Readers Letters

Dear Sir,

In response to the outrigger feature that you carried in your October issue, the members of the Temporary Works Forum have agreed the following response.

The Temporary Works Forum (TWF) is an industry group established to provide commentary, advice and guidance on all matters relating to temporary works. It is open to all.

The TWF agrees that there are too many accidents due to inadequate outrigger pad foundations for crane outriggers, however we do not agree with all the conclusions contained within the feature and suggest an alternative method where each part of the lift is dealt with by a person competent to deal with the relevant issues.

A crane lift is planned by the Appointed Person who has training and experience in the use of cranes. The short amount of training, in the Appointed Person (BS7121) Safe use of Cranes Course, for outrigger foundations is inadequate and in some respects inaccurate. Many APs leave the training course confused about the difference between load and pressure. Consequently the design of the outrigger foundation and selection of a factor of safety is best left to a competent engineer. The Appointed Person is required to supply an accurate outrigger load (in tonnes) to the engineer designing the foundation. This is best determined from crane manufacturer's charts or software (Licon, Cranimax etc). The so called '75%' rule or '100% rules' are not rules at all; they are just approximations which can be significantly misleading and should not be used. Any crane supplier has a duty to supply the user with information to safely use the crane and that includes an accurate outrigger load. Where a specific lift has been planned this needs to be the outrigger load for the relevant configuration and total load lifted. Where a crane is supplied to a site for general duties, the load should be the maximum possible for the crane for any configuration and load lifted.

The bearing capacity of ground is not a fixed figure; it varies according to the size and shape of the outrigger foundation. This is more complicated for layered ground which is usually the case on construction sites. It is also influenced by what the ground is or contains; loosely filled trenches and buried drainage are particularly hazardous. It is best if the engineer designing the outrigger foundation is given the accurate load on the outrigger then determines the size of the pad foundation required to carry that load and designs, and selects a foundation of sufficient strength and stiffness to spread the load. The site team will need to verify that the ground conditions assumed by the design do exist in practice.

The system used by the piling industry where the piling contractor provides the main/principal contactor with the load from the piling rig then the main/principal contractor is required to get a platform designed and installed for that rig has merits. The piling contractor will not start work until the main/principal contractor has signed to say that the platform has been designed to carry the loads from the piling rig. e strongly suggest that APs should not be able to use their judgement on the matter of pad foundations. In all cases the foundation should be designed by a competent engineer. The crane supplier has a duty to provide his workforce with a safe place of work and part of this requirement is a satisfactory outrigger foundation for the crane. Where the crane is to be used on small sites or is hired by a private individual then it might be necessary for the crane supplier to employ an engineer to design the foundation.

Yours Sincerely,

Paul Markham

On behalf of the members of the Temporary Works Forum

Proposed method for safe use of cranes

Appointed Person (AP) inspects Job, prepares outline Lift Plan and calculates outrigger point load (in TONNES) using Software or Chart from Crane Supplier.

Suitable software includes: Licon, Cranimax or Spreadsheet from the Crane Supplier.

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Contractor Arranges for foundation design -
a. Size of foundation
b. Spreaders of suitable strength and stiffness

Design by a Competent Engineer.

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AP completes lift plan incorporatingfoundation/ spreader requirements

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Contractor/Crane Supplier to liaise and arrange for load spreaders to be on site

Could be timbers, load spreaders by site, alimats or steel pads from the crane supplier, as determined by the Competent Engineer.

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Crane and load spreading equipment to site.
Before crane sets up main/principal contractor to sign permit to lift

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