Working at Height Assessment: Learning from Experience on Military Vehicles

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SUMMARY

Working at height introduces additional risks to individuals in the workplace. A major risk is that of falling. Falling from height is one of the leading causes of workplace fatalities. Falling from height results in high kinetic injuries; despite advances in medical care, these injuries have high morbidity. The Health and Safety Executive (HSE) currently provides guidance to practitioners on what needs to be done to protect individuals. The guidance was found to be not as extensive as initially expected and introduced uncertainty on the approach to take. It should be considered whether the working at height guidance could be expanded and how a more comprehensive guide could be created.

KEYWORDS

Working at Height, Guidance, Risk

Introduction

Falls from height are one of the leading causes of fatalities and major injuries in the workplace (HSE, 2014). In 2023/24, it was reported that 50 fatal injuries in Great Britain were due to falling from height (HSE, 2024). An increased morbidity is associated with falls from height due to the high kinetic nature of these injuries (Alizo et al 2017). As such, the risks and consequences of working at height should not be underestimated.

Working at height is a reality for many Armed Forces personnel when undertaking their normal roles and day-to-day tasks. Regardless of whether they are completing maintenance tasks, or out on operations, there is often a need for personnel to work on the roofs of land platforms. Example platforms heights are (Army, 2024a; Army 2024b; Defence Equipment & Support, n.d.):

- 2.78 metres for Warrior;
- 3.4 metres for Stormer; and
- 2.5 metres for Challenger 2.

The Armed Forces seek to abide to the HSE regulations, but the training for and deployment into combat environments during military operations pose unique challenges, where the falling from height risk increases. This paper looks at the HSE Guidance and the experience of applying that guidance to military vehicles.

HSE Guidance

Guidance for working at height is provided by the HSE, which takes the form of a brief guide. Within the guide a step-by-step diagram is provided flowing through the following decision steps:

- Can you AVOID working at height in the first place? If NO, got to PREVENT

- Can you PREVENT a fall from occurring? If NO, go to MINIMISE
- Can you MINIMISE the distance and /or consequences of a fall?

Applying HSE Guidance

What we did

A recent project required a working at height assessment on a military vehicle to understand whether the safety measures and provided fall arrest equipment were sufficient to protect those working at height on the vehicle.

At the outset of the task the locations at which personnel may be working at height and the tasks performed at those locations were identified. The HSE guidance was then reviewed and the following prompts were selected to guide in-person questioning during the vehicle working at height assessment:

1. How is the task completed?
2. What protections are in place for a fall from height?
3. What would be the impact of using fall arrest equipment on task performance?
4. Can you AVOID working at height? If NO go to PREVENT
5. Can you PREVENT a fall from occurring? If NO got to MINIMISE
6. Can you MINIMISE the distance and/or consequence of a fall

During an in-person assessment, personnel were asked to describe the task that they would be completing at each location and were asked to focus on what they thought the risks associated with working at height for the task would be. Once an initial understanding of potential risks were identified, personnel were asked to step through the task making use of the fall arrest equipment provided. Crash mats were placed around the work area to reduce the working at height risk of the assessment. Feedback was collected on the practicality of using the fall arrest equipment and any additional risks that its introduction may introduce.

What we experienced

Drawing from our experience of using the working at height guidance provided by the HSE the following observations are made on the utility and challenges associated with using the guidance.

Utility:

- Understanding how a task is completed is an important first step. It enables the practitioner to better understand what the task involves, who is involved and how it is to be completed.
- Better understanding of task conduct and completion allows for the practitioner to more easily assess whether potential working at height mitigations and protections will be appropriate and effective.
- Conducting a working at height assessment in-person at the location of the task with end-users allows for better understanding of the task, all that is involved and common practice amongst end-users.
- The three HSE provided questions were useful to guide discussion and ensure that all potential working at height mitigations are discussed.

Challenges:

- The guidance was not as expansive as first anticipated and left the practitioner questioning whether the working at height assessment was being approached correctly.
- HSE (2014) acknowledges that a sensible approach is needed when considering precautions for working at height as there are some low-risk instances where no particular precautions may be necessary. However, military vehicles are characterised by awkward footholds and are subject to a number of safety regulations. An approach that can allow for verification and validation of these instances would be more beneficial.
- In comparison to other HSE assessments, such as manual handling, it would have been beneficial to have more quantitative guidance to support the assessment. A particular gap was identifying what level of mitigation would be required for working positions of different heights.
- Military vehicles are characterised by protruding equipment and rough surfaces. There is little guidance to support the practitioner to understand and assess the effect falling from height. How an individual falls, and what they may hit on the way down, needs to be more clearly considered within the guidance.
- The threshold of when a mitigation is more dangerous than having no mitigation is not covered within the guidance. For example, for certain heights would the physical consequence from the pull of a harness when falling and the swing into the side of the vehicle be less dangerous than hitting the floor? Instances such as these fall outside of the low-risk instance where a sensible approach is accepted.
- No clear guidance is provided on what to do if none of the three decision points can be met. For example on operation, it may not be possible to avoid working at height, time criticality may mean that donning fall arrest equipment is not practical and there may be no infrastructure to allow the distance or consequences to be minimised.

Conclusion

It should be considered whether the working at height guidance can be expanded to provide a more comprehensive guide to practitioners, how guidance should include consideration of the effectiveness and risks associated with the mitigation itself and if a quantitative approach is appropriate.

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