IMCA Safety Flash 06/04

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1 Heave Compensation Software Anomaly

Keywords: Lifting

A member has reported the following information relating to an incident which occurred on one of its vessels fitted with a Huisman crane, which is considered important for all cranes fitted with heave compensation systems.

During deployment of a work basket to the seabed, the crane whip line unexpectedly paid out twenty metres of wire. This resulted in the work basket and some crane wire landing on the seabed in an uncontrolled manner. At the time of the incident, the crane was operating in heave compensation mode.

Investigations into the incident have highlighted the following situation:

- During active heave compensation operations, most of the winch speed capacity is used to maintain the hook at a constant level in relation to the seabed. If the crane operator chooses to raise or lower the hook whilst operating in this mode and in rough sea conditions, it is possible that the winch might not provide enough speed to maintain the new level position, resulting in an unexpected and unwanted movement.

In order to rectify this situation, the following software modifications were carried out to the active heave compensation system:

- The available hoisting or lowering speed of the winch by means of the joystick control, whilst in active heave compensation mode was reduced. This modification ensures that the active heave compensation system has more available winch speed than the operator;
- The second modification disables joystick control once a set deviation between the theoretical and actual positions of the crane hook is met. Therefore, in rough sea conditions the winch will not follow joystick commands until it has caught up with the heave compensation requirements.

The company wishes to bring this to the attention of all crane operators' onboard vessels to ensure that they are aware of such potential failure situations.