BYMARO FATAL INCIDENT OVERVIEW- TANGIER MOROCCO PROJECT

06 July 2018

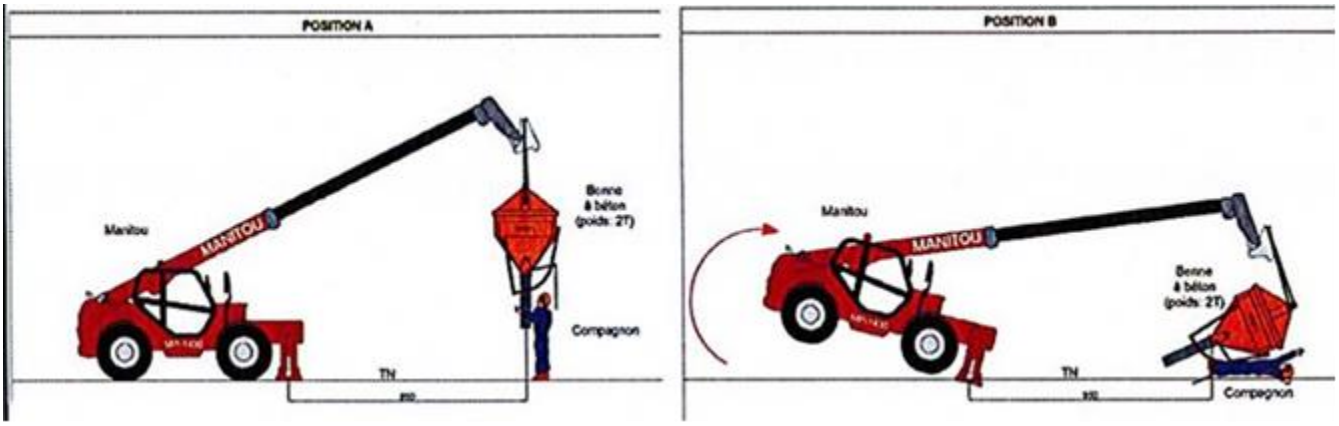
Circumstances:

- A 1000l concrete skip (half full of concrete) was being lifted using a telescopic handler. At the location where the skip was to be emptied, the back wheels of the telehandler rose up, causing the skip to go down. The victim could not avoid being crushed by the skip.

Analysis:

- The concrete skip weighed 2t; and the boom had been extended until that load was 8.50 meters from the front outriggers of the telehandler. According to the manufacturer's notice, this was far beyond the maximum distance authorised for such a load.
- The telehandler is equipped with a safety device (load moment indicators), that gives warning of approaching overload. It should have stopped the extension of the boom, once the maximum distance reached with this load. It appears that this safety device has been switched off by the operator.
- The team in charge was as follows:
  - The telehandler operator (> 20 years of experience, qualified)
  - A foreman and the victim, both on the ground.

The victim was standing behind the skip, so the operator could not see him properly.



Causes:

- **No preparation** had been carried out for this lifting operation:
  - The positioning of the telehandler and the checking of the maximum distance authorised in relation with the load were left up to the workers.
  - This is confirmed by additional findings, not related to the accident: the load was lifted using chain slings, that were poorly suspended at the extremity of the boom.
    As for telehandlers, lifting operations necessitate the use of dedicated accessories, with proper lifting point. In the case we have to transport the lifted loads from a location to another, dedicated accessories must ensure that the load won't go swinging (standard concrete skip is not suitable in this case).

- **Weak safety culture** from the operator, who breached a basic safety rule, in switching off the load limit device of the telehandler. In the morning, a near miss had occurred when the same operator had unloaded two pallets at the same time, causing the upper one to overturn. No stop work directive had been issued at that moment, which would have been necessary to understand what had happened. This reveals a **weak safety culture within the team**, beyond the operator himself.
- **No supervision** was in place: as for any lifting operation, a signaller should have been part of the team in charge.

Lessons to learn:

- Lifting Plans and Lifting Organisation to be implemented:
  - **Lifting operations are to be designed (Lifting Plan),** whether throughout method studies, or for simple cases (such as this one) throughout a preparation carried out by a site engineer. This design should take into account the lifting equipment, the manufacturer's recommendation (capacities, accessories to be used..), and clear instructions should be given to the lifting team.
  - **Each site should implement a lifting organisation**, with lifting teams independent from the production teams. Trained signallers on the ground should be part of these lifting teams, to guide the operators and to prevent workers around from being in hazardous areas.
- **Access of the operators to the load limit device to be limited**, by protecting this device with a closed box whose key is given to the lifting manager.
- **Safety culture and safety leadership to be strengthened**, by the use of Stop & Go notifications by production teams themselves whenever necessary.

A video safety alert will be issued to illustrate this accident, for a better sharing of lessons to learn.

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