

## TYRE HANDLING WORKSHOPS

### Roadside changes

#### The problem



Working at the roadside is hazardous. The highest risk in this job is from other vehicles on the road. Contact the Highways Agency and follow their advice, avoid carrying out an off-side repair, if there is heavy traffic.

Changing a commercial tyre at the side of the road also involves some high-risk manual handling. Super-Single tyres can weigh up to 85 kg, and rims over 50 kg. Levering these large and heavy tyres on and off a wheel and manually handling them into position requires force and is high risk. Some of the risks are:

- lifting heavy rim and tyre combinations from the ground using a squat or stoop position;
- lifting tyres inside the bead;
- using heavy tools;
- kneeling and crawling.

#### The solution



Fit a ramp to the recovery vehicle to help with loading and unloading of tyres. Provide a tail or side lift to load and unload tyres. This is especially important if handling tyres from commercial, agricultural or earth-moving equipment. Avoid raising the heaviest tyres from the floor to the vertical whenever possible. Fit the tyre without removing the wheel from the vehicle.

Provide effective training on how to use levers and other tools. Make sure that the tools and equipment can be reached easily in the recovery vehicle. Train workers how to lift heavy tyres; eg by using a semi-squat lift and not stooping.

Heavy tools such as socket wrenches and bead breakers should be kept in a secure upright position when not in use. This avoids a lot of repeated stooping to pick them up. However, avoid leaning them against a smooth surface where they could fall over and cause injury.

Provide knee protection. The postures involved mean workers will be pushing against their knees, so the design of knee protection needs to be carefully considered, in consultation with workers. Pads that fit inside work trousers and overalls are probably the most practical solution, since workers spend only a proportion of the time kneeling.

## See also:

- Essential precautions for working roadside: <http://www.hse.gov.uk/mvr/roadside-repair/essential-precautions.htm>
- More guidance on working roadside: <http://www.hse.gov.uk/mvr/roadside-repair/index.htm>
- Health and safety in motor vehicle repair and associated industries (HSG261), including precautions for safe tyre inflation: <http://www.hse.gov.uk/pubns/priced/hsg261.pdf>

## Risk assessment

A risk assessment for lifting a 75-85 kg tyre and its rim from flat on the ground to a vertical using HSE's Manual Handling Assessment Chart:

|   |   |
|---|---|
| <b>Load weight/frequency</b><br>R6 ■ P10 ■      | The load (force applied) at the start of the lift is approximately half of the weight of the tyre and wheel rim combined. This can be as high as 50 kg, although as the tyre is raised the force reduces. |
| <b>Hand distance from lower back</b><br>A3 ■    | When done well, the horizontal distance between the hands and lower back is relatively small.   |
| <b>Vertical lift region</b><br>R3 ■             | The hands start the lift at ground level.   |
| <b>Trunk twisting/sideways bending</b><br>G0 ■  | There should be no twisting or side bending of the trunk.   |
| <b>Postural constraints</b><br>G0 ■             | There are no constraints other than the need to stoop.  |
| <b>Grip on the load</b><br>A1 ■                 | The grip on the tyres at the edge of the tread means that the fingers can be clamped at 90 degrees, and is therefore reasonable.  |
| <b>Floor surface</b><br>G0 ■ R2 ■               | Since the task is performed outside, the floor surface quality can vary widely.   |
| <b>Other environmental factors</b><br>G0 ■ R2 ■ | Since this operation is performed outside, round the clock and all year round, the lighting and thermal environment can vary widely.  |
| <b>Overall Score</b>                            | <b>13-21</b>  |

## Notes

- Hand distance from lower back – 'When done well, the horizontal distance between the hands and the lower back is relatively small'.

This guide has been prepared by the Tyre and Rubber Industries Safety Action Group (TRISAG) in consultation with the Health and Safety Executive (HSE). It has the support of the Retread Manufacturers Association (RMA) and the British Tyre Manufacturers Association (BTMA). TRISAG wishes to record its appreciation and thanks for the help given and information provided by the Health and Safety Executive.