

## Chain Block failure during Lifting Operations

Revision:1.00

Document No: IW-HSQE-SA-12

Approved By: Claire Lyons

### 1. What Happened?

A recent Dangerous Occurrence – where a block and tackle failed during a lifting operation, resulted in the pump being lifted falling 300mm to the ground. This incident highlights the serious risk posed by lifting operations.

Damage to the chain block (The Yale 360) would suggest that it had previously been operated incorrectly. Damage caused to the guide rail would indicate lifting was done at an angle (sometimes referred to as fleeting, cross hauling) putting strain on the upper guide rail eventually causing damage as seen in Fig 1. When the caretaker went to lower the pump using the guide chain – the load bearing chain slipped and went into freefall.



Fig 1 Exposed Incorrectly positioned Chain Guide & damaged guide rail

The operation, maintenance & parts manual for the Yale 360 chain block provides

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additional safety instructions for use and in this guide Yale specifies that this chain block can not lift at an angle. See Fig 2 below

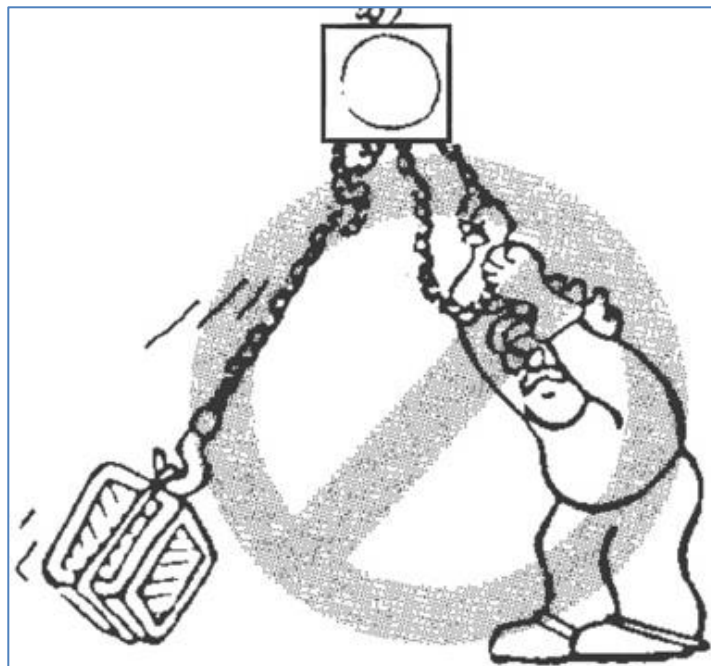


Fig 2 Yale 360 safety instructions: Do not pull at an angle.

## 2. Immediate Actions

The chain block was removed from use and the incident was investigated. It found that the chain block being used only allowed for the load to be lifted on the vertical.

## 3. Further Actions

The following controls should be adopted for all lifting operations with chain blocks.

- Fleeting, cross hauling or shifting a load with a single hoist operating at an angle should only be carried out with lifting equipment that has full technical

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and test data to certify these blocks for lifting off the vertical and must not exceed the angle specified.

- The SWL of the chain block used should never exceed the SWL of the davit, trolley or other equipment to which the chain block is being attached. (For example, a 1000kg chain block attached to a 500kg davit, even if the weight of the load is less than 500kg).
- The load chain must not be used as a sling, chain blocks should never be used for towing and loads should never be lifted with the point of the hook.
- Pre-use checks must be completed on all equipment prior to use.
- Only lifting equipment that has received its statutory (in-date) inspections to be used. Tags and/or certs are to be checked prior to use.
- Block and tackles are to be stored appropriately:
- If a chain block is out of use for some time, the brake should be checked to ensure it operates correctly before the chain block is reused.
- If a block needs more than ordinary effort to operate it, then it is likely to be defective or overloaded
- WH Scott (IW Statutory Inspection Provider) to carry out all necessary statutory inspections on hand chain hoists. Additional checks have been implemented as part of the statutory inspection process.

## 4. Further Information

For further information on this safety alert please contact [hsqe@water.ie](mailto:hsqe@water.ie)

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### 5. Distribution list

Internal		
Asset Operations <input checked="" type="checkbox"/>	Asset Delivery <input checked="" type="checkbox"/>	Asset Strategy <input type="checkbox"/>
Asset Management <input type="checkbox"/>	All IW staff <input type="checkbox"/>	
Other Please Specify _____		

External		
Local Authority <input checked="" type="checkbox"/>	DBO <input checked="" type="checkbox"/>	Capital Contracts <input checked="" type="checkbox"/>
Relevant Framework Contractors <input checked="" type="checkbox"/>	Mech and Elec Framework Contractors	
Other Please Specify _____		