

Let's get Rigging

THE series will start off with some of the basics before delving into some deeper topics, but I will warn you that there may well be some maths involved as we go along!

Rigging may not be the quickest way to get a tree dismantled but it is surely one of the most controlled and safest(?) ways of accomplishing the task.

That control does come at a bit of a cost – and I'm not just talking about the physical equipment here – in the form of experienced climbers and ground staff when rigging; both climbers and ground crew have an extremely important role to play when it comes to safety for all concerned.

Once the decision is taken to rig elements of the tree down, the risk assessment should reflect the new hazards introduced by the chosen system of work before the system is built.

But what system do you use? How do you set it up? How much load can it take? What is the experience level of the operators? All of these factors will play a part in keeping the site safe, looking after both people and the equipment.

WHAT COMES DOWN MUST GO UP...

When it comes to rigging timber down, you need to remember that what comes down, must go up... as the timber drops, the other end of the rope is heading up the tree. So, here's the first rule to consider (apart from making sure the rope is long enough): unless the piece being rigged is extremely light, having someone hold the other end of the rigging rope whilst the piece is cut away just isn't a great idea. But why not?

Let's consider the basics of loads. If you attach a rigging line to a piece of timber and you take it up to a pulley, with the other end held by a groundperson, as you cut away that 100 kg lump of wood, you have 100 kg on one side of the pulley. The system wants to be in equilibrium and so needs 100 kg on the other side (where the groundperson is) to balance it up. If the groundie only weighs 70 kg then the timber outweighs the person and the section falls down as the groundie is taken up the tree (hopefully they'll realise and let go before this happens!).

Quite apart from this, as the timber falls into the rigging line, the rope system will get loaded up and it's likely that the groundie would not be able to hold the line whilst 'snatching' the timber. Likewise, solidly fixing one end of the line whilst dropping the timber section into the rope is a sure way to break the line. To alleviate these problems, we introduce a level of friction into the system.

The old way of doing this was to wrap the rigging line round the tree – this is not the modern way and really should not be used. Possibly the most well-used item of rigging gear to serve this purpose is the flying capstan or Portawrap. It's easy to install, easy to set up and relatively cheap to buy, but what was wrong with the old 'wrap around the tree' method?



What comes down, must go up

FOLLOWING ON FROM THE 'LET'S GET CLIMBING' SERIES OF ARTICLES, WE'RE GOING TO MOVE SWIFTLY ON TO THE AREA OF AERIAL TREE RIGGING. HOPEFULLY, THERE WILL BE SOMETHING WITHIN THIS SERIES WHETHER YOU ARE JUST ABOUT TO UNDERTAKE YOUR CERTIFICATE OF COMPETENCE IN AERIAL RIGGING, OR YOU'RE A SEASONED VETERAN.

ABOUT THE AUTHOR

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Wrapping a rope around the tree does indeed create friction in the system, but we have no idea how much. It's not really a consistent amount across different sizes of trees (or even species of trees for that matter) and, more to the point, it's incredibly rough on the ropes. It's difficult to let the line run when you need to and lowering the timber may well require the ground crew to walk into and around the drop zone, creating safety hazards.

The humble flying capstan alleviates all of these problems, allowing finer control of the rigging line and usage from a safer distance. It provides a smooth surface with a consistent amount of friction too.

The rigging line has to put up with a lot of abuse – it goes without saying that a

rigging line should never be used to climb with – as it undergoes constant dynamic loading as the weight of the cut timber is brought to bear on the system as a whole.

Having an understanding of the basic loads within the rigging system forms an important part of completing the Certificate of Competence, as well as creating a safer rigging system out in the workplace, and in order to select the most appropriate system elements, we need to understand those loads and the mass of the timber.

In the next article, we'll take a look at how to ascertain the mass of a log and how we can then utilise that information within the context of a basic rigging system. It's a journey that will take us into log mass charts, safe working loads, minimum breaking strengths and mechanical advantage as well as differing system setups. Having the foundation knowledge to ascertain how you will be loading the system, what changes you could do to make the system safer and having a better idea of what your equipment is capable of, is a good way of creating a safer working environment.

I'm sure we've all spoken to ground crew who know someone that couldn't hold on to the rigging line when the full weight of the timber was caught by the system (and they ended up with rope burns), or watched YouTube videos of people being dragged along by the line as they couldn't release the rope due to wrapping it around their hands and wrists.

Don't let this happen to you!

DISCLAIMER

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