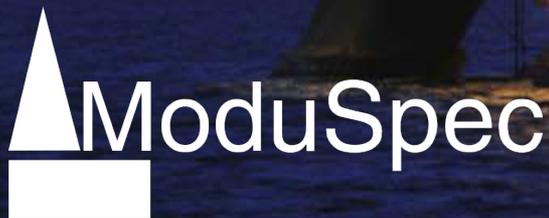


DROPS Forum

Perth, Australia - 3 November 2011

Innovative services aimed at People, Systems and Equipment



SCANDPOWER
Risk Management



Overview

- Who is ModuSpec
- Definition of a dropped object
- Our experience with dropped objects
- Our perspective
- Taking dropped object prevention outside the derrick
- Actual pictures taken during surveys
- Automation



ModuSpec Snapshot

- 25 years of providing drilling asset reliability
- 8 offices worldwide
- Perform more than 500 rig inspections per year
- Onshore, offshore, conventional, alternative drilling
- Many of these encompass a dropped objects inspection



What is a dropped object?



Any object that falls from its previous position under its own weight

Most frequent contributors according to surveys

Based on interviews with our Surveyors and a review of our reports the following are the most frequent reoccurring issues:

- Corrosion
- Safety slings not installed or installed incorrectly
- Redundant brackets/clamps/cables/junk
- Missing/loose bolts
- Wrong type of shackles (2 part) or shackles not fitted with safety pins
- Missing toe boards or none installed
- Self locking/Secondary retention nuts not used
- Escape device not properly installed

Dropped objects hot spots

- Top-drive assembly
- Grating
- Racking arm
- Blocks and sheaves
- Lighting
- Cameras and brackets
- Moonpool areas – including bridge cranes
- Deck cranes
- Lifts, pre-equipment checks and rigging
- Working above or aloft

Our experience with dropped objects - offshore



Our experience with dropped objects - offshore



Our experience with dropped objects - offshore



Our experience with dropped objects - offshore



Our experience with dropped objects - offshore

Home-made welded eye. Home/rig-made eyes together with spliced drill line used as a hang-off line for the traveling block is a combination destined for total **disaster**.

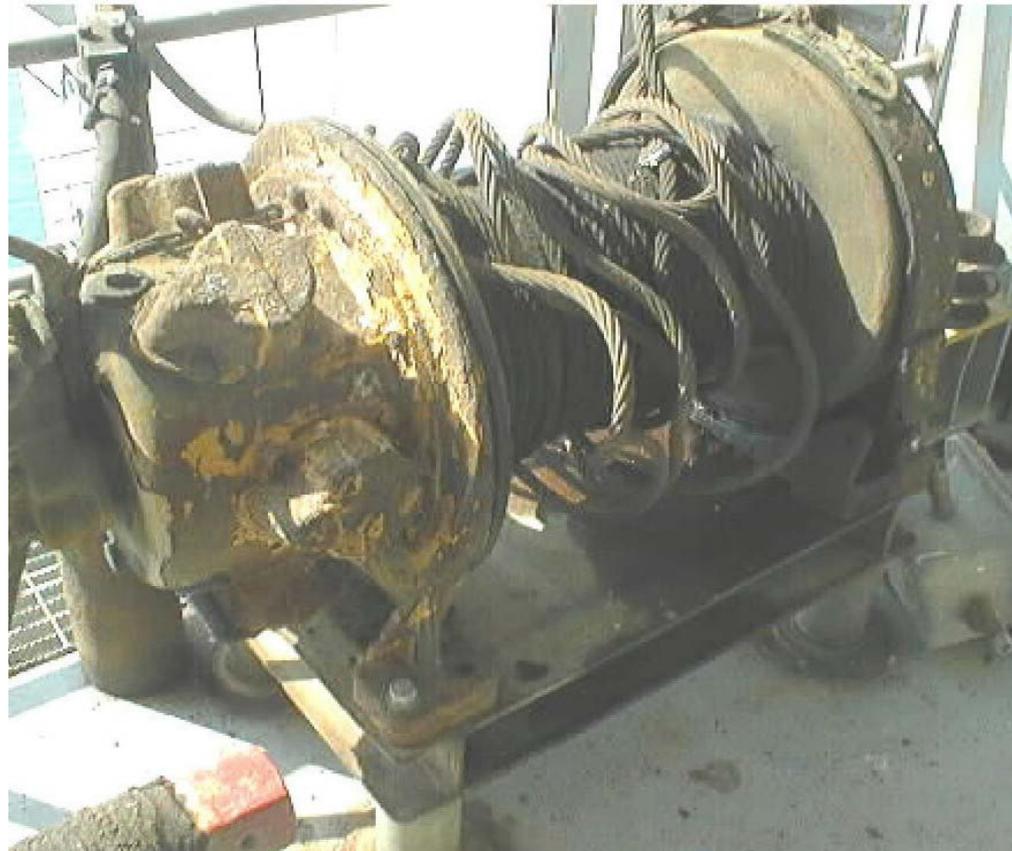


Our experience with dropped objects - offshore



Our experience with dropped objects - offshore

This air winch is in very poor condition. Essential safety features are missing such as the cage, spooling device and foundation bolts. The wire is also in deplorable condition.



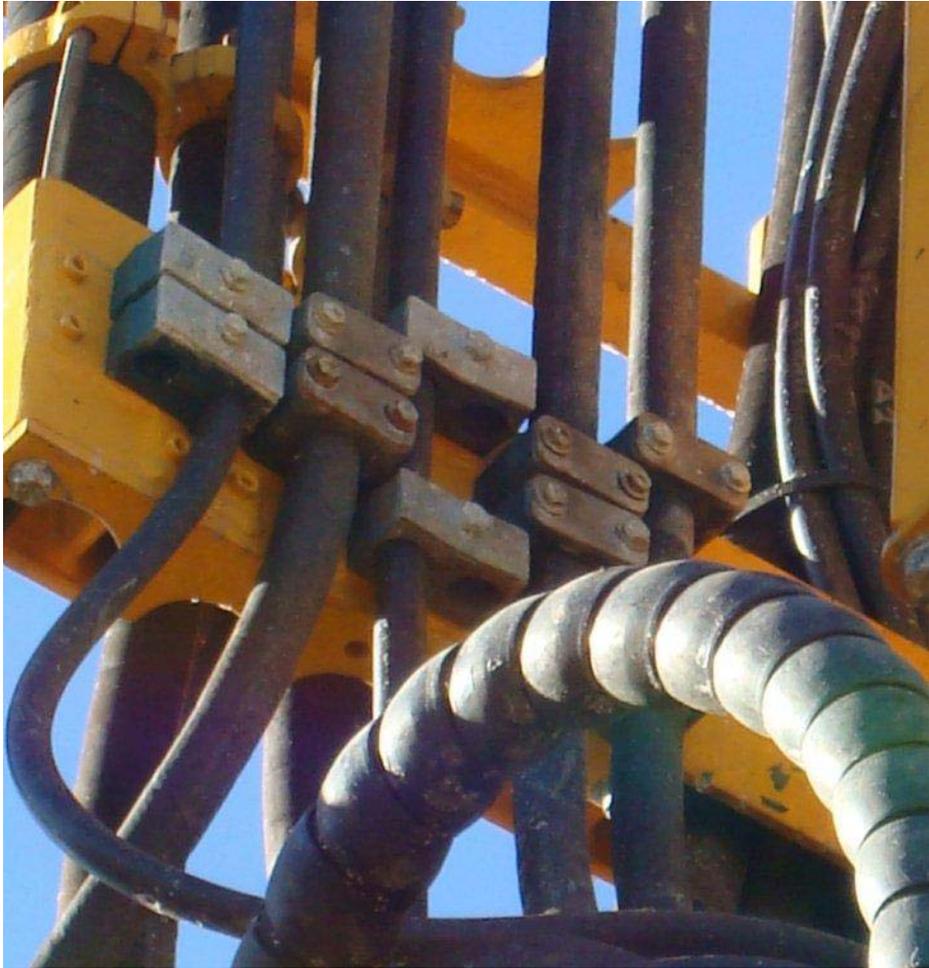
Our experience with dropped objects - offshore



Our experience with dropped objects - onshore



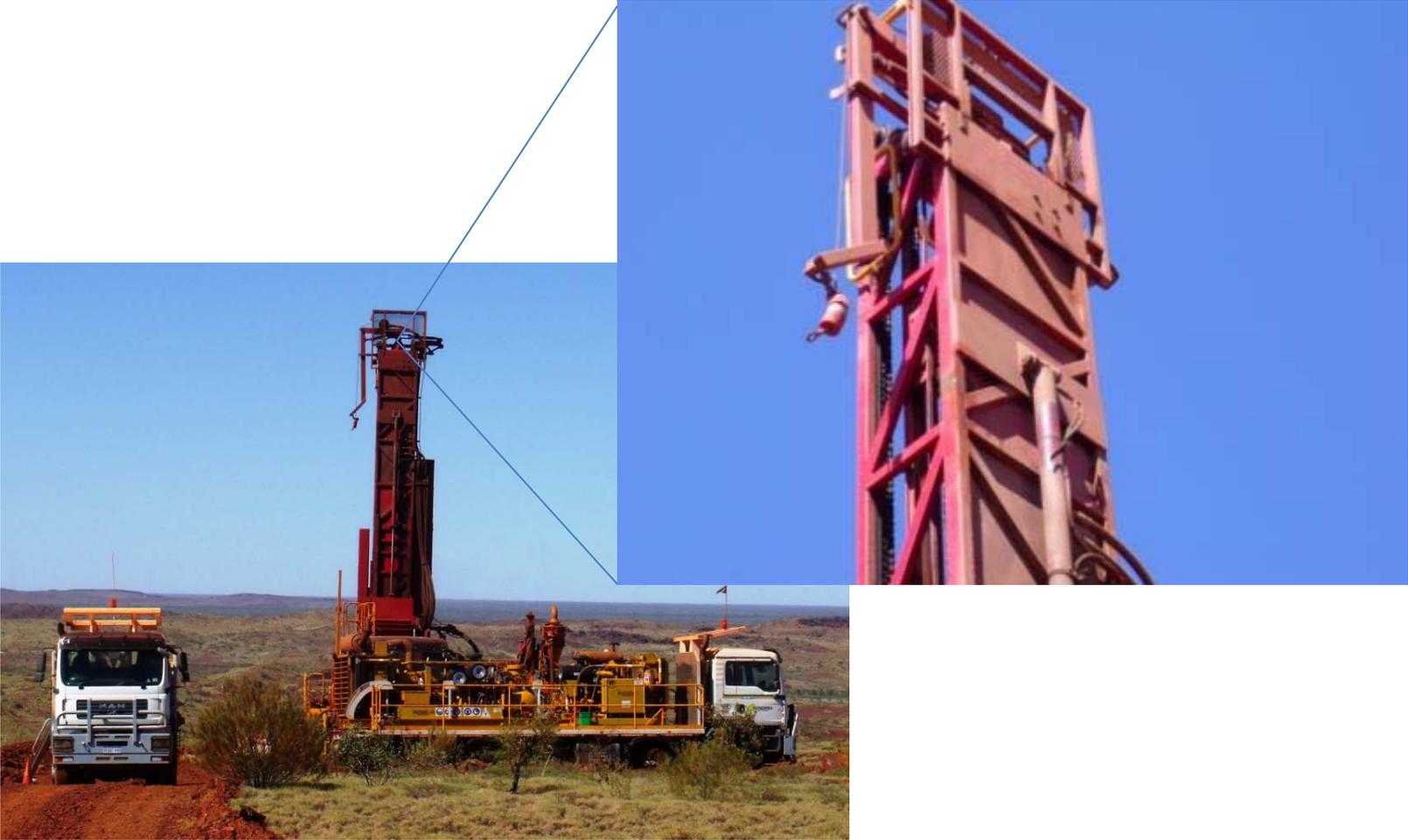
Our experience with dropped objects - CSG



Our experience with dropped objects - Geothermal



Our experience with dropped objects - Mining



Mud pump work area bench



Secure bulk air lines



Bag and taped electrical plug and socket



Tools to be used for working at heights

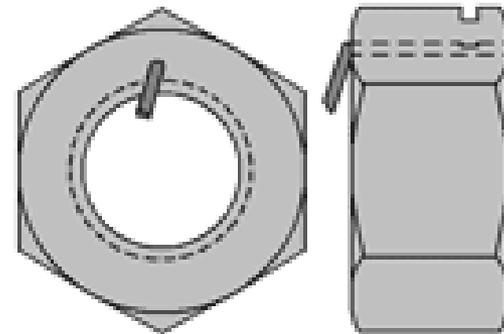


Secure all the gas bottles



It's not rocket science

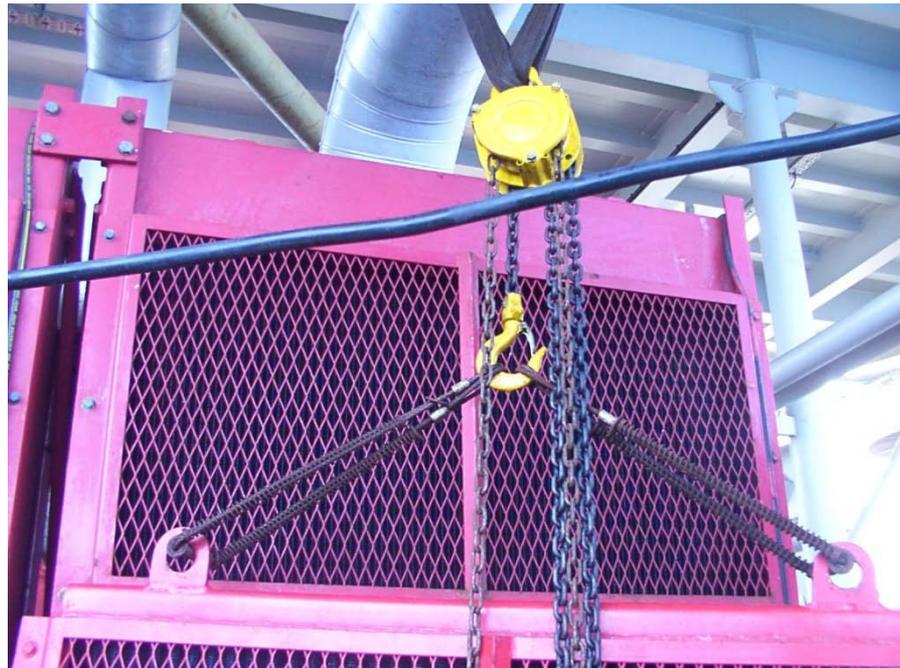
- Introduce a programme of nut and bolt replacement in high vibration areas
- Castellated nut needs a split pin
- ANCO nut used on derrick structures



Our perspective

Questions we must ask:

- What happens when something changes MOC
- Who does the regular inspection
- Who decides how to make safe



Our perspective

- Management of automated systems and manual overriding.
- Management of 3rd Party equipment used in overhead positions and/or 3rd party lifting equipment.
- Training and competency requirements for operators of equipment, inspection methods and implementation of the safety management system
- Third party auditing requirements
- Continuous improvement system



Our perspective

Elimination of dropped objects requires

- Methodology and implementation
- Time and commitment from EVERYONE
- May require operation suspension at some points
- Senior Management support
- Training



DECIDE to reduce the risk

Don't leave it to fall on your mate, report it or remove it.

Every day is a school day, look for advice if unsure.

Can we do it or rig it any better?

If it does not look right, it probably isn't.

Does it have to be up there at all?

Each time you are up high, do a dropped object inspection.

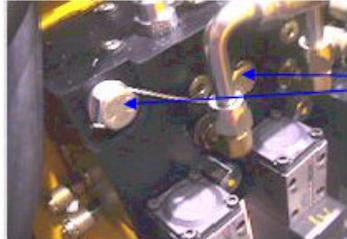
Automation and how we are affected



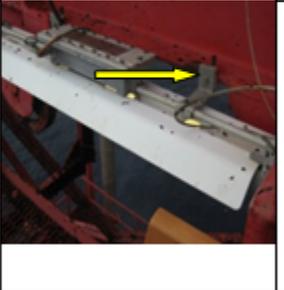
- More gear in the derrick
- Zone management
- No-Go areas
- Multi tasking
- Faster running times wanted
- More equipment for the driller to watch

Varco Picture Book

Picture Book Index/Checklist for TDS-10

	Picture No.	Description and Varco Drawing Data	Correct Picture?		Action/Hardware/Instructions Required
			Yes	No	
	31	Accumulator Valve Guard Bolt Retention (Typical): Accumulator is received from vendor with regular 3/8" screws. Replace existing screws with 3/8" Drilled Head Screws by 3/4" long and safetywire (see hardware callout).	X		(2) 50006-06-C5D <i>Drilled Head Screw</i> (2) 50906-C <i>Regular Lockwasher</i> (A,R) Z6001 <i>Lockwire .051 ?</i>
	32	TDS-10 Manifold Mounting Bolt Retention See "TDS-10SA (UL & CSA) Electrical Package" Dwg. 123995, sheet 5, zone A/B, BOM items 88, 106 & 78.	X		(3) 50010-36-C5D <i>Drilled Head Screw</i> (3) 50910-C <i>Regular Lockwasher</i> (A,R) Z6001 <i>Lockwire .051 ?</i>
	33	Lube Pump Elect. Motor J-Box Cover Retention: See "Hydraulic Pump Assembly" Dwg. 30170946, sheet 1, zone B-C/B, BOM item 11 (as well as 28 & 29) NOTE: Remove and replace existing bolts with the specified Drilled Head Screws using the existing Lockwashers. Lockwire screws in pairs.	X		(4) 50006-10-C5D <i>Drilled Head Screw</i>
	34	J-Box Assembly Mounting Hardware: See "TDS-10SA UL/CSA Electrical Package" Dwg. 123995, sheet 5, zone D/6, BOM items 86, 104 & 77	X		(4) 50005-4-C5D <i>Drilled Head Screw</i> (4) 50905-C <i>Regular Lockwasher</i> (A,R) Z6000.9 <i>Lockwire .047 ?</i>

BHP picture book

AREA 1 CROWN AND WATERTABLE	Photograph	Inspection Criteria	Primary & Secondary Retention
Crown, Cable Trays		<p>There are no cable trays installed at the crown assembly of the rig.</p> <p>Check the condition of all cable fasteners at the crown.</p>	<p>PRIMARY Bolt and nut fastenings.</p> <p>SECONDARY Nuts to incorporate a locking device</p>
Crown, Light Fittings and Spot lights		<p>Check the lights and spotlights are securely fitted and all bolts are in a good condition and tight.</p> <p>The secondary retention stainless steel sling must be secured back to a fixed point which is not part of the light fixture.</p>	<p>PRIMARY Securing brackets, bolts and nuts. OEM supporting bracket, bolts and nuts.</p> <p>SECONDARY Nuts to incorporate a locking device. Safety sling between light fixture and rig structure. Locking nuts, locking tab washers and safety tie wire.</p>
Crown, Anemometer		<p>Check the mounting pole for the anemometer is secured and free of corrosion. <u>Inspect the base for corrosion.</u> Check method of securing pole to derrick. If clamped with brackets and bolts, check tightness and whether properly locked. If welded check welds for cracks</p> <p>Check that attachment of anemometer to the pole is secure.</p>	<p>PRIMARY As supplied by OEM - Secure brackets, bolts, nuts and hinges</p> <p>SECONDARY Safety slings. Nuts to incorporate a locking device. Safety sling between pole and rig structure. Locking nuts</p>

What do we want to achieve?



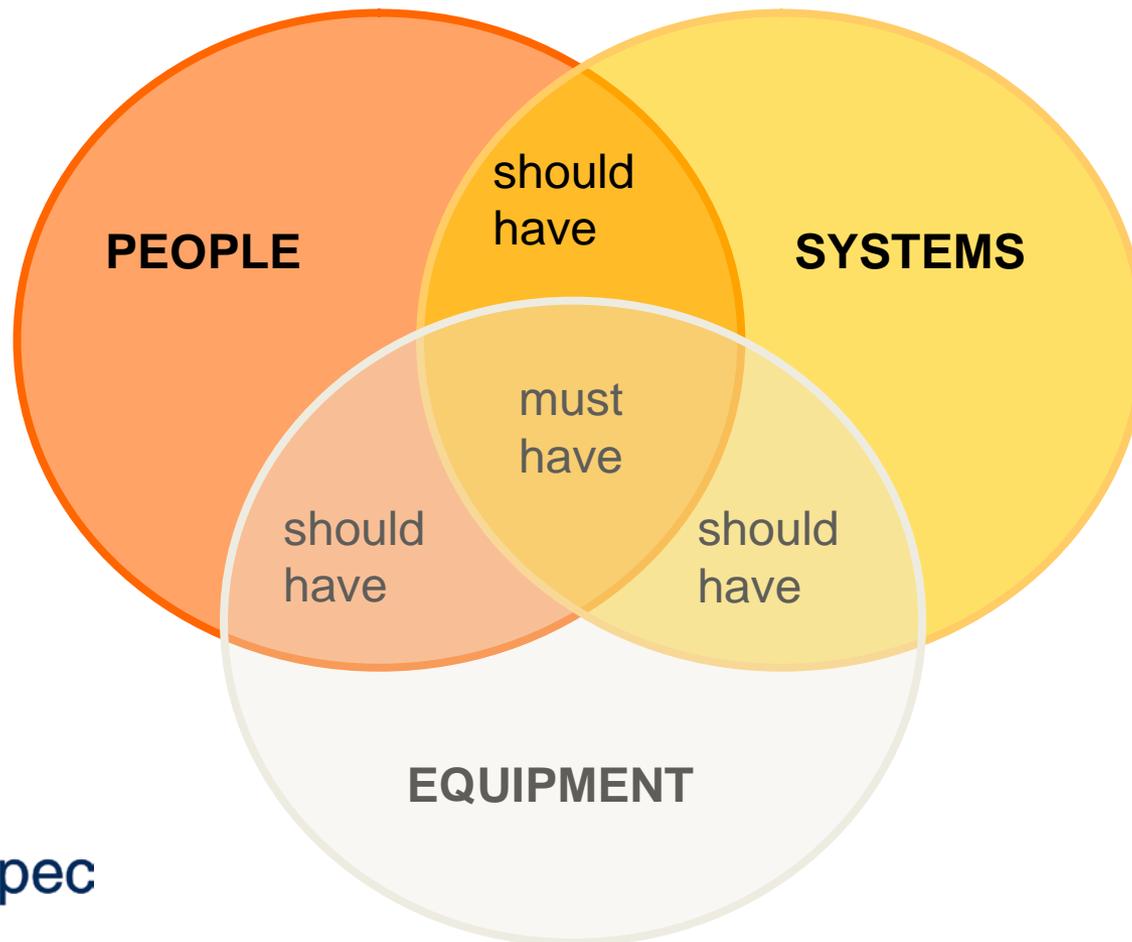
- A safer workplace
- Zero accidents
- Nil dropped objects
- Good leadership
- PMS and Auditable the PMS
- Consistency
- Sticking to the plan
- Doing the right thing even when no-one is looking

How are we going to do it?

- Effective Dropped Objects Management Systems/Strategy
- Effective maintenance systems to correct potential dropped objects asap
- Post jarring/Top Hole checklist
- OEM manuals and communications
- Work @ Height Tool kits and Derrick register
- Risk assessments of different areas – to implement the correct management strategies



Operational Asset Integrity: A Balancing Act between People, Systems and Equipment



Don't forget there are dropped objects outside of the Derrick

- Oops!



Takeaways

- Training and competency requirements key to preventing dropped objects
- Prevention of dropped objects requires time and commitment from EVERYONE
- Automation introduces more equipment and greater risks
- Doing the right thing even when no-one is looking
- People, systems and equipment – a balancing act
- Don't forget there are dropped objects outside of the Derrick
- If you don't use it, maintain it, or inspect it – then remove it as it may just become a dropped object

To find out more contact:

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ModuSpec Australia, NZ & PNG

(Easy) Questions?

