

DRAGLINE JEWELLERY PIN REMOVAL TOOL

*A project to engineer out the risks of personnel
injury during pin removal during Bucket
maintenance .*

PROJECT STATEMENT

To engineer out the safety hazards associated with Dragline Bucket and Jewellery maintenance. To improve the efficiency of maintenance of the Dragline Bucket & Jewellery.

The Project Team will consist of the following personnel:-

David Cox Maintenance Supervisor Draglines - Drills

Lou Peterson (GET) Manufacturer & Supplier of Ground Engaging tools

George Venz Rigger Dragline Maintenance Crew

Fred Korn Machinist

The major aims of this project is to eliminate are far as is possible the following

1. Swinging of sledge hammers
2. Personnel holding Drifts & Tools hit by sledge hammers
3. Manual handling of Jewellery pins
4. Use of " DONGER " to drive rope sockets.

EVALUATING OPTIONS

Studying Accident Taxonomy and evaluating causes of the accidents.

A study of all reported accidents in the Dragline area revealed that the accidents and incidents could be sub divided into four major groups, these being :-

- 1) Accidents involving access (falls, slipping , etc.)
- 2) Accidents involving cable handling.
- 3) Accidents involving bucket jewellery.
- 4) Accidents involving striking with hammers etc.

There are numerous other categories involved but the four listed accounted for 80% of the accidents or incidents.

Tarong have other projects in place to address the access problems on the Dragline and have successfully implemented projects to address many of the cable handling problems.

This left the bucket jewellery and striking accidents / incidents as our major focus.

The project team reviewed the work procedures involved in bucket jewellery work and the reported accidents and incidents in this area. The conclusion reached was if the personnel could be located at a greater distance from the objects being struck and if manual handling of the jewellery could be minimised then there was the potential to greatly reduce the risk or personnel being injured during this activity.

To this end the team then reviewed options for mechanically handling and positioning jewellery pins. The team also reviewed options for mechanically removing and relocating the pins and rope sockets. It became apparent that a mobile unit that could perform both functions would be the most efficient method of carrying out this work. The team worked closely with the Equipment Supplier and Hydraulics companies to develop and test various configurations before finalising the equipment specifications for the maintenance tool.

The equipment was tested in early May of this year and the pin removing and refitting functions are performing to expectations. We have had to fine tune the pin handling mechanism and this is now functioning to an acceptable level.

1 MANUAL HANDLING REDUCING RISK OF PERSONNEL INJURY

Dave Cox

DRAGLINE BUCKETS & JEWELLERY

2 Background

- ◆ Manual handling of Dragline bucket G.E.T. and Jewellery components was causing a disproportionate number of back and puncture wound injuries.
- ◆ The scope of the project was to develop a safe and effective method for handling dragline pin replacement and for handling Jewellery components.

3 Lost Time Frequency Index Back Injuries

4 Key Issues

- ◆ Achieve Worlds Best Practice in the area of manual handling around Dragline buckets.
- ◆ Provide a safer working environment for dragline crews.
- ◆ Reduction in LTFI for manual handling around Dragline buckets.
- ◆ Improve effectiveness of pin and socket replacement on buckets.

5 Handling of Bucket Components

- ◆ Manual handling of bucket jewellery
- ◆ Manual handling of rope sockets
- ◆ Removing pins from adaptors
- ◆ Removing and replacing pins from jewellery

6 Overall Strategy

- ◆ Formation of team to review options.
- ◆ Development of procedures.
- ◆ Present options to Tarongs Management.
- ◆ Capital Expenditure and purchase of equipment approved ???/??/??.
- ◆ Equipment delivered ???/??/??
- ◆ Training on new equipment.

7 Status

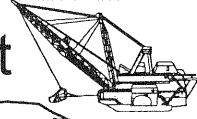
- ◆ A tool has been developed to allow a safe means of removing and replacing adaptor pins.
- ◆ The same tool can be used to replace jewellery pins and to remove rope socket wedges.
- ◆ Industrial problems over who can operate new equipment - these should have been resolved before equipment was delivered.
- ◆ Very few problems with the hardware.

8 Next Steps

- ◆ Summarize past actions taken

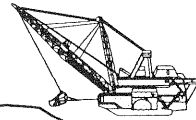
- ◆ Specify future actions
- ◆ Define any requirements you have of your audience
- ◆ Suggest a time and place for the next checkpoint

Handling of Bucket Components

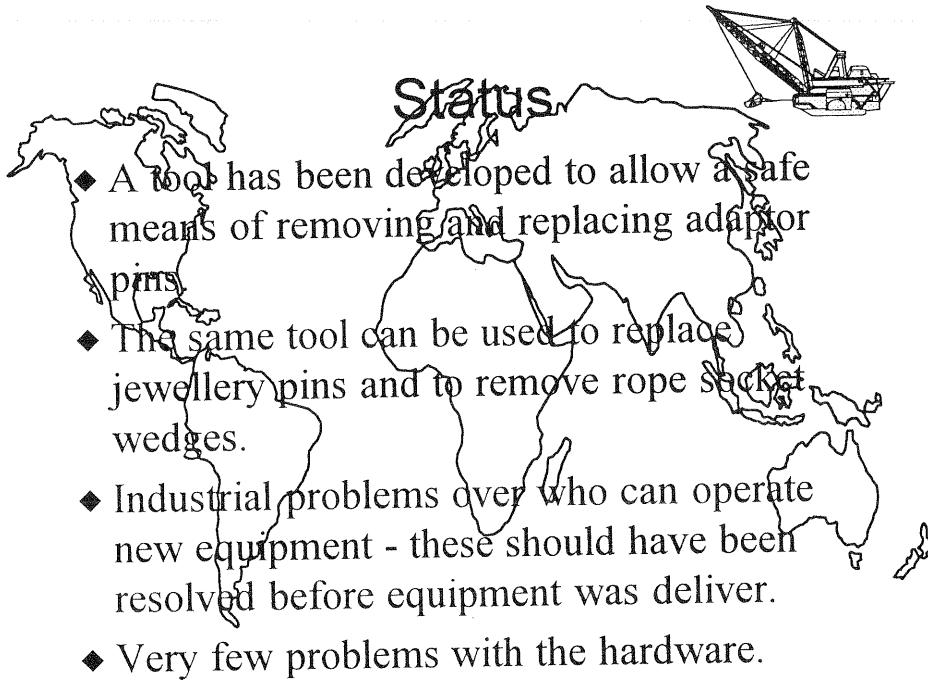


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Overall Strategy

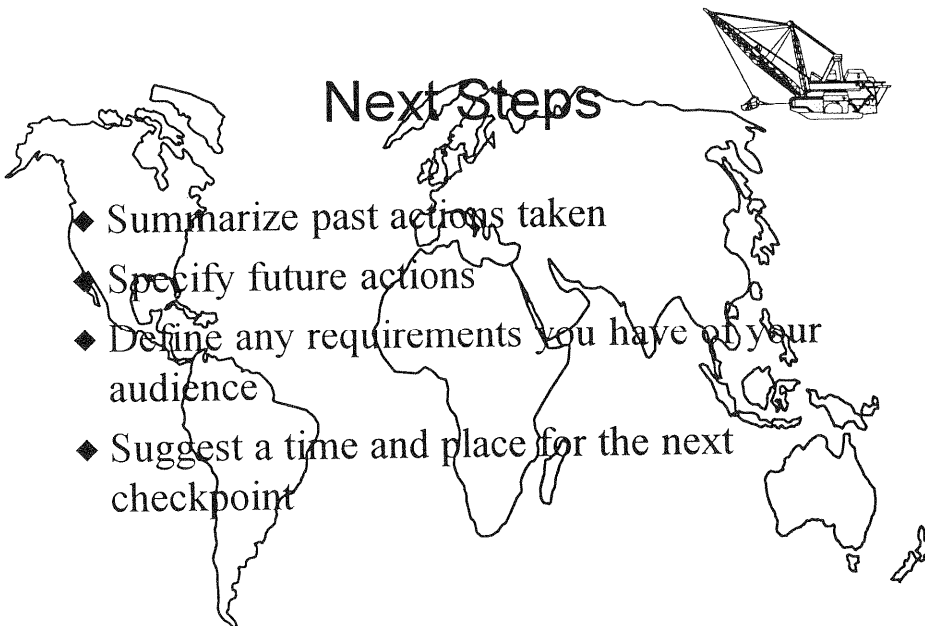


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A world map with a crane icon in the top right corner. The crane is a large industrial machine with a long boom and a hook, positioned over the Pacific Ocean.

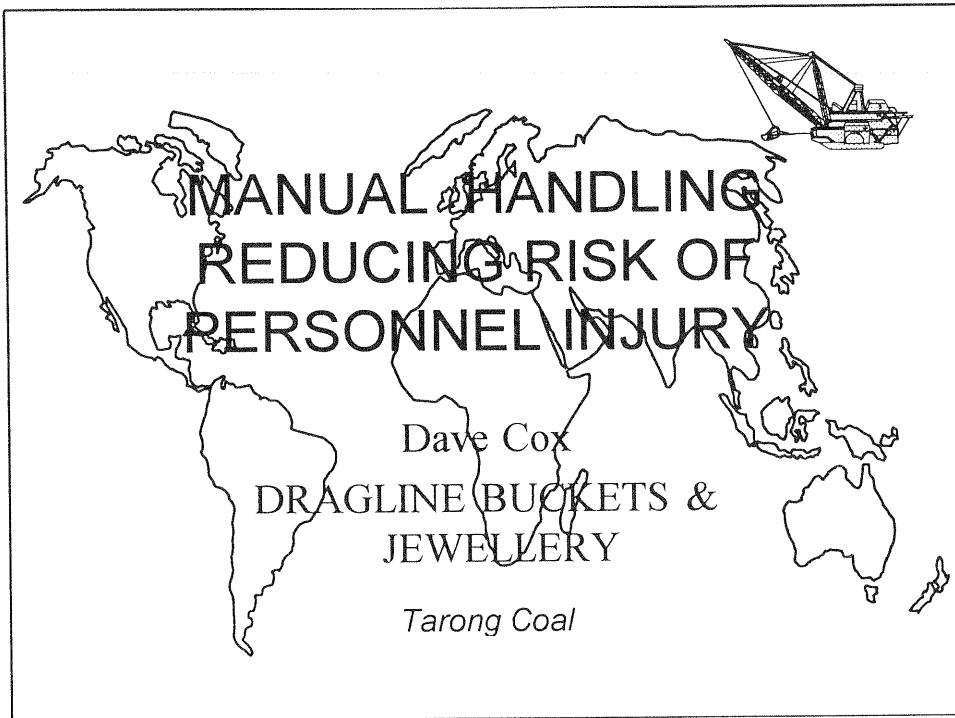
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Next Steps

- ◆ Summarize past actions taken
- ◆ Specify future actions
- ◆ Define any requirements you have of your audience
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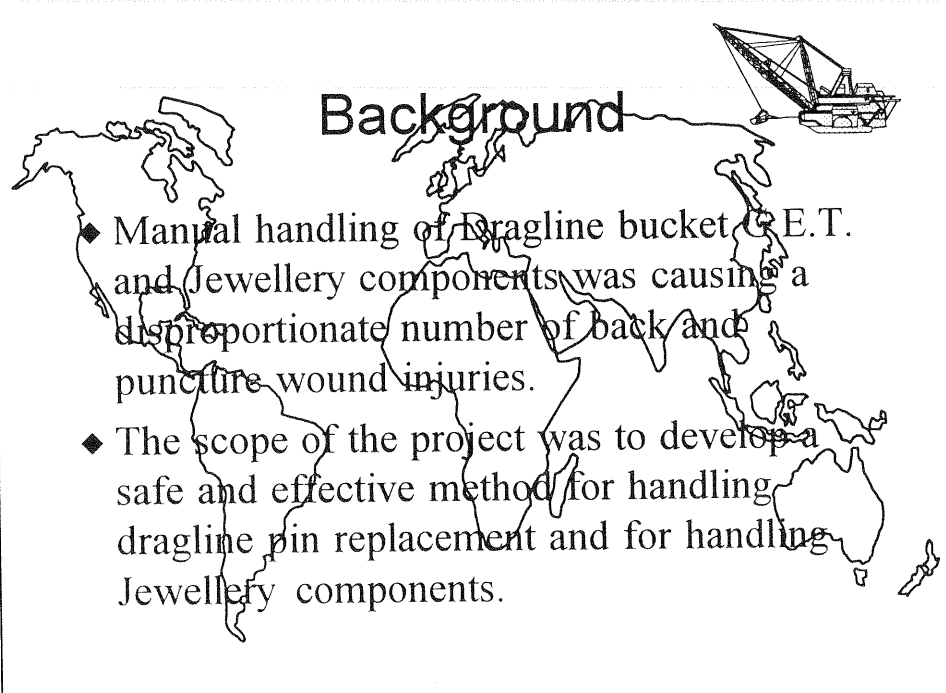


Introduction

Dave Cox Maintenance Supervisor Draglines Tarong Coal

Background on Dave Cox--How long in current role previous experience

Aims of project

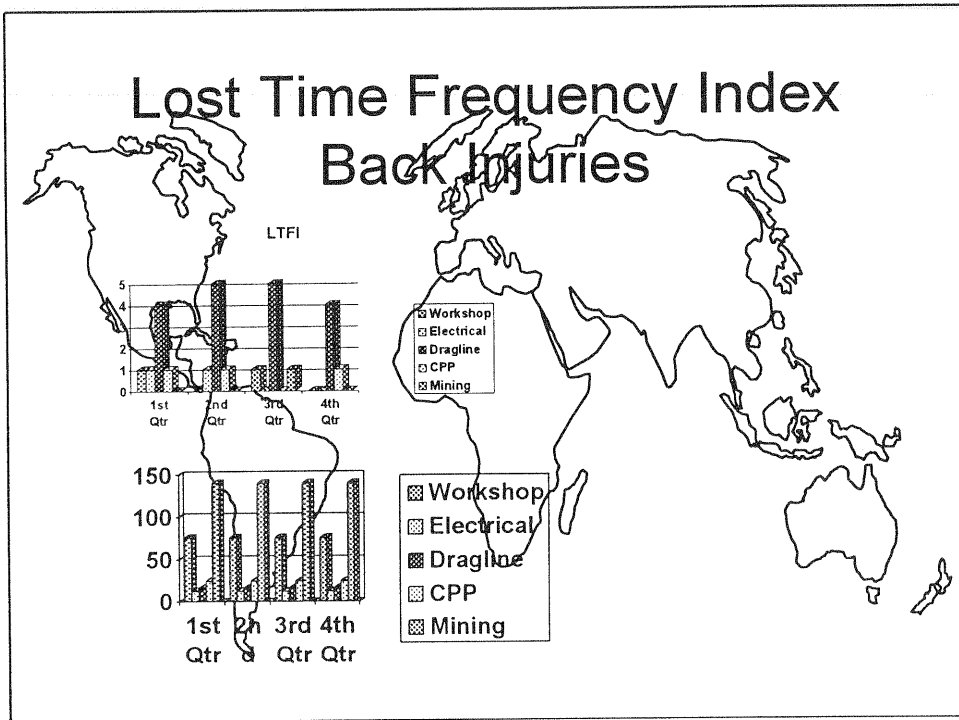


Background

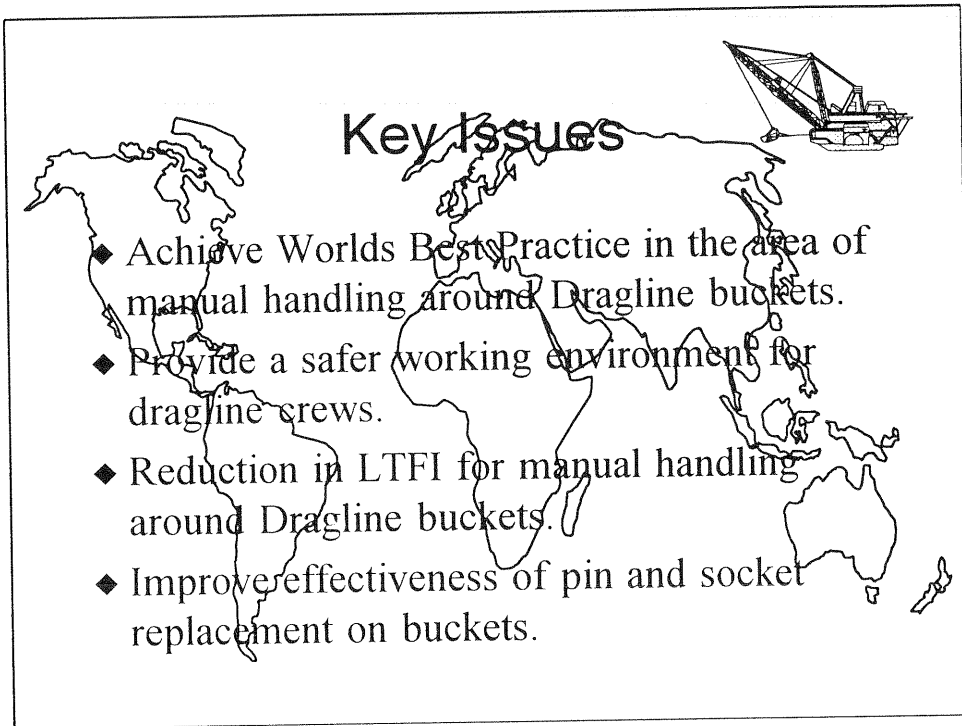
- ◆ Manual handling of Dragline bucket (D.E.T.) and Jewellery components was causing a disproportionate number of back and puncture wound injuries.
- ◆ The scope of the project was to develop a safe and effective method for handling dragline pin replacement and for handling Jewellery components.

Reference to large percentage of accidents being at bucket & manual handling jewellery.

Define the projects objectives.



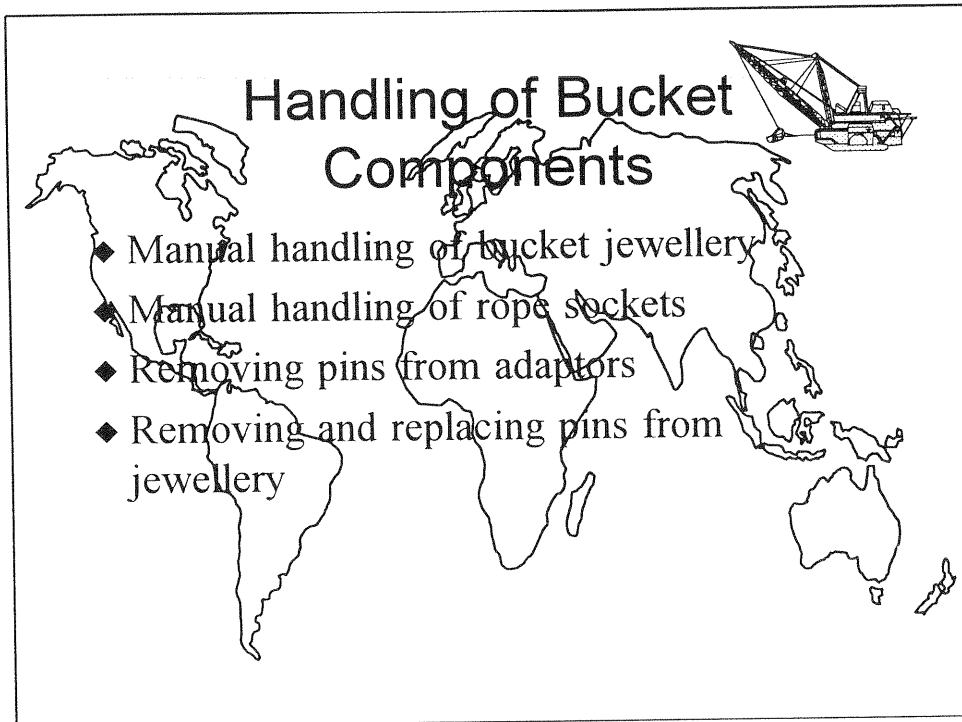
Discuss disproportionate level of Lost Time Accidents related to total numbers involved in maintenance and operation of the Dragline.



Key Issues

- ◆ Achieve Worlds Best Practice in the area of manual handling around Dragline buckets.
- ◆ Provide a safer working environment for dragline crews.
- ◆ Reduction in LTFI for manual handling around Dragline buckets.
- ◆ Improve effectiveness of pin and socket replacement on buckets.

Discuss expected benefits of the project
emphasise the safety improvements in terms of personnel safety
productivity gains are secondary to the safety

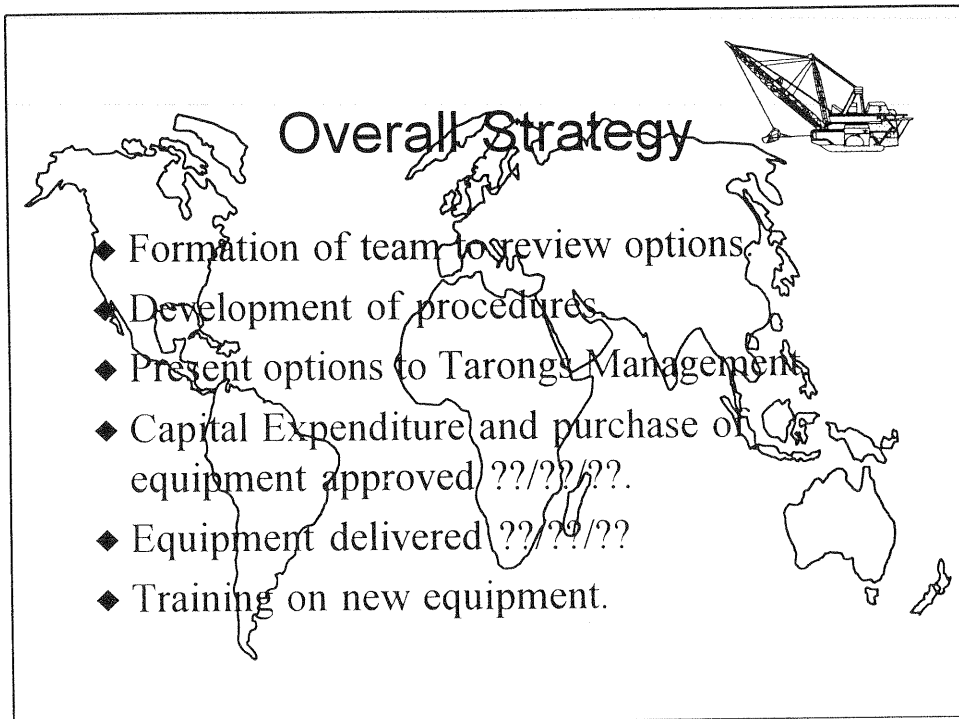


Talk to each point re the types of injuries caused during these process's.

Back strains

Stricking

Flying metal fragements



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Discuss the process that was taken to get the project initiated and to get the project through to completion.

