

Accident Sharing and Preventive (ASAP) Program

“Scissorlift”

On 6 June 2017, around 6pm, a worker was carrying out cable trunking works at the 3rd level of a building under construction using a scissor lift. When the scissor lift toppled to its side, the worker fell from the scissor lift's platform and into a floor opening before landing on the ground. The worker was pronounced dead at the scene.

Common corrective control to reduce or mitigate for the erection of scaffolding and falling from height would be the use of Mobile Elevated Work Platform (MEWP) or also known as Aerial Lift.

Such equipment would also possess its hazards and limitation, which management of such equipment is very important.

COMMUNICATION

Communication on site is not simply just talking and the other party listening.

Raised questions to the work crew would allow the supervisory staff to counter check the required information being brought across and understand by the work crew.

POINTERS TO SHARE

Following are precautions pointers that can reduce the risk of injury when operating an MEWP.

- Competent Operator: Operator shall undergo statutory training course and also familiarisation training by supplier/manufacturer to use their machine.
- Ground conditions: The platform should be used on firm and level ground
- Outriggers: Outriggers must be extended and chocked before raising the platform.
- Guardrails: Make sure the work platform is fitted with effective guardrails and toe boards
- Falling objects: Barrier off the area around the platform
- Handling materials: Check the weight and dimensions of any materials and consider load distribution issues.
- Confined overhead working: If there are overhead structures, consider selecting an MEWP that has been designed to prevent such accidental contact.

- Nearby hazards: Do not operate an MEWP close to overhead cables or other dangerous machinery, or allow any part of the arm to protrude into a traffic route
- Arresting falls: a harness with a short work restraint lanyard must be provided and anchored at the designated anchorage point.
- Weather: Set a maximum safe wind speed for operation. Inspect the platform before use after severe weather.

Questions can be asked before the activity in the tool box talk:

- 1 How is the ground condition that the MEWP required to travel and operate?
- 2 What are the things to check before moving of MEWP?
- 3 What happens when operator unable to reach the elevated work area due to site constraint?

a. Loading on MEWP

The following loading factors are to be considered when using of MEWP:

- i. The maximum allowable load could be used on work platform to adhere and comply with the manufacturer operation manual. In some model of MEWP, Safe Working Load on changes when the configuration changes.
- ii. The load on the platform shall be evenly distributed and place within the platform.
- iii. Side Forces or Side Loads can cause instability to any MEWP. Side Forces/Loads include but not limited to the use of power tools/jets, pulling/lowering hose, ropes, pipes, etc. onto/ from the platform.
- iv. Adding loads to the work platform at height can cause instability to MEWP. It shall be done only if it can be carried out safely and that the work platform will not be overloaded

This is a guide to help for effective sharing in tool box talk.



“Scissorlift” Cont’d..

- v. Carry material outside of the work platform is prohibited as it imposes additional loading/force unless using a carrier designed for the intended purpose and with written authorization from the MEWP manufacturer
- vi. Material larger than the work platform being carried added risks to the MEWP. Such operation shall be carried out in accordance with the manufacturer's instructions. An even distribution of loads shall be ensured, a risk assessment shall be carried out and safe work procedure shall be adhered to.
- vii. MEWP shall not be misuse as a crane with the load suspended from the platform, This will causes instability to the MEWP unless it is specifically approved by the manufacturer.

b. Work Activities hazards on MEWP

- i. Entanglements caused instability to MEWP. Cables or hoses coming from the work platform shall be supported or stowed to prevent entanglement.
- ii. Snagged MEWP or MEWP which any moving parts (like platform, boom or scissor packs) are being caught on a fixed structure while the MEWP is ascending or descending can cause instability to the MEWP. If reversing the controls cannot free the MEWP when the work platform or extending structure is being caught, the operator and other personnel working on the MEWP shall be evacuated from the work platform by other means before attempting to free the MEWP using ground controls.
- iii. Collision with other moving equipment in your working proximity can cause instability to MEWP. When working in close proximity with other moving equipment and vehicles, special precautions shall be taken.

c. Weather /Wind factor

- i. Wind Force on MEWP causes instability to MEWP. No modifications or additions to the MEWP that affect its wind loading and consequently its stability shall be made without the manufacturer's approval. All MEWP, except those designed especially for indoor use, are designed to operate in maximum wind speed conditions, which should be clearly marked on the machine. The MEWP manufacturer's instructions for the maximum permissible wind speed for operation of the MEWP shall be adhered to.
- ii. Effects of the wind on MEWP in the work platform such as when handling building materials, sheet materials, panels and other materials in the platform can act as sails, which will cause instability to the MEWP.
- iii. Local wind effects are important to note as well. The shielding and funnelling effects of buildings can cause high wind speeds and turbulence on days when the wind speed in open areas is low.

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d. Ground Condition Assessment

Ground Condition affects the stability of MEWPs. It is necessary to obtain information about the ground conditions. Moving from a hard ground to soft may cause the machine to out of level and overturn. This includes ground investigation, floor/ground bearing capacity, a safe distance from excavations and underground services.

Site can be split into following categories and likely hazards need to be considered:-

Greenfield Sites

- No previous construction activity
- Particular problem areas are adjacent to rivers, estuaries and flood plans where soft alluvial deposits and high groundwater tables can be expected

Beaches

- Low sand density and/or high/variable water table create difficult conditions

Filled construction sites (Brownfield sites)

- Unknown previous conditions, e.g. basements, poorly filled open pits, storage tanks, variable and compacted fill.

Paved areas (Roads, pavements, paths & car parks)

- These can look deceptively strong but may have been laid on weak ground underneath
- If a road is regularly used by heavy commercial vehicles and shows no sign of distress then it will be less of a concern than a lightly trafficked car park or estate road
- Footpaths always demand further investigation as there may be weaker material or shallow services underneath thin surfacing
- Edges of paved areas are usually weak

Town centre sites

- Expect underground hazards e.g.: basements, sewers, tunnels, live services, poorly backfilled trenches, manholes inspection chambers etc.

Ground Condition Hazards

Some typical ground condition hazards that may be encountered are:-

Uncompacted Fill

- Soil or other fill material might be piled along the line of a backfilled trench without being compacted. Cracking of the ground along the line of the trench is an indication of uncompacted fill.

Proximity to Excavations

- MEWPs should not be positioned near to the edge of trenches and other excavations as these are likely to collapse without warning. If the machine needs to be used close to the edge of a slope or excavation, with the outriggers or wheels in the "danger area", an engineering assessment must be by a competent geotechnical engineer before the MEWP is set up and operated.

Source from International Powered Access Federation (IPAF) – South East Asia

Reference: www.wshc.sg

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