

A look at things (impartially, of course) from a rigging point of view . . .

“Light duty work for a short period from a ladder is acceptable; but users need to be using them correctly. This is a clear requirement for ladder users to be trained to know when a ladder is appropriate for a task, how to use them safely and that employers ensure ladders are of good quality and well maintained.”

**It's now a year since the Work at Height Regulations came into force. Here are three popular Work at Height issues that seem to keep cropping up when people are thinking about safe systems of work . . .**

#### Tallescopes, towers and ladders

The Tallescope argument limps on with no apparent end in sight. Until a ruling on their use is made or a viable alternative presents itself, it seems unlikely that a solution will be found.

The bottom line is that they were not designed to be used the way theatres use them, and the manufacturers' instructions do not allow for such 'mobile' use. If one disregards manufacturers' instructions, the authorities may be minded to treat that as a breach of regulations.

There are plenty of alternatives - a plethora of machines to suit all pockets. Their disadvantages are their weight, size and ability to be used on slopes.

The alternatives to Tallescopes where they are most useful - on theatre stages - are few: a mobile alloy scaffold tower is probably the most practical option. The footprint of a 2m narrow width (typically .75m) tower is little different to that of a Tallescope excluding braces. You can reach maybe four to six luminaires without overreaching from the platform, but you can't move a tower with someone on it, either. So you still need to ascend and descend often.

Other disadvantages include the time taken to build, strike it or change the platform level. At 7m, a tower may feel less stable than a Tallescope, too, even with an outrigger in each corner.

Ensuring that the most appropriate means of access is used is a legal requirement and this may mean that a larger range of equipment is needed to comply with that requirement. This may mean less use of the Tallescope, therefore statistically a lower risk than at present.

The confusion over using ladders has hopefully subsided. You can use ladders, but only where use of a safer means of access is not justified. Light duty work for a short period from a ladder is acceptable; but users need to be using them correctly. This is a clear requirement for ladder users to be trained to know when a ladder is appropriate for a task, how to use them safely and that employers ensure ladders are of good quality and well maintained.

#### PPE

Using twin energy-absorbing fall arrest lanyards incorrectly has been highlighted. The force on the user is normally limited to 6kN by the action of the energy absorber in

the lanyard. This issue is to do with hooking the 'spare' leg of a twin lanyard to other attachment points (often those provided for work positioning) on a user's harness. Should the energy absorber deploy during a fall, lengthening in the process, the energy absorber is bypassed and the spare leg takes all the load. The remaining force generated by the fall is transferred via the spare leg to the harness attachment point. A test I saw with a 1m lanyard resulted in a 16kN force at the 'hip' attachment point - potentially fatal if the remaining force (now unchecked by the energy absorber) is too great for the lanyard, harness, anchor or the user.

Using lanyards or inertia reel devices for fall arrest on lighting trusses is still an issue. Both are regularly seen used with trusses that are already holding their design load. Lanyards of even 1m length can generate close to the 6kN mentioned above if the user falls from above the anchor point. 6kN applied as a point load on a truss that perhaps has only a 638kg allowable centre point load when used as a lighting truss? To hang half a ton of lights and then apply a dynamic load of up to 6kN when someone falls cannot be a safe system of work.

Many inertia reel devices require the user to anchor them to a structure that can sustain 15kN. They should also be rigged so the device is always above the user. This is to ensure the device can act in the way it was designed and lock after the user has travelled only a very short distance. If the user falls from above the device, the force generated may exceed the capability of the device.

When used to protect someone climbing a wire rope ladder to a truss, the period of greatest risk is often getting back on the wire rope ladder to descend. In this case, if the device is rigged to the underside of the truss (which they often are) the user will fall past the device, creating just such a force that the device may not be designed to arrest.

It is worth remembering that typical 'industrial' 2m lanyards may need as much as 6-7m of clear space for a user to fall into. The popular Petzl Absorbica needs at least 4.4m, and that's only 1m long to start with.

The use of horizontal safety lines is often seen as the obvious way to protect people moving along trusses. The strength of a proprietary system is not in question, that is what they are designed to do.

Provided you know what anchor strength and span is specified, the number of users it was designed for and the clearance required if it is fallen on, they're very good. The specified anchor strength is often

upwards of 15kN, something few lighting trusses can sustain without intermediate support, especially when already loaded with lights. If you remember also that often a 9m clearance is required, they start to look less like a safe system as often used in the entertainment industry.

**Suspension trauma**

Knowledge of suspension trauma is becoming more widespread. It seems logical to assume the more people use harnesses, the more likely it is for cases of suspension trauma to occur. The treatment of the condition is a matter for medically trained people.

However, it is worth mentioning here that if you are ever in a situation where someone has been rescued from a prolonged period of harness suspension, especially if unconscious; do not put them in the 'recovery position' or let them lie down.

Best advice is to sit them on the ground against a wall or other support for the back, keep their airway open and to put their legs straight out in front of them. Keep them in this position for at least 45 minutes and certainly until qualified help arrives. Sudden return of the blood (reflow syndrome) to the rest of the body can kill. The best prevention is to avoid being up

there at all, particularly in a harness. If you really need to be up there, plan the work to avoid being up there too long. Avoid the use of harnesses for prolonged suspension, use a swing seat or specialised harness. Once you know about suspension trauma, it is easy to think you can reduce the effect by moving your legs around in the air. Not so: you need something to push your feet against otherwise you simply increase blood flow to the muscles which take in the blood but aren't pumping it back to where it's needed. If you understand the causes of suspension trauma, you'll realise this increased blood flow is actually making it worse, not better.

In closing, a quote from the *Work at Height Regulations*. Regulation 11 has this to say (more or less) about 'Danger Areas'.

"Every employer shall ensure that where a workplace contains an area in which, owing to the nature of the work, there is a risk of any person at work falling a distance or being struck by a falling object which is liable to cause personal injury, the workplace is, so far as is reasonably practicable, equipped with devices preventing unauthorised persons from entering such area; and such area is clearly indicated."

Just so's you know . . .

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