



FEM Guidance¹ regarding to
FEM N 0284 Position Paper of
FEM Product Group Cranes and Lifting Equipment -
Sub-Group Mobile Cranes
Regarding: "Lifting Persons with Mobile Crane"

Introduction

FEM Product Group Cranes and Lifting Equipment Sub Group Mobile Cranes issued the position paper on the use of mobile cranes for lifting of persons (FEM N0284 dated May 16th 2011). The position paper was interpreted in different ways. Thus the position paper was further discussed between FEM, users and end users, namely representatives from the European Association of abnormal road transport and mobile cranes (ESTA) and Events in the Sky (E.I.T.S.) / Fungroup, owners of "Dinner in the Sky" platforms. The technical discussion was based upon the general principles of risk assessment.

This guidance document is intended to publish the results of the discussion and to give further guidance and explanation with regard to the position paper.

The position paper stated that standard mobile cranes are not designed or intended to lift persons; they may be used to hoist and suspend personnel in man baskets only in unique work situations when it is the least hazardous way to do the job. As such the use of standard mobile cranes to suspend persons and/or devices for entertainment purposes is also not intended.

Any use of mobile cranes outside the intended use stipulated by the manual is under the full and sole responsibility of the owner/user.

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"This paper should serve only as a reference and overview: it is meant to provide guidance in the assessment of risks and requirements when lifting persons. It neither addresses each and every imaginable scenario, nor is it a binding interpretation of the existing legal framework. It does not and cannot replace the study of the relevant directives, laws and regulations. In addition, the specific features of different products and their various applications have to be taken into account. This is why the assessments and procedures referred to in this paper may be impacted by a large variety of circumstances."

Consideration

The groups of people being considered in this guidance include employees and guests. Employees are often working near and/or on suspended devices; thus the devices may be considered under national laws as work equipment.

When considering lifting of persons, it is required to perform a full and comprehensive risk assessment for the entire application by comparing the standards to which the mobile crane to be used has been designed and manufactured (e.g. EN13000) with relevant national law and standards first of all for:

- General safety regulation/law (e.g. 2006/42/EC Machinery Directive)
- Safety regulation/law for Work Equipment (e.g. 2009/104/EC Work Equipment Directive)
- Standard for Mobile Elevated Work Platforms (e.g. EN280)
- Standard for Fairground Equipment (e.g. EN13814)

The risk assessment shall consider all relevant risks for the specific application. Furthermore all additional laws and standards in force in the country of use and relevant for the entire application should be considered, thus the list of laws and standards quoted is not exhaustive.

For all risks identified and not covered by design and manufacture of the mobile crane adequate counter measures should be defined. Adequate counter measures can be:

- Technical measures
- Limiting the configurations to be used
- Limiting the functions, e.g. switching off certain functions
- Application of defined procedures to abate risk, that are used and practiced

The combination of a standard mobile crane and a device for lifting persons along with the appropriate risk assessment and the counter measures defined creates a new machine for a specific use beyond the originally intended use stipulated in the manual. This new machine has to fulfil the relevant national laws (e. g. Machinery Directive) and is operated under the full and sole responsibility of the owner/user.

National law may require the involvement of qualified third parties in the process of risk assessment and approval of the application.

Findings

The following list contains some major topics to be observed when comparing EN13000:2010 with EN280:2010 and EN13814:2004. The list is not exhaustive and needs to be adapted to the specific application, for example:

- Life cycles of equipment and devices
- Maintenance of equipment and devices
- Work history of the equipment including environmental conditions and overloads
- Safety factors in structure and functional mechanisms
- General design principles of functional mechanisms
- General design principles of control systems
- Requirements for performance levels (PL) of control systems and functions
- Emergency considerations and emergency power supply
- Requirements related to configuration selector switches
- Requirements related to override of safety functions
- Operational environmental conditions

Conclusion

FEM believes that a mobile crane can be used to lift persons if the additional requirements are fulfilled.

As an example of an application for lifting of persons, Events in the Sky (E.I.T.S.) / Fungroup (owners of "Dinner in the Sky" platforms) has used this guidance by engaging with FEM and ESTA to analyse the process of using mobile cranes for "Dinner in the Sky".

It is believed that it is possible that "Dinner in the Sky" could achieve compliance with the Machinery Directive and other relevant regulations once further assessed by third party.

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