

All-round *Visibility* Issues with Plant

Visibility

Definition:

“quality, fact or degree of being visible; perceptible by the eye or obvious to the eye”

Visibility

Fact

“it *is* a fact that without control measures, 100% all round visibility can be difficult to achieve”

Accident Facts

- Most accidents are caused by:
 - Moving off from Stationary
 - Manoeuvring at slow speed over short distances
 - Travelling over distance at higher speeds
 - Slewing
 - Reversing
- **All these activities involve the need for optimum vision...**

Some Facts

- Each year in Telehandlers alone, there are 3 fatalities
- There are many injuries and near misses to operators, co-workers and pedestrians
- Many of these are caused by factors relating to visibility and,
- All could have been prevented

Some Factors that can affect Visibility

- Eyesight
 - How good is it?
- Weather Conditions
 - Lighting, Clarity
- Obstructions
 - Ground and site conditions
- Risk Taking
 - Speed, Reaction times
- Maintenance
 - Wipers, Glass, Demisting
- Perception
 - Poor understanding?
- Blind-spots
 - Are vision device aids in place?
- Design
 - Capable of “all round vision”
- Training
 - To operate safely & productively



So, where have we come from?

- Years ago visibility aids were not in common use – operators had to be “extra careful” in duties whilst on site
- Manufacturers designed and built machines on sound principles based around productivity and safety recommendations at the time
- In cab features for operators were basic and somewhat “Spartan”
- There were obstructions in Telehandler designs themselves that caused blind spots – most coming from the boom design
- Addition options to aid visibility from the hire companies were very limited

Examples

- Typical machines illustrating limited vision due to designs at the time



These widely used machines had little or no other means of improving visibility from either the manufacturer or the hirer

Where are we now?

- In conjunction with HSE and subject to risk assessment, both Manufacturers and Hirers are required where practical to provide visibility aids if the design does not lend itself to do so
- The machine designs which aid visibility are much improved
- Operator environment in cabs are much improved – comfort and ergonomic controls
- Focused operator training is now mandatory
- Many visibility aids are now fitted as standard or by prior agreement
- Operators should be able to see an object one metre high from any point of danger – this was impossible with older machines

Examples

- Typical machines offering better visibility



Additional Visibility Aids

- Clean Windscreen/Cabin Glass
- Efficient Wipers
- Windscreen Washers
- Demisters
- Mirrors
- Convex Mirrors (fish eye)
- Work Lights
- Rear View Camera's
- Proximity Alerts (reversing alarms, "Backscan")
- Collision Avoidance Systems

Visibility Aids

Examples:



Rear View Camera's

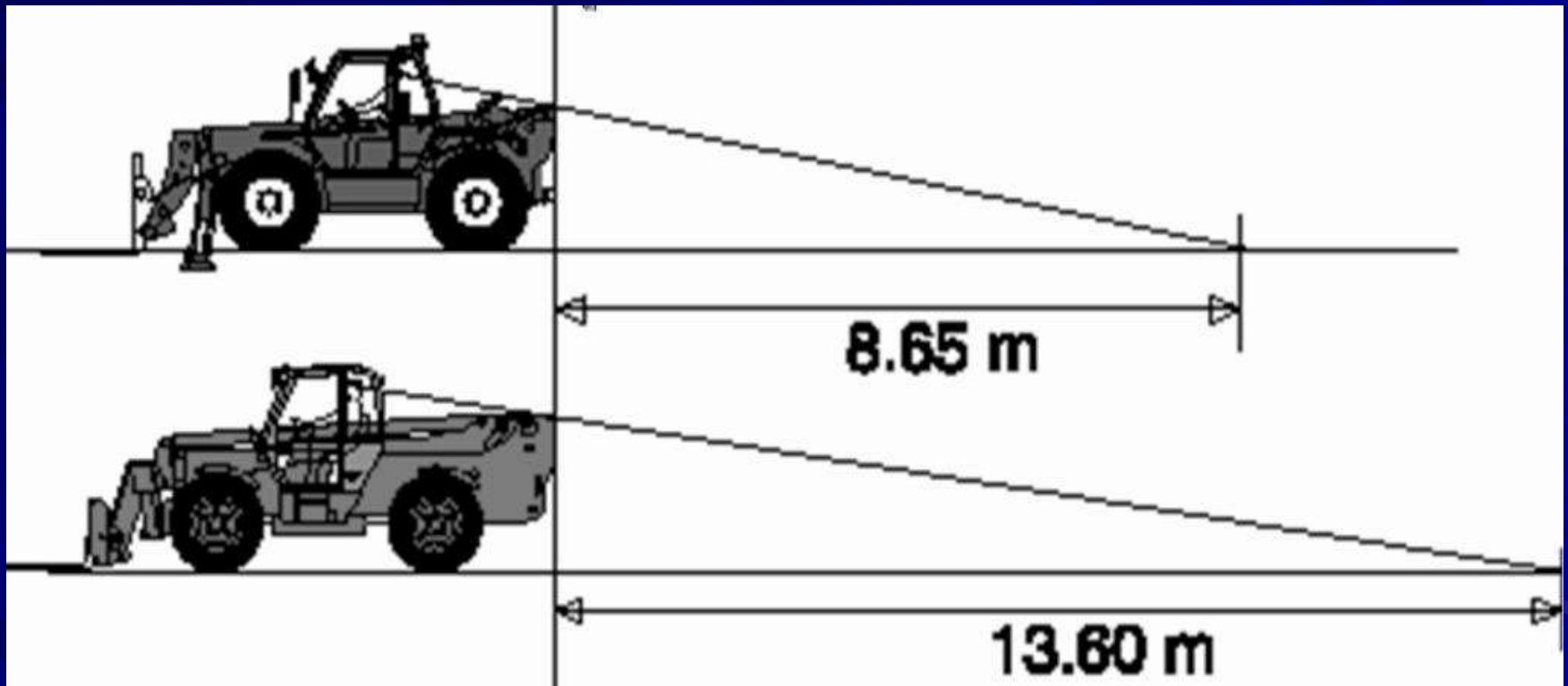


Advances in Design



Visibility

- Machine choice



4.95 metres less visibility

Compactness and manoeuvrability

360° visibility to stay in close contact with your surroundings



360° visibility makes difficult manoeuvres easier and safer

Example of Control Designs

From this



To this



Although not a direct visibility aid, ergonomic designs keep operators more in control and eyes ahead than having to think of too many levers

Additional Considerations

- **Vehicle speed and Stopping**: visibility aids must be able to allow the driver to respond to a hazard in good time to prevent impact.
- **Site Conditions**: the type of visibility aid fitted to the equipment should be appropriate for the site's conditions. For example, in certain circumstances, users will prefer to use colour CCTV because of the improved contrast it provides against certain backgrounds.
- **Lighting conditions**: vehicle lighting systems or additional external sources such as tower lights may compensate for low ambient light.
- **Human factors**: the visibility aids should be selected and fitted to maximise the operator's chances of perceiving danger. Too many may confuse an operator and render them ineffective. Some additional may also be appropriate for ergonomic reasons – e.g. Control Designs

Summary

- With careful choices, all round visibility on most equipment is achievable with visibility aids. However care must be observed, machine design might be considered above these aids if it offers the best degree of visibility. The primary sources of *visibility* is often overlooked when in fact, it can be the most important. Careful risk assessment must be undertaken in the workplace taking into account:
 - The type of machine being used
 - The working/operating environment
 - Operator training
 - Other site operatives
 - Legislation

Thank-you for listening