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**Balfour Beatty**  
Hands off, Step Away, Safe  
Space – HOSASS  
Practical Guidance



- Introduction
- Timeline of HOSASS
- Costain incident 2022
- Current industry guidance
- Unexpected load movement
- How to apply HOSASS
- Lifting a load
- Landing a load
- Direct load control
- Summing up HOSASS



## What is it?

### **Hands Off, Step Away, Safe Space (HOSASS)**

HOSASS is an industry initiative concerning the behavior of slingers and other operatives in and around lifting operations and reducing via various control measures, the physical interface between lift team members and the load.

The aim is to highlight to all lifting team members the importance of their safe positioning, and the positioning of others. This is only achieved through careful lift planning and execution of the planned lifting operation.



# HOSASS timeline

Tragic fatal accident during lifting operation.

**“Hands Off, Step Back”** initiative.

ILLAPG poll: Consensus on industry wide issue and to work collaboratively to improve practices. HOSB principles adopted widely in industry.

ILLAPG Working Group formed to reach industry consensus and provide guidance for industry use.

**“Hands Off, Step Away, Safe Space”** initiative launched.

July '22

April '23

May '23

Feb '24

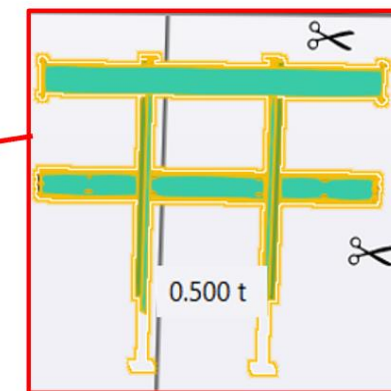
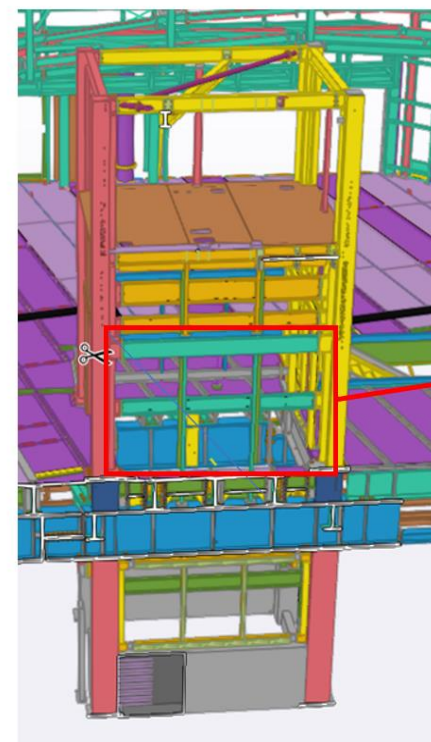
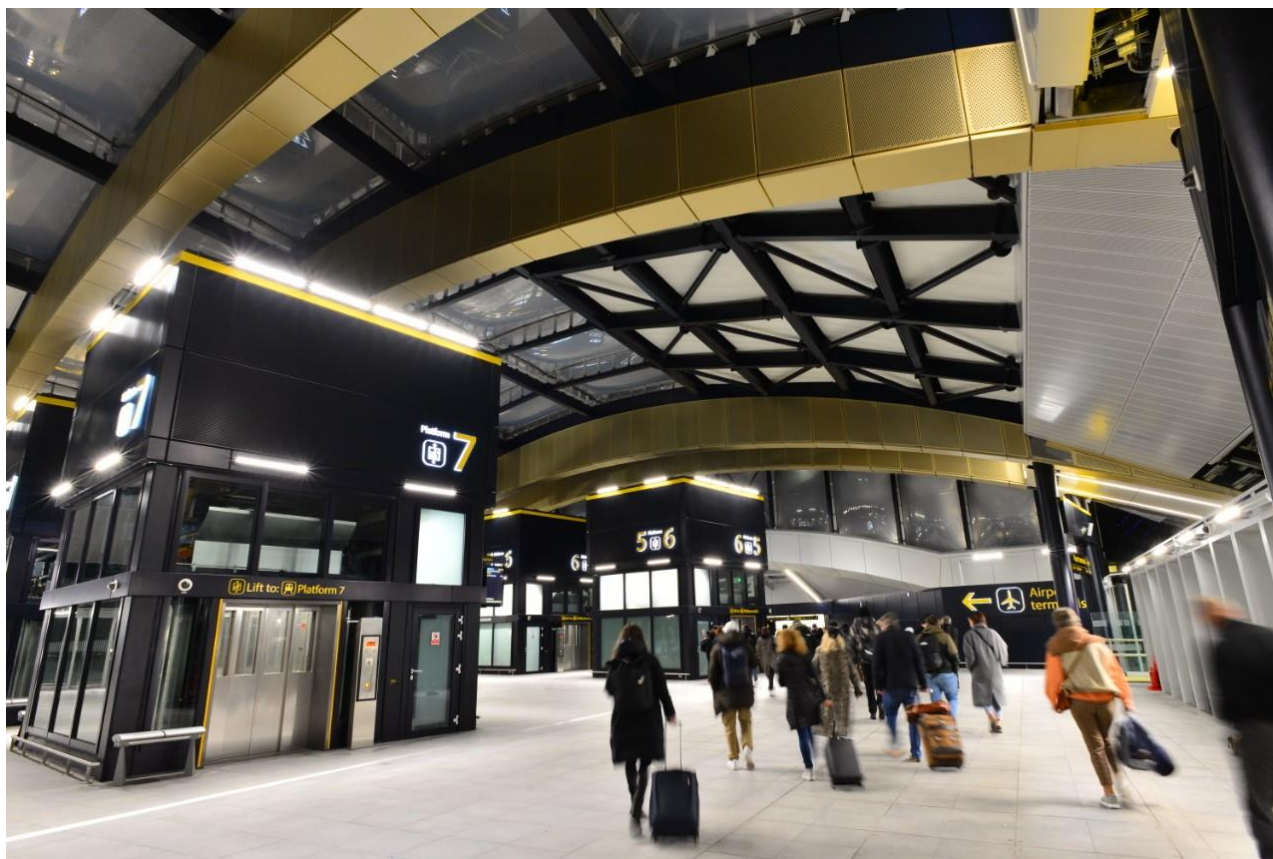
Oct '24

# Lifting accident – Key Information

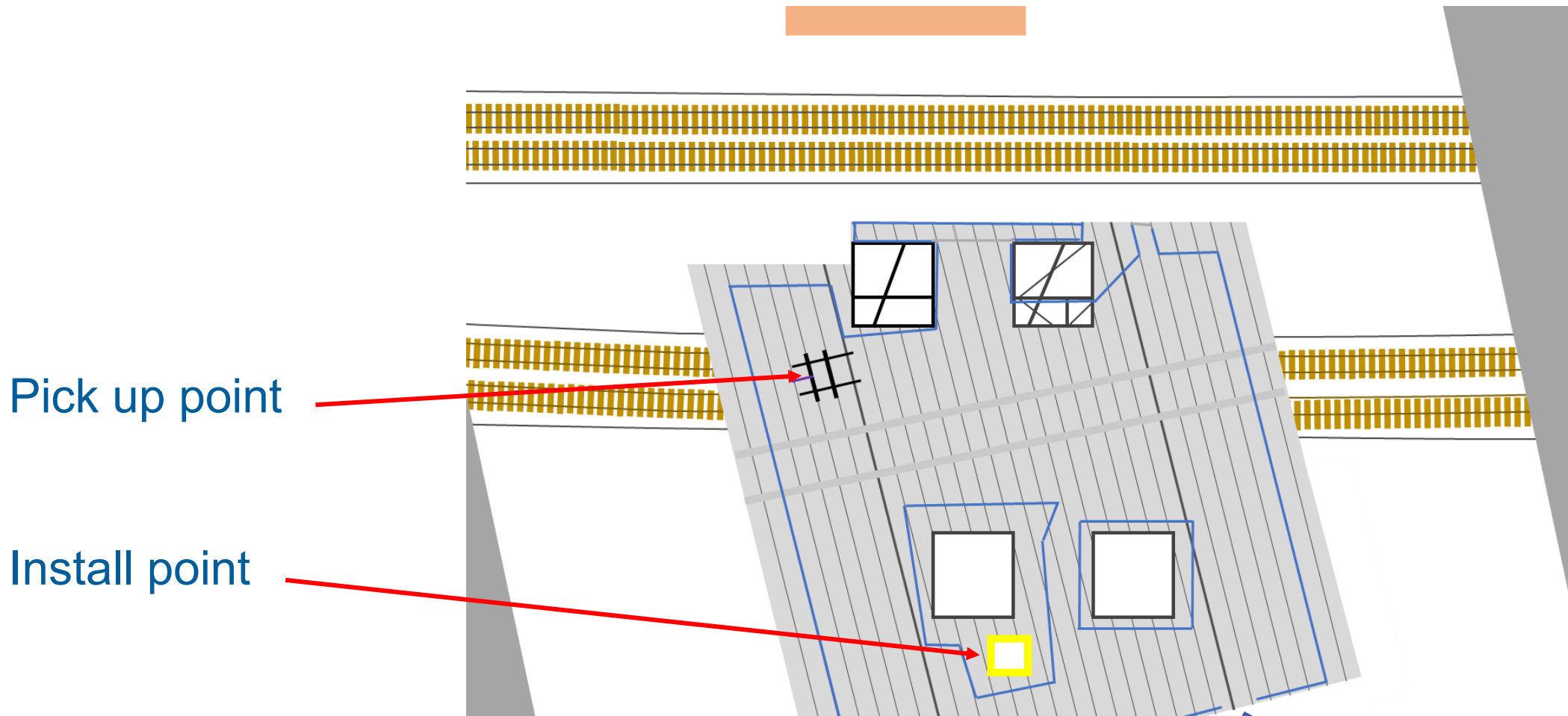
21<sup>st</sup> July 2022, Gatwick Station: Slinger - Signaller fatally injured during the lifting of a glazing frame.

Lifted with on site Tower crane.

Load weight = 0.5te

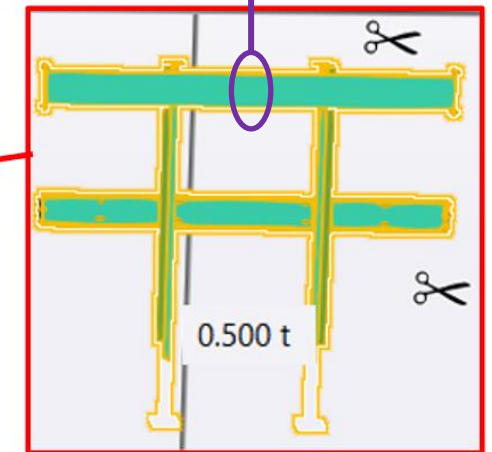
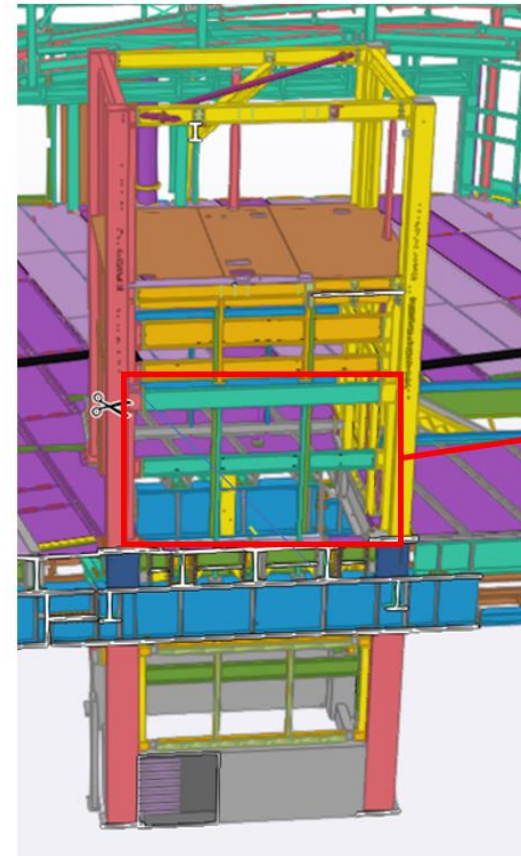


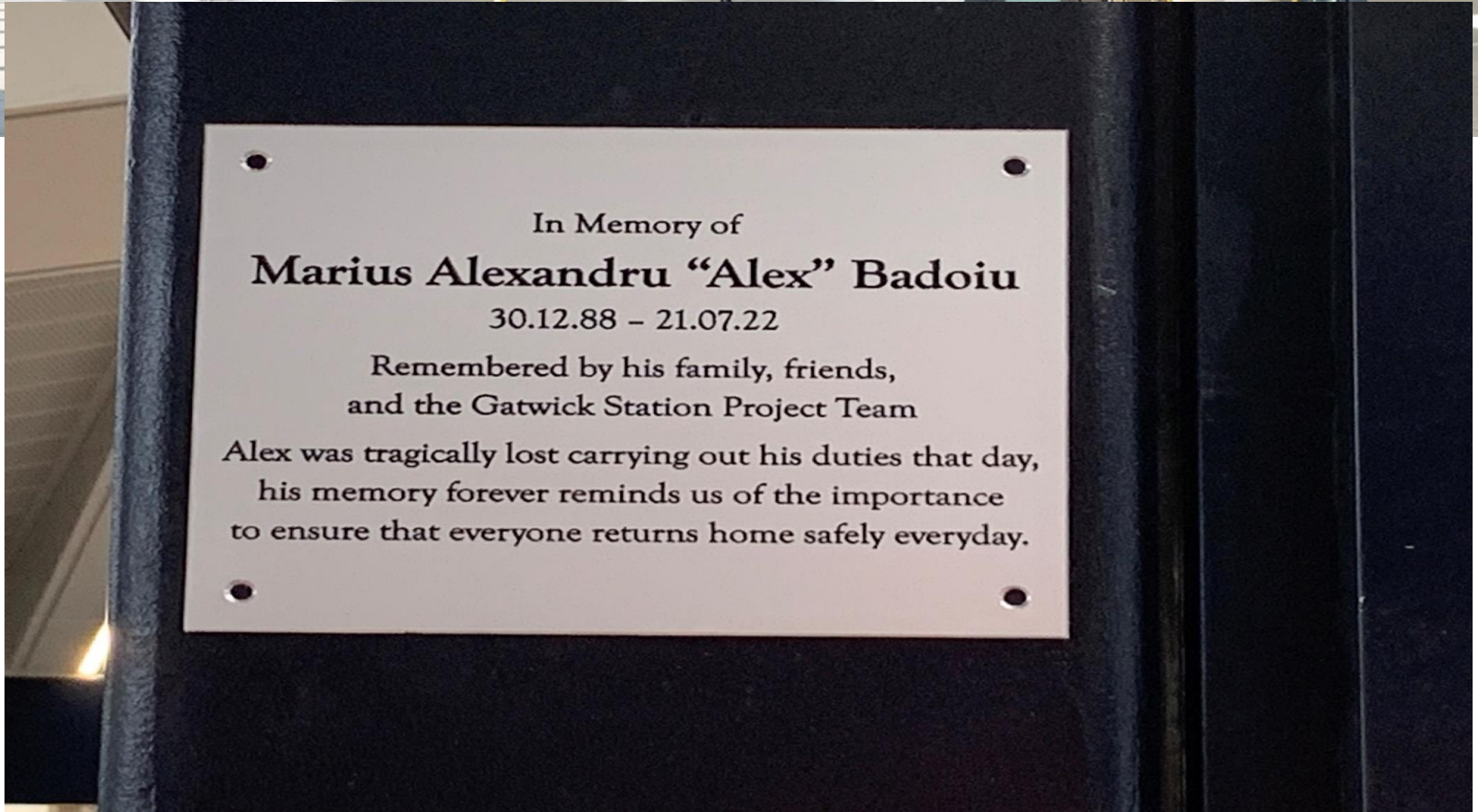
# Lifting accident – Key Information



## Lifting accident – Key Information

- Load was being lifted from horizontal, with 1te sling around the top, to orientate into vertical for installation.
- Slinger-Signaller stood to side of load, assisting in guiding.
- During initial stages of lift, base plate snagged on flange.
- Slinger-Signaller acted instinctively, trying to free the load from the snagging point.
- Sling was overloaded, beyond MBL, and failed.
- The tower crane recorded over 4te a point of failure.
- Load rotated (in plan) and fell onto Slinger-Signaller.

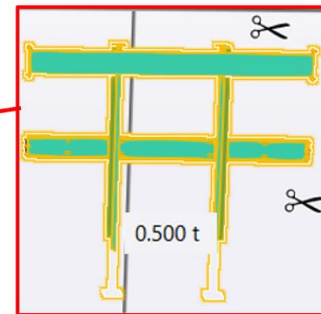
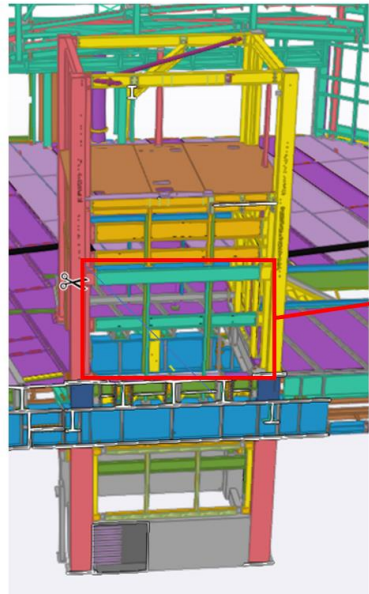




# Assessment of load safety

What would people likely consider?

- Low weight – 0.5te
- Captive slinging – due to the attachment point.
- Benign – the operation & load was perceived as routine / lower risk. Not a blind lift.



## Current Industry lifting practice



### Training

- Told to attach a tag line regardless of need
- Driving a behaviour of close proximity
- BB Lifting Expectations - HAND/TAG LINES
- In certain circumstances, hand/tag lines should be attached to the load to prevent the load swinging or spinning, and to help in landing it in the right place. Always stand clear of the load. Never stand under a load.
- In certain circumstances tag lines may not be a suitable option for load control.

## Current Industry lifting practice



### Undertaking lifts

- Close proximity to loads, regardless of need.
- Hands on the load through habit not necessity (shutters).
- Lack of awareness of potential crush zones, operatives not briefed on the risk.

## Unexpected load movement



What might cause a load to move unexpectedly?

## Unexpected load movement – Potential Causes (18!)



Load designed to rotate



Equipment deflection under load



Obstructions or snagging



Hook not over centre of gravity



Misunderstood communication / comms failure



Equipment moved faster than expected



Load instability



Attachment point failure



Snagged tag line



Turning / pitching loads



Moving centre of gravity (e.g. free surface effect with liquids)



Loads rotate when lifted / landed (e.g. column skip)



Effects of the weather



Load distortion / breaking



Loads settling into slings



Equipment instability



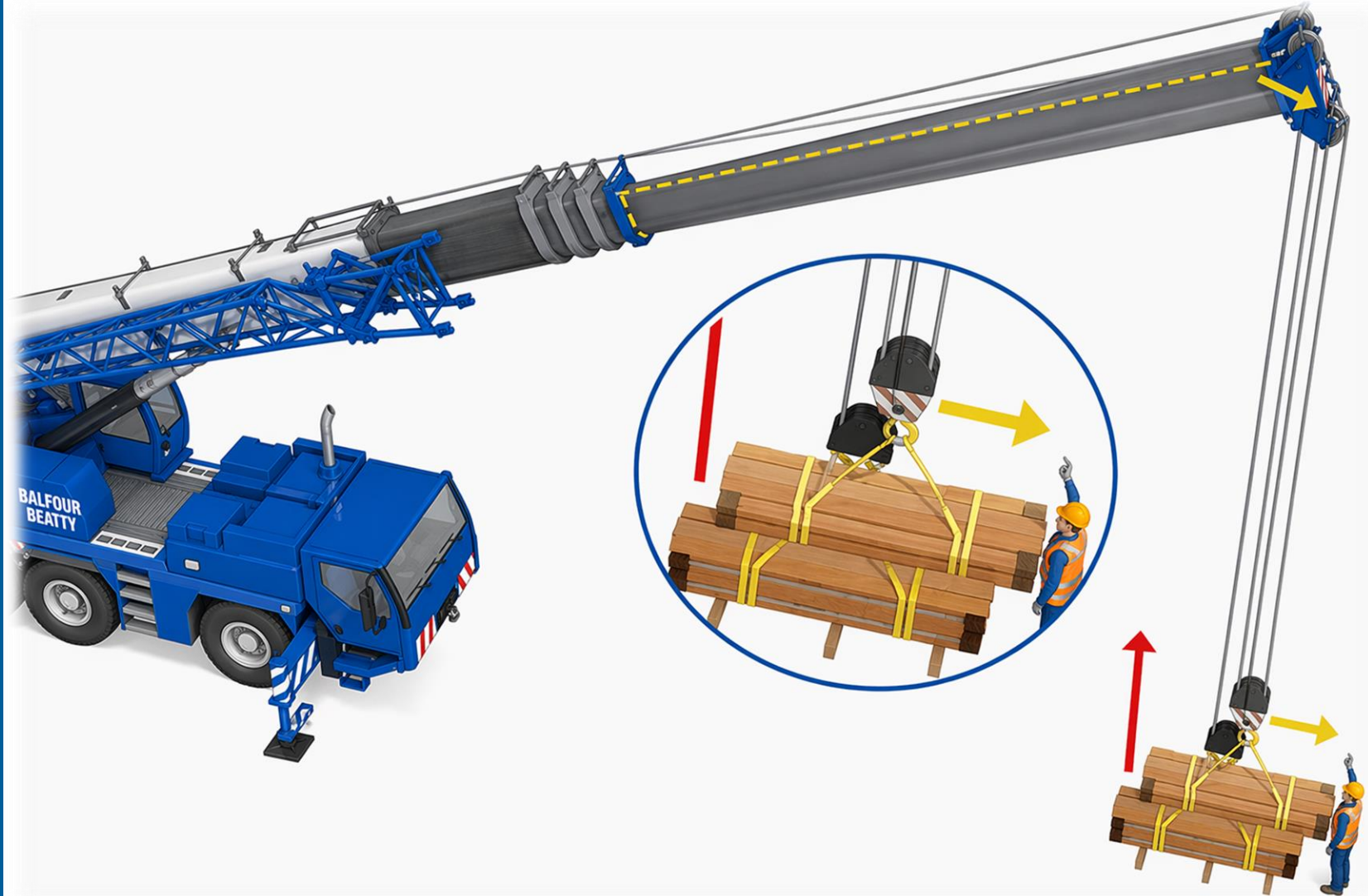
Equipment or accessory failure



Fixed projections above / below load

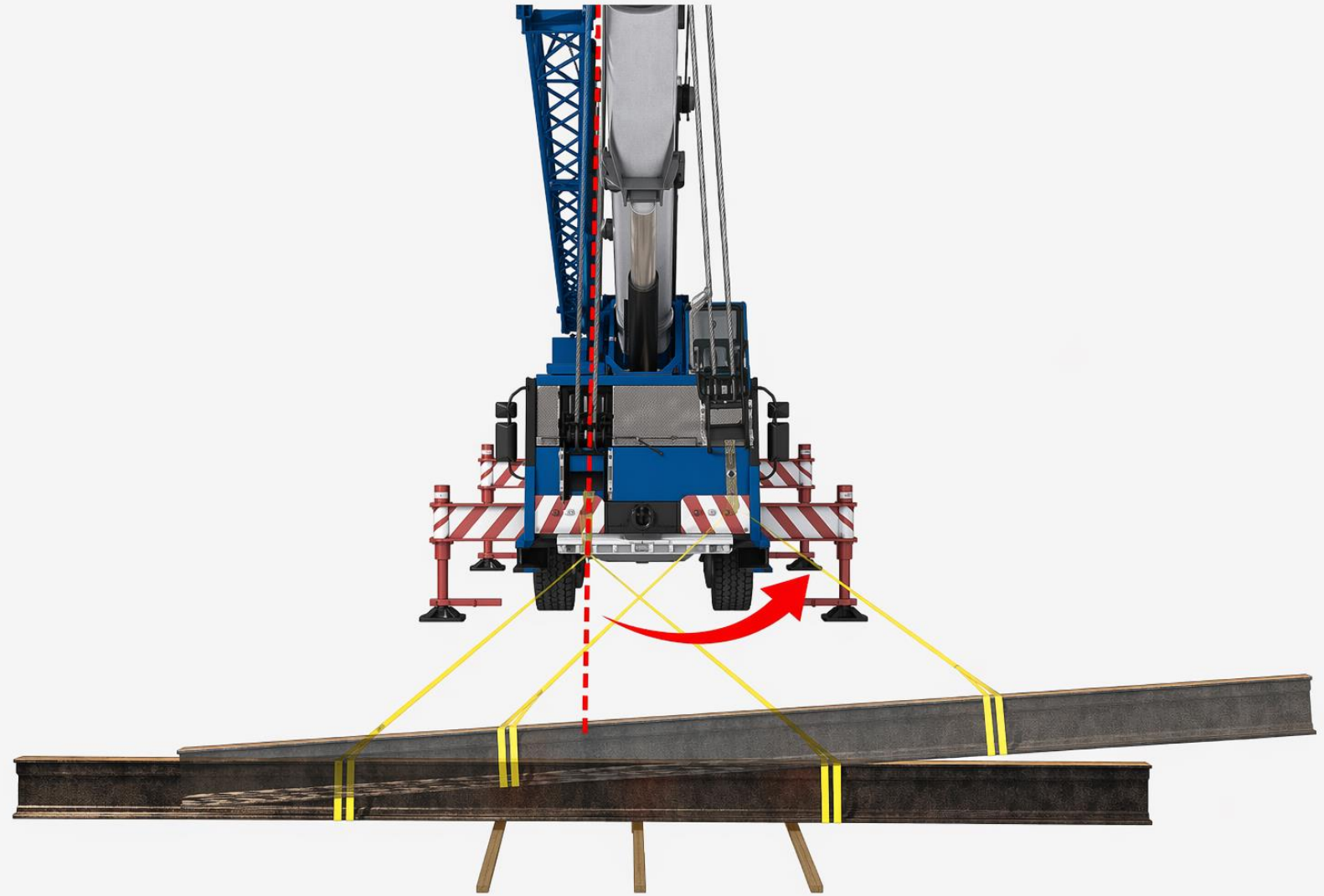
## Lifting Appliance Deflection

- Most lifting appliances will deflect under lifting of a load. The amount of deflection depends on boom configuration (e.g., length) and weight of load. (boom type).
- Experienced lift teams anticipate deflection in the initial raising of the load by the positioning of the crane boom prior to taking the full weight of the load. They also know to stand out of the direction of possible load movement.
- For others in and around the lifting operation [e.g., joiners, steel fixers etc.] the movement may not be expected, which underlines a requirement for only 'essential operatives' to be within the vicinity of the lift.



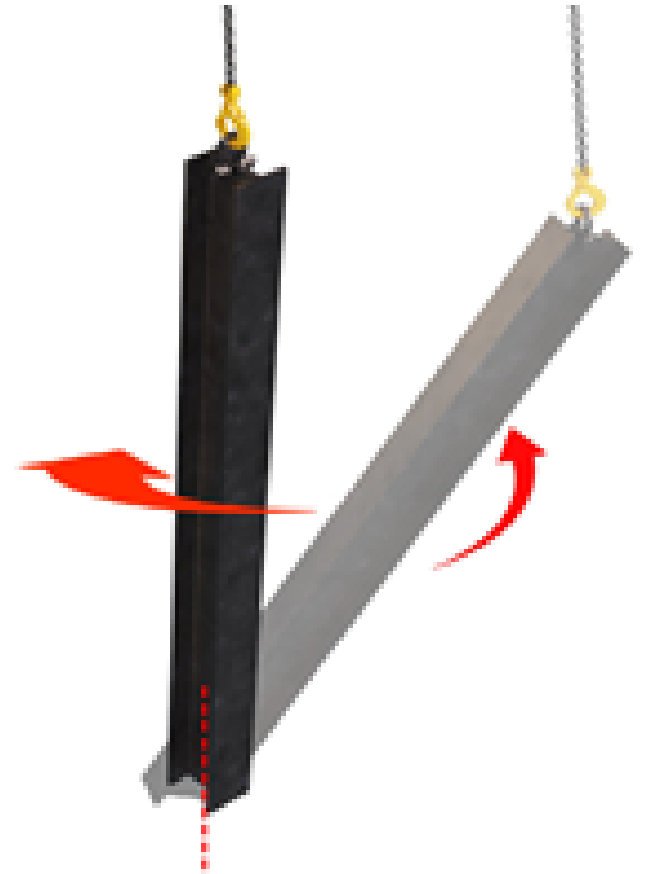
## Load movement

- Centre of gravity not directly under the attachment point of the appliance – so this where hook block & accessories are not sited over the centre of gravity of the load. The load will raise and then align itself with appliance attachment point causing a swinging action



## Load movement

- Loads 'gathering' on initial raising & 'spreading' when being landed. Some loads will 'come together' when picked up, [e.g., loose bundles of scaffold tubes or reinforcement]. As the load gathers within the accessories, it may shift and cause a swing movement as the centre of gravity shifts
- Pitching of loads – during this operation, the load raises from horizontal to the vertical. If lifting too fast, there likely to be some load swing as the load loses contact the ground or if the hook block is not following the CoG.



## Unexpected load movement

- More likely to occur at the start of a lifting operation than once the load is freely suspended.
- People in close proximity to a load moving unexpectedly are more likely to act instinctively to try and resolve.
- People in close proximity to a load are at an increased risk of being struck by a load which moves unexpectedly.

- **Fundamental facts**





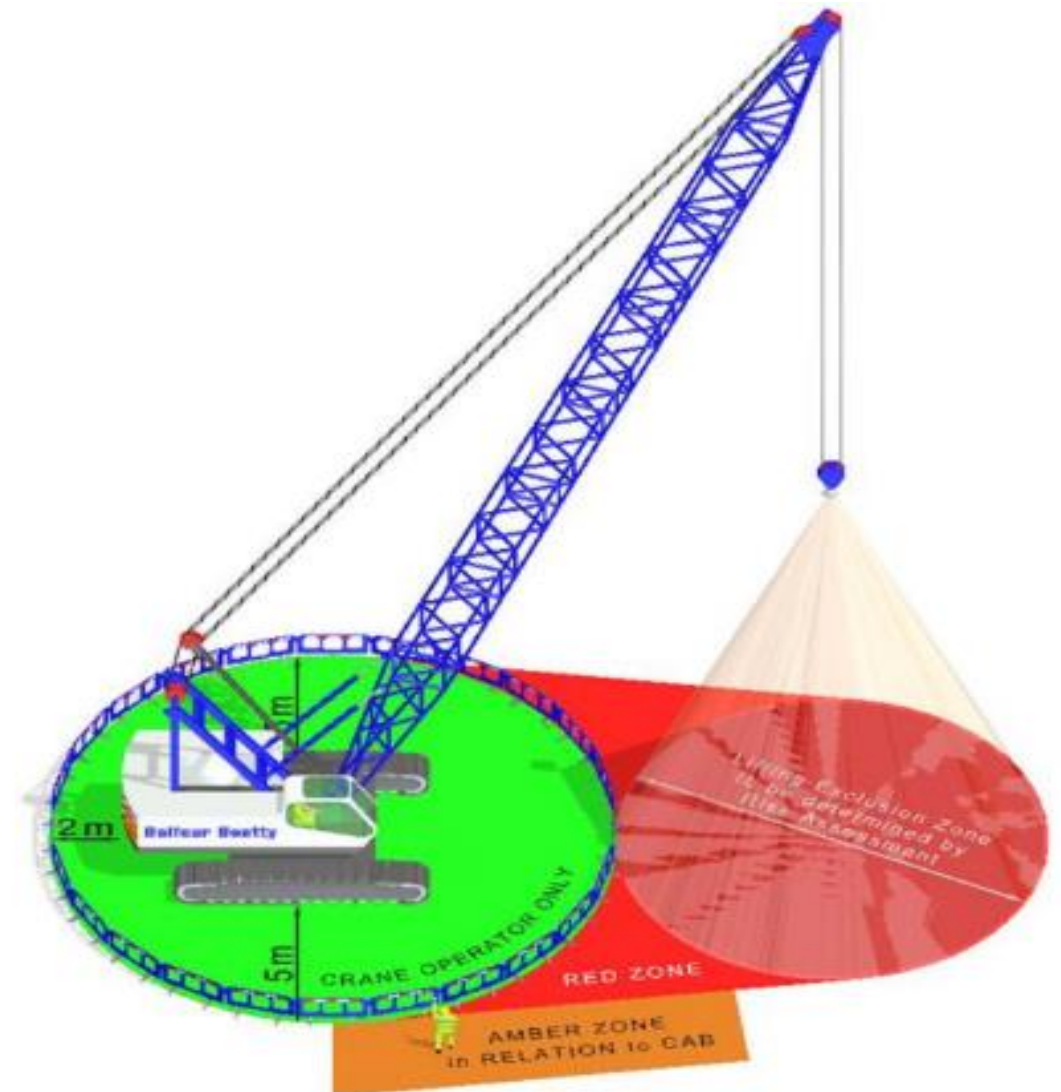
How many things can a person do / think about at the same time?

## How to apply HOSASS

**Hands Off – Step Away – Safe Space** is a simple way of reducing the chance of people being hurt by moving loads, plant, equipment, materials, or anything that can shift unexpectedly.

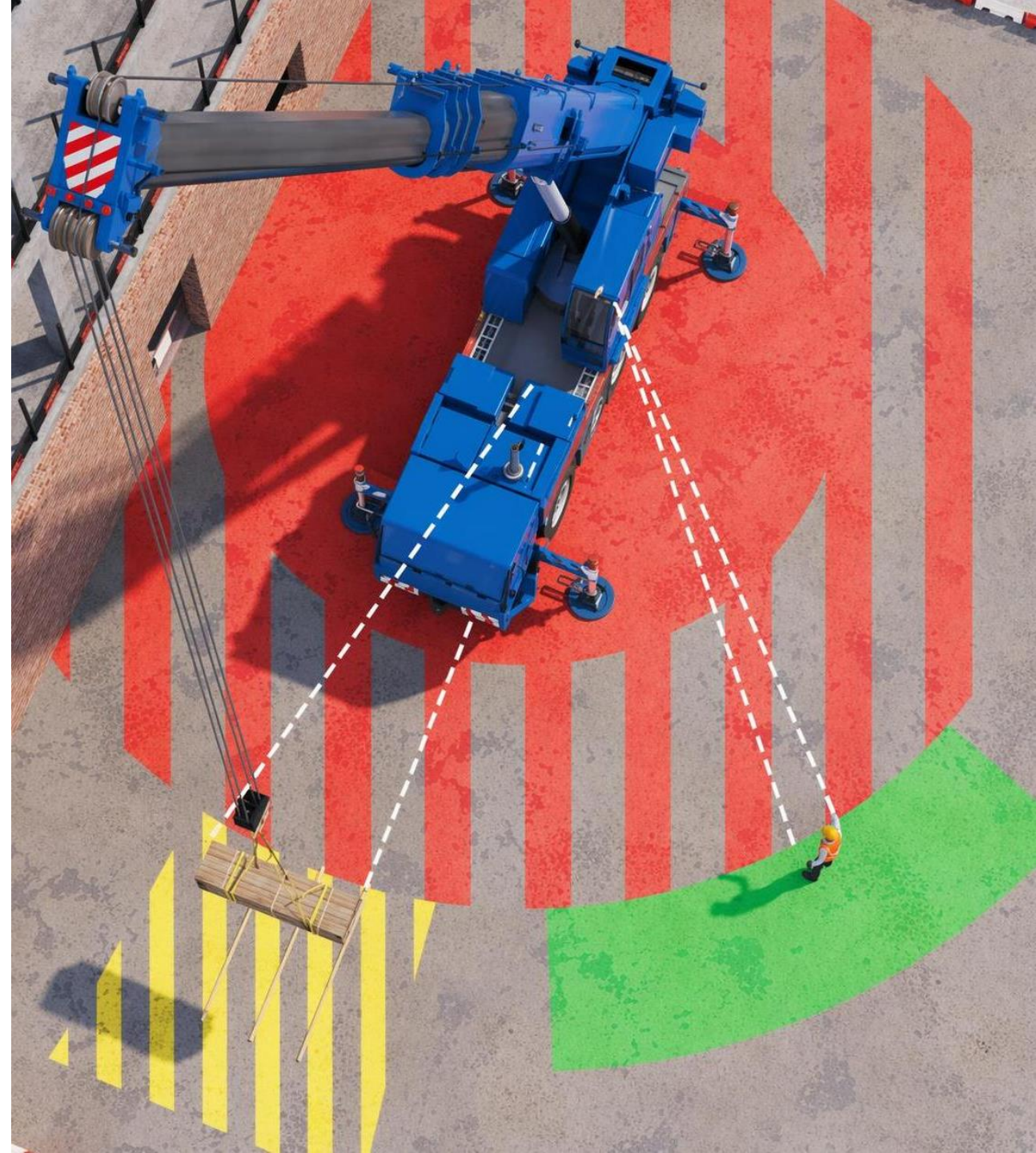
HOSASS is not limited to lifting operations. The same thinking applies to any construction activity where people may be exposed to moving plant, moving materials, unstable items, restricted working areas, pinch points, or anything that could shift, fall, trap, crush, or strike someone.

**HOSASS** does not mean every person has to fully achieve all three elements at every moment. It means people should keep themselves as far out of danger as the task reasonably allows. *Some loads will require direct load control.* *HOSASS does not mean a slinger cannot place their hands on a load. It is aimed to drive behavioural change: Only when absolutely necessary!!*



### Practical use of HOSASS

- **Hands Off** - Keep hands off loads, equipment, materials, or moving parts unless there is a clear need to touch them.
- **Step Away** - Move away from the immediate danger area once your direct involvement is no longer needed.
- **Safe Space** - Stand or position yourself where you are least likely to be struck, trapped, crushed, or caught if something moves unexpectedly.
- Where full separation is not possible, use the safest position available for the task.

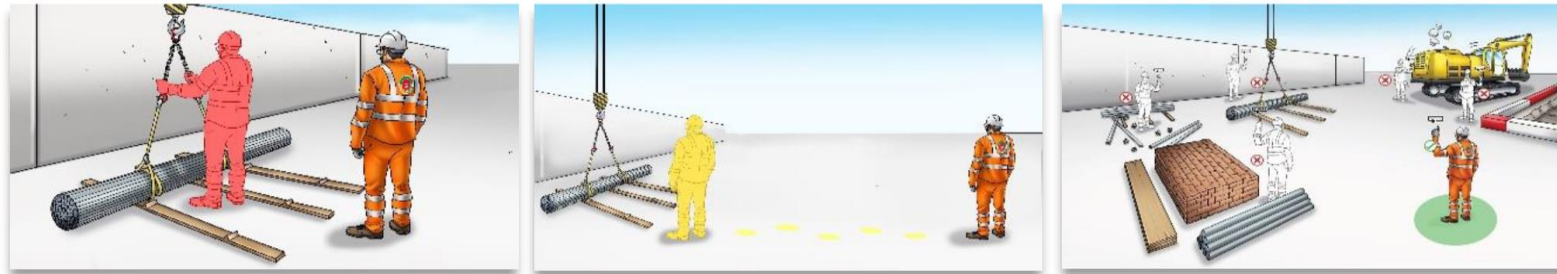


# Lifting a load:

Before you start

Assess your surroundings and identify potential nearby hazards, for example slips, trips, and falls, crushing zones, falling objects, adjacent plant and activities, and areas where you may not be visible to others. Focus on eliminating hazards at source.

Before picking up a load



**Hands off**  
After slinging the load, take your hands off



**Step away**  
Move away from the load



**Safe space**  
Stand in a safe space before directing the crane

Problem during the lift?



**Stop**  
Stay in a safe space  
Stop the lift



**Wait**  
Wait for load to be steady and stable



**Safe?**  
Only approach the load if safe to do so

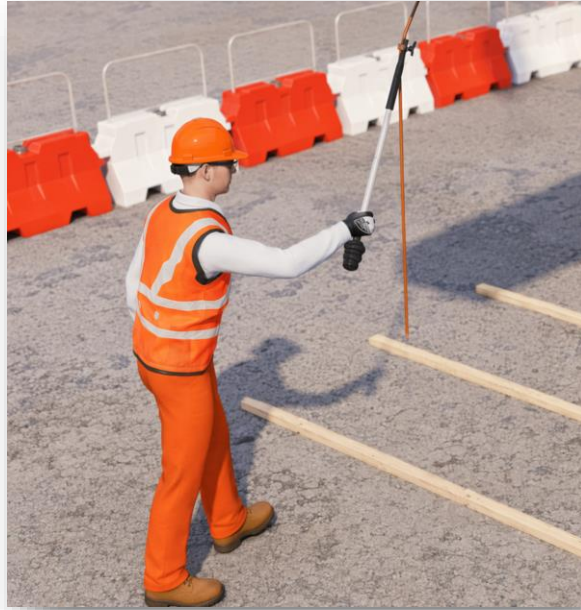
## Landing a load:



As the load lowers under direction of the slinger-signaller, they must not stand under the load or position themselves [or body part] between a fixed or temporary structure. The safe space principle should be maintained.

*When utilising mobile/crawler cranes, 360 telehandlers, excavators etc., slingers should always be aware of their positioning to ensure that they are not stood under the boom of the appliance and remain in clear sight of the machine operator*

**Landing a load:**



**Note:**

*One measure to assist in the slinger not being under the load is to retrieve the tagline at arm's length.*

*Best practice in this situation would be to retrieve the line with a push-pull pole*

## Landing a load:

The load should then be lowered to waist height, where final approach for orientation of the load [if required] can be attended to, to allow a correct and safe landing.

*Note:  
If the slinger-signaller needs to touch the load at this point, they can but they again, must be mindful of placing hands, fingers, and feet in any potential crush points.*



Push pull sticks can be used for load control (where suitable).



## Direct Load Control: Tag Lines

Tag lines are purpose-built rope attached to a load, with the free end held by personnel on the ground to provide control and minimize swing of the load during lifting operations.

They are useful in controlling the rotation of long loads and are particularly helpful where lateral and overhead clearances are tight.

Under certain circumstances tag lines may not be the most suitable option for load control. This should be reviewed by the Appointed Person



Purpose built tag lines:

- Steel hook for ease of attachment
- Anti-tangle
- Anti-Burn
- Snap on, Snap off Hook
- Hi-Vi Reflective
- No more knots

## Direct Load Control: Tag Lines – Examples of bad practice



Tagline wrapped around the operative's hand – this presents the increased potential for the tag line to tighten and cause serious injury.

Operative not aware of the trailing end of the tag line – operatives to ensure they carry out final checks of the load and the tagline prior to crane taking weight on the hook to prevent the potential of incident or injury.



Tagline attached directly to the chain link – this could damage the lifting accessory and the tag line attachment hook.

## Direct Load Control: Tag Lines – Good Practice

Tagline attached directly to the load and not onto any fixings or lifting accessories (where possible).



Slinger stood back from the load, holding the tagline straight and in front of the body allowing the tag line to freely move as the load raises

Trailing end in front of the slinger where they have full visibility

Trailing end of the tagline free of entrapment and possibility of entanglement around the slinger



## Direct Load Control: Tag line guidance and safety – DO!!



- Consider number and positioning of personnel required, safe space?
- Assess the path of the lift, where practicable, remove any obstructions prior to commencing the lift
- Consider where and how to attached tag lines
- Release the tag line if it becomes difficult to control or you are being pulled towards a position of danger.
- Use an appropriate length tagline (excessively short moves you closer to the load, excessively long could catch on surrounding features)
- Use a proprietary tagline with a hook attachment, preferable of the anti tangle type. Min 16mm.
- Attach the tagline to the load in preference to the lifting accessories.
- Only use taglines when it is necessary to guide/control the load and it doesn't create additional hazards. Seek guidance from your Appointed Person
- Use a boat hook or similar (push pull) to retrieve a tagline without standing under a suspended load
- Keep the “spare” end of the tagline tidy so as not to be a tripping or snagging hazard and to allow unimpeded “paying out (releasing slack)” as required
- Lifting operations must be at slow speed during initial lifting and lowering of loads

## Direct Load Control: Tag line guidance and safety – DON'T!!



- Never wrap the tagline around your body or limbs
- Do not allow taglines to trail along the ground or over structures / plant - there is a risk of entanglement
- Do not tie knots in the tagline
- Never step into a loop in a tagline
- Never place any part of your body between a load and another object (potential crush zone)
- Do not position yourself where you could be trapped as the operation proceeds
- Be aware of power lines in the proximity of the lifting operation – taglines must not trail into power lines

*Note: The use of tag lines must be covered in the sequence of operations and risk assessment.*

## Summing up HOSASS:

What we ask is that those involved with all aspects of the lifting operation apply, as best they can, the principal of 'Hands Off, Step Away, Safe Space' through design, planning, supervision and the carrying out of the lifting operation.

This could take the form of:

- Minimising the number of people that 'have to be there', so minimising the number of people in danger! Ensure required exclusion zones are in place.
- Positive attachment points on loads so reducing the risk of loads slipping/falling!
- Loads on delivery vehicles arriving pre-slung so taking those responsible for unloading out of the 'confined space' of the bed of the vehicle!
- Keeping up to date with innovations in the industry that could assist in load control or load placement.
- Challenging the old way of 'doing it' and thinking of a 'better way'



## Summing up HOSASS:

Those at the point of lift ask themselves:

- Is the immediate area cleared and are the required restricted / exclusion zones in place.
- Where can I place myself so that I'm not in danger of entrapment, crushing or being struck by the load, if it were to move unexpectedly?

When handling loads:

- Do I really need to handle the load? Am I approaching or handling the load because that's what I've always done?
- Is it safe for me to handle the load? By approaching the load to use hands on control am I placing myself in danger.
- What am I going to influence by handling the load? What difference will I make?



**Any Questions.....**



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