thumped against a kerb too hard. Minor dents and



Far left, wheel rebuilt by Motor Wheel Services. Above left, weekly care – clean with small stiff brush. Above centre, check spokes with wheels off the ground for tightness. Above right, with tyre off, check rim and spoke ends.



Above left, clean spoke and adjusters with wire wool and oil. Above centre, fit new rim tape. Above right, adjustment by experts (Motor Wheel Services). Right, properly maintained the wire wheel looks good, is reliable and safe.



knocks on the edge of the rim can be taken out with a dolly and hammer, but if when you check the run-out you find the wheel is buckled it's not worth trying to do anything about it. Go to the breakers and get a wheel in better condition.

Much the same applies if you find the stud holes elongated or worn too large, or even with cracks coming from them. This shouldn't happen, but it does if someone has been running with loose wheel nuts. If they have, the chances are the wheel studs will be damaged, so check these too. Most wheel studs are a splined press fit in the hub, but a few are pressed in and secured by a spot of arc weld so you might have to chisel this off to get them out. If all the studs are bad then once again it's probably easier to get a good secondhand hub.

Some people struggle for hours getting tyres off and on. The man in the tyre shop has a machine which makes life very easy for him, but changing tyres with old fashioned levers isn't such a hard job. The hardest job is getting the bead down from the rim when your getting the tyre off. If your lucky you can bang it down with your heel, but it saves a lot of time – and ankles – if you've got a tool to do it.

We used to make them in the garage years ago. You want a stout length of steel – an old half shaft is ideal – a collar about a couple of inches thick to fit on it and a length of steel tube to go over it such as a length of steel scaffold pipe. Grind one end of the shaft to a blunt chisel shape and pin and weld the collar about six inches from this chisel end. Then if you put the chisel end up against the bead close to the rim

and slide the tube down with a thump on the collar you've got a slide hammer that'll shift the most obstinate tyre.

Get some decent levers a foot or more long, not the silly little things I've seen in some accessory shops, and follow the golden rule: start and finish at the valve. Tread the tyre well down into the well of the wheel opposite the valve and start levering at the valve. When you've got one side off, and the tube out, stand the wheel up, put a lever in from the underside of the wheel and lever upwards to bring the whole tyre over the rim. Once the top part is over help it on its way by hitting the bead over the rim with a mallet or a hide faced hammer.

When you come to put the tyre on, stand the tyre up, hold the wheel with its outside towards the tyre and push it in as far as it will go. Then lay the wheel on its back and use your mallet to thump the rest of the bead on. Put the tube in, make sure it's not kinked and start treading the top bead over the rim starting opposite the valve. Then walk round the tyre treading the bead over the rim. The hardest part is the last six inches, but if you bring your weight down on the wall of the tyre where

it humps up, instead of kicking at the bead, it should go on without a lot of fuss. Coating the beads with soap solution helps things along.

With a tubed tyre check round to make sure you haven't trapped the tube anywhere before you inflate it. As you inflate it give it a few kicks and bumps to get the tyre concentric with the rim. There are circles moulded on the tyre to help you.

With a tubeless tyre you will need a torquiquet to spread the beads out to the rim so they form a seal to hold the air in. You can make up a torquiquet with a length of rope and a bar, and I've seen people seat a tubeless tyre by pushing it up against a wall while they use an airline to inflate it, but it's much easier if you buy the tool made for the job. Most large accessory shops keep torquiquets, and last time I looked they cost about £6 or £7. It sounds a lot, but they last a lifetime.

I ought not to have to remind you to run your tyres at the proper pressure, and have the wheel alignment checked to avoid uneven wear, but from the look of some tyres I've seen at recent rallies and meetings the reminder might not come amiss. ●

See you next month.