

Riggingcall #2

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

News

STAC: Entertainment industry rigging often requires a safe way of adjusting rigging at height: fitting a standard alloy bow shackle to a link of an appropriate long link chain makes for a quick, simple and safe system of work. There have been a number reports of insurance company engineers advising that long link chain should not be used in lifting - resulting in venues withdrawing the chains from service in order to comply with their terms of insurance.

There are several common uses for long link chain in the entertainment industry. In theatres, light duty long link chain is often used at the bar end of a counterweight flying line for adjusting horizontal trim, and heavier chain as centre bridle legs on three-line winch bars. These were often end welded and of wrought iron, not Grade 80 steel. Best practice demands better methods these days, but there are still plenty of long link chains around, particularly as 'barrel chains' used to link, or rig bars from, counterweight barrels.

In 'arena' rigging, long link chain is used as a method of adjusting the length of suspensions and in secondary suspensions to reduce slack (a good thing). Often known generically as 'deck chain', Special Theatrical Alloy Chain (STAC), originally intended for cargo lashing, is made from Grade 80 alloy steel and meets the US National Association of Chain Manufacturers' specification for overhead lifting.

The manufacturer, Columbus McKinnon, considers it suitable for entertainment use and provides specific instructions for safe use. It's intended to be used for entertainment rigging in a way similar to its intended use, i.e. in straight line tension - never as a sling. There are similar chains, such as Trawlex, which may also be suitable, but there are also end-welded long link chains having no SWL and (if you look) a manufacturer's declaration that they are not suitable for lifting.

The Supply of Machinery (Safety) Regulations 1992 implements the EC Machinery Directive and only allows short

link welded chain to be used for lifting (Regulation 2.2, and Schedule 3, at 4.1.2.5 (b)).

Shorter and thicker proportioned links offer better resistance to bending in chain slings and when used over pocketed wheels in chain hoists. Sling chain may be twisted, wrapped around objects or have loads landed on it. In these situations the links in long link chain will not transfer load efficiently and the links may be overstressed by bending or twisting along their long axes. Incorrect fitting of shackles or hooks can spread links open. However, none of these circumstances should occur in the specific use the entertainment industry makes of long link chains.

Using the recommended factor of safety of 8:1 (q.v. *Technical Standards for Places of Entertainment, BS 7905:1 and BS 7906:1*) STAC has an SWL of over 2.5 tonnes, adequate for the majority of entertainment industry rigging tasks. Safe working at height includes reducing the time spent at height and using loose parts at height; using STAC helps satisfy both these requirements. Most rigging equipment is easy to use incorrectly and create potential hazards. In fact, even when used incorrectly, STAC is probably safer than other methods. There are alternatives, of course - chain slings with shortening clutches are used widely and do conform to the Regulations.

This rigging anorak reckons that provided a risk assessment is carried out, the manufacturer's instructions are followed and STAC is treated as a lifting accessory (as defined in LOLER), its use is as safe as many other aspects of entertainment rigging, provided the links are subject only to axial loads. However, a quick answer is unlikely and our efforts may need to be directed at Europe rather than London.

Equipment News

Hazard Tape: Le Mark has launched a disposable hazard tape for alerting people to your work overhead. The wide polythene tape is black on yellow and has the advantage of a printed caution message and symbols. This not only defines a

hazardous area but also advises of the hazard the tape alerts you to. Crossing over such an obvious line, one would have to shoulder a large part of the responsibility for subsequent injury or damage to property. (Not that it means you can continue to work above: you still have influence on other people's safety).

Another Petzl product: The latest version of the Ecrin Best (you know, the yellow helmet?), the Vertex Best (A16) is here. It's very light and easy to wear with good visibility and a single rear-adjusting wheel. You can also fit face and hearing protection into slots provided for the purpose. The helmet conforms to EN397, the industrial standard for head protection, and has the benefit of a chinstrap that won't fail at less than 0.5kN (50kg) like a mountaineering helmet. An industrial helmet strap should allow your head to slip out at around half that value, that is to say before you get trapped or strangled by the strap.

If you're going to wear a helmet, why not make sure it won't fall off when you do? You see, there are clever people that design all this kit so that we get home in one piece. Find out what to use and how to use it.

Training & Education

The Rigging Certification Programme in the UK has moved forward: PLASA has agreed to develop and manage the Certification Scheme that will create a structure that acknowledges the skills of those working in the rigging industry. More on this in a future issue of L&SI . . .

Legislation & Standards

The British Standard *BS 7906 part 1* mentioned last time is now available. It is worth getting for page 56 alone. PLASA members can order the standard at 25% discount through PLASA's Technical Resources office (tel: 01323 410335). Non-members can order, but do not qualify for a discount. PLASA can only supply UK addresses with British Standards.

As reported in LSI, there is a draft Dutch NEN Standard concerned with safety factors in equipment for lifting over people. Worth a read.

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