

LOADLOC® Block Arrestor

An Advanced Crane
Security System



UNALLOY-IWRC

www.unalloy-iwrc.com



Introduction

- **Key Customer Issues**
- **LOADLOC Block Arrestor Development**
- **Installation & Use**
- **Reporting & Follow-up**
- **LOADLOC Block Arrestor Improves Safety**



Key Customer Issues

➤ Failure to Disconnect

- After transport
- Moving the boom to improve vision during transport
- Moving the boom to avoid obstructions during transport

➤ Lack of Warning

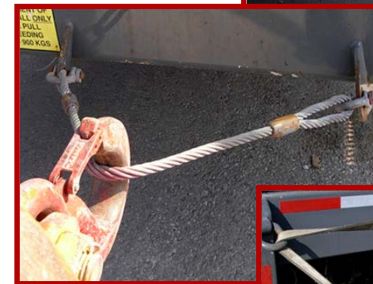
- Traditional restraint assemblies fail without obvious signs of overloading or warning
- The operators vision of the block restraint can be obscured

• Hazardous Condition

- There is serious risk to personnel in the vicinity should a restraint fail

• Liabilities & Equipment Cost

- Damage to the crane & near by equipment can be significant
- Associated liabilities



Key Customer Issues

➤ Crane Customer Incident

- Determined that a corrective action was needed to prevent a future incident
- Wrote a safe work practice & distributed a safety alert
- Decided this was not sufficient and a new control device was needed

➤ Unalloy-IWRC Selected as Development Partner

- Customer provided crane expertise & field testing
- Unalloy-IWRC provided rigging expertise, manufacturing & a controlled testing environment
- A project objective, concepts & plan where developed



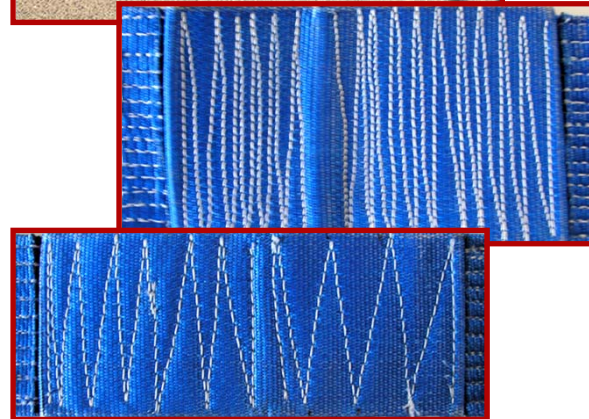
LBA Development

➤ A New Solution Needed

- Reaction time to stop crane movement
- Audible, visual & physical warning
- Block restraint & control should the device deploy
- Forgiveness (elasticity)
- Too strong crane damage could occur
- Too weak would not deliver desired restraint

➤ Product Development

- LBA 6 developed for main block use
- 6" Nylon with reinforced eyes chosen for coefficient of stretch & MBL
- Dual tear away cross stitch design for 30% and 45% of capacity (not greater than 50% of MBL)
- Fold length identified to limited travel
- LBA 4 developed for auxiliary / whip line & lower yield so it deploys first when used with LBA 6



LBA Development

- **Design Test Bed Verification**
 - Defined final stitch/fold pattern & tear away capacity
 - Verification of audible traits
- **Field Testing**
 - Validated deployment methods
 - Determined viability of visual & audible features with operators
 - Ensured the level of block control was maintained during deployment
- **Product Differentiation**
 - Color, warning & instruction system designed to easily differentiate from lifting slings



LOADLOC® Block Arrestor

➤ Visual Warning

- 3 stage warning can be seen by the operator (Visual stretch, stage 1 & stage 2 tear away)
- Specially engineered & tested stitch pattern ensures consistent yield
- Damage makes it clear incorrect loading has occurred

• Audible Warning

- Audible stage 1 & stage 2 tear away can be heard by the operator

• Identification

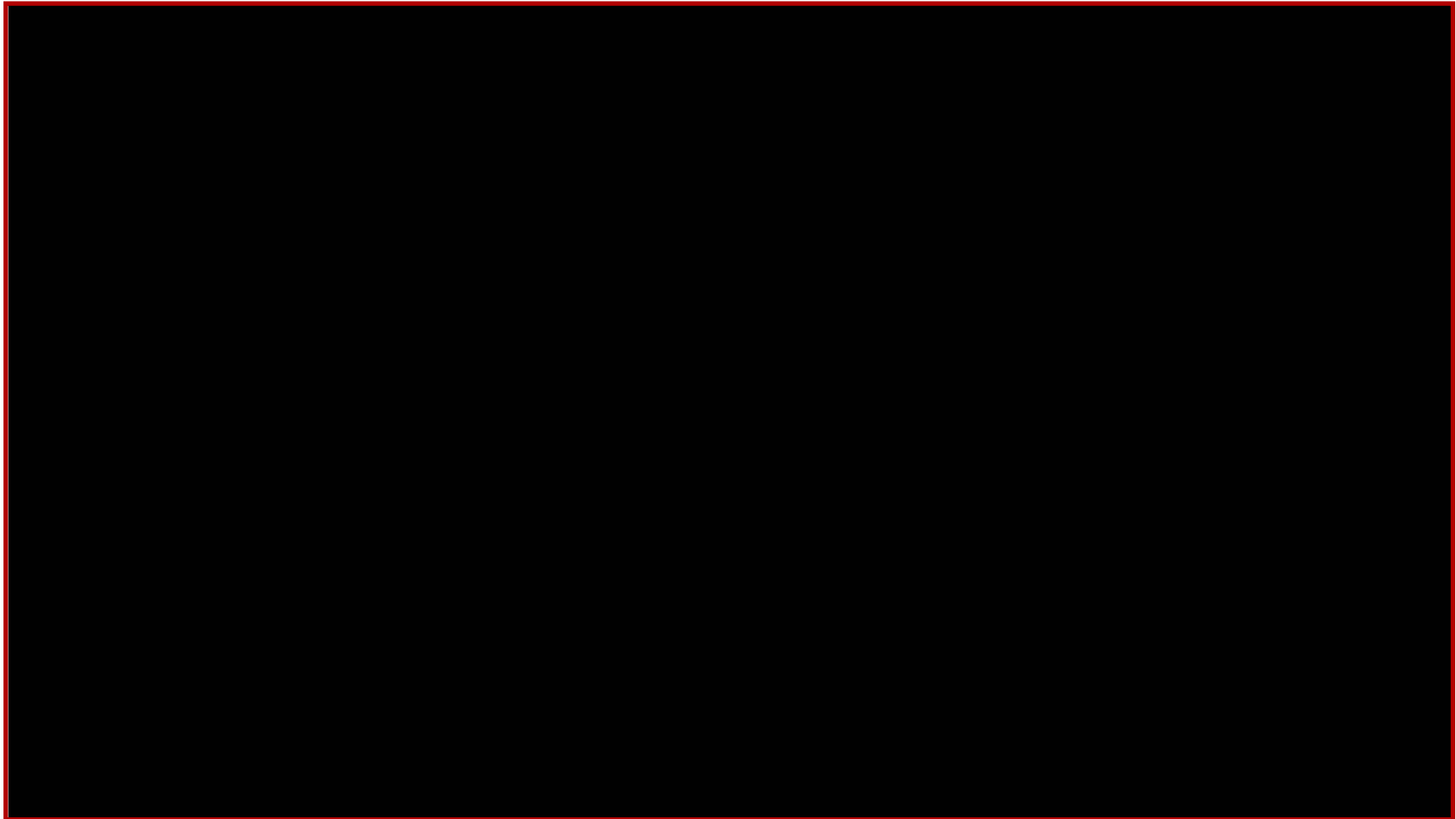
- The blue color, special warning & inspection labels reduce confusion with lifting slings

• Application Specific

- Main – LBA 6 15,000 lb stage 1 tear away
- Aux – LBA 4 6,000 lb stage 1 tear away
- Plans for boom truck version



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Installation & Use

➤ Instruction Document

- Instruction form included with shipments
- Suggest keeping them in the crane log book

➤ Installation

- Visually inspect before each use
- Small eye & 12 ton or greater shackle secured to the crane
- Large eye designed to rest comfortably in the crane block hook
- No twists in the eye or sling
- Tension carefully & maintain slackness in the line as overloading will trigger a warning
- Do not rely on the LMI as it is only accurate when a load is freely suspended
- When a warning is observed the device can no longer be used & must be permanently removed
- When not in use remove from the crane hook & store in a suitable dry crane location



LOADLOC®
BLOCK ARRESTOR
(Patent Pending)

visual. audible. security.

MANUFACTURED EXCLUSIVELY BY **Unalloy-IWRC**

INSTRUCTIONS

This device is designed to give an audible, visual and physical warning that the crane boom, hoist ropes, and block are under significant load. When the warning is established **STOP!** Take immediate action to release the tension on the boom and hoist ropes.

This device can not be used for lifting or towing! It is to be used only as a crane block tie back for transportation.

Installation Instructions – Read Carefully and Follow

Warning: If installed incorrectly the device will not achieve its intended purpose of overload warning.

1. **Visual inspections must be completed prior to each use.** Sizing that has been torn or any of the sewing yarns on the body that are loose, is an indication that an overload has occurred. Once over loaded the device must be permanently removed from service.
2. **Secure the small eye of the device to the carrier of the crane with a shackle rated at 12 ton or greater.** Tighten the pin into the body of the shackle or secure the nut to the pin of the shackle and insert cotter pin.
3. **Place the large eye of the device in the hook of the block,** and ensure the latch is in the closed position.
4. The device must be flat with no twists or turns.
5. Tension the device carefully. The device should not be overly tightened. Overloading the device will cause it to give a warning. **When a warning is observed the device can no longer be used and must be permanently removed.**
6. After transport release the tension slowly and allow the device to go slack. Remove the device from the crane block hook and attach back to the carrier.

Care and Maintenance

The device must be kept clean, this will allow for easy and thorough inspection. **Do not pressure wash this device.**

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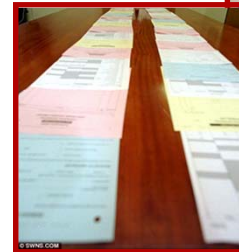
Follow-up & Reporting

➤ If Damage is Identified

- Incorrect loading has occurred
- It is recommended to record as a near miss incident for investigation
- Replace the LOADLOC Block Arrestor immediately
- These devices are designed as consumable items not for reuse

➤ Reporting & Training

- If occurrences are recorded corrective actions can be implemented
- Investigation of occurrences can identify opportunities for follow-up instruction & training



LOADLOC® Block Arrestor Improves Safety

- Staged & controlled warning can be the difference between a near miss & an incident
- Controlled block movement prevents severe damage to equipment
- Specialized color & labeling reduce confusion
- Reduces costs associated with lost time injuries & liabilities

Visual . Audible . Security



Patent Pending

