



19 May 2021, Ref: 2122011

Accident Advisory: Worker pinned by toppled forklift

Ref: [2021094](#) WSH Alert Accident Notification dated 17 February 2021

On 20 February 2021, a worker was operating a forklift at a work site when he reversed it into a hacked pit. The forklift toppled and pinned him. The worker was subsequently rescued and conveyed to the hospital where he succumbed to his injuries.



Figure 1: The toppled forklift.

Recommendations

Stakeholders in control of similar workplaces and work activities, such as occupiers, principals and employers, are advised to consider and implement the following risk control measures to prevent similar accidents:

Competent forklift operator

- Only allow trained, competent and authorised operators to operate forklifts.
- Ensure all authorised forklift operators have received adequate training conducted by an accredited training provider. Relevant certifications include the Singapore Workforce Skills Qualifications (WSQ) Operate Forklift Course.
- Provide forklift operators with refresher training every three years or following a period of inactivity (e.g. due to COVID-19). Additional in-house training with support from the forklift's manufacturer or supplier is highly recommended.
- Remind/instruct workers who are not trained in forklift operation that they should never attempt to operate the forklift under any circumstance.

Control forklift key access

- Implement log-in and log-out system for forklift keys to control access to forklift keys and operation, e.g. the supervisor, while allowing only authorised forklift operators to have access to forklift keys, can maintain a logbook to record sign-in and sign-out of the forklift keys by authorised forklift operators.
- A steering lock mechanism can be used on the forklift steering wheel to prevent unauthorised use of forklift by unauthorised workers.
- An electronic code switch can also be installed on the forklift to prevent unauthorised

use. Such a switch allows the supervisor to track and identify the most recent forklift operator should an accident occur, or when the forklift is damaged.

Use presence detection technology

- Explore the use of seat occupancy detection technology to detect the use of seat belt and the weight of operator on the seat. The forklift may be programmed to allow operation only if the operator is seated with seat belt fastened, and to automatically cut off the engine once the operator gets out of the seat.

Barricade hazardous area

- All hazardous areas such as excavated areas and pits where there is a risk of falling into must be barricaded (e.g. with fencing, hoarding or guard rails). The barriers should be erected on all paths and possible approaches to the hazard location.
- Suitable warning signs should be placed nearby to alert people of the presence of the hazard. The warning sign should clearly indicate the hazard and be legible to all concerned, including workers and members of the public.

Safe work procedures

- During forklift operation:
 - Buckle seat belt
 - Wear the appropriate Personal Protective Equipment (PPE) such as safety helmet, safety shoes and reflective vest.
 - Do not extend any part of the body beyond the sides of the forklift.
 - Move the forklift only if certain that there is no obstruction or people in the path of travel.
- Require forklift operators to switch off the engine and remove the ignition key before leaving the forklift.

Risk communication and work supervision

- Brief all workers on the possible hazards and risks that they could encounter in the designated work area. Principals and employers may use toolbox meetings to communicate on-site hazards and the risk controls in place to all persons (including contractors) about to work in the vicinity. In general, workers should be advised to stay away from hazardous areas especially if their work does not require them to be at that location.
- Remind workers to alert their supervisor and/or co-workers the moment they encounter a dangerous situation.
- Deploy an on-site supervisor to monitor and supervise forklift operations to ensure that they are carried out safely.

Risk Assessment

Conduct a thorough Risk Assessment (RA) before carrying out on-site work activities including the operation of machinery such as forklift trucks. All identified hazards and foreseeable risks must be suitably addressed with risk controls implemented to protect workers from harm. The RA should cover, but not limited to, the following areas:

- Forklift ignition key access control and possible operation by untrained personnel;
- Possibility of operator entrapment should the forklift overturn;
- Presence of on-the-ground obstacles/obstructions that may impede forklift operation and/or result in an accident;
- Measures to prevent workers from placing themselves in dangerous acts or situations;
- Measures to deter haste to complete works at the expense of safety or health; and
- Emergency preparedness and response plan.

Further Information

1. Workplace Safety and Health Act
2. Workplace Safety and Health (Risk Management) Regulations
3. Workplace Safety and Health (General Provisions) Regulations
4. Workplace Safety and Health (Construction) Regulations 2007
5. Code of Practice on Workplace Safety and Health Risk Management
6. Singapore Standard SS 573: 2012 Code of Practice for the Safe Use of Powered Counterbalanced Forklifts
7. WSH Guidelines on Safe Operation of Forklift Trucks
8. WSH Council's Forklift Safety Pack
9. WSH Council's Guide to Effective Toolbox Meeting
10. WSH Council's Activity Based Checklist on Safe Use of Forklift Trucks
11. WSH Council's Activity Based Checklist for Effective Toolbox Meetings
12. WSH Council's Construction Case Studies Booklet
13. WSH Council's Logistics and Transport Case Studies Booklet

Information on the accident is based on preliminary investigations by the Ministry of Manpower as at 27 February 2021. This may be subject to change as investigations are still on-going. Please note that the recommendations provided here are not exhaustive and they are meant to enhance workplace safety and health so that a recurrence may be prevented. The information and recommendations provided are not to be construed as implying any liability on any party nor should it be taken to encapsulate all the responsibilities and obligations under the law.

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