

October 2000

**"PUWER Guidance for Construction"  
– presented by Brian Dunckley.  
HSEQ Adviser, Balfour Beatty  
Specialist Holdings Ltd.**

Brian started his presentation by outlining the contrasting activities undertaken by the four operating companies within the Specialist Holdings Division. All of these companies operate their own Safety Management System and have produced specific Safety Procedures.

As an illustration of the absolute nature of **Regulation 5, Maintenance**, in PUWER 98, Brian quoted the decision of the Court of Appeal in the case of **Stark v. The Post Office (29<sup>th</sup> March 2000)**, concerning a front brake on a bicycle which broke and injured the rider. Regulation 5 says:-

**“Every Employer shall ensure that Work Equipment is maintained in an efficient state, in efficient working order and in good repair.”**

The key words are shall ensure, because there is no reference to **“reasonably practicable”** and in general terms this is how the Regulations are worded.

Brian then emphasised that the definition of **Work Equipment** includes anything from a screwdriver to a complete installation like a power station or chemical plant. Crucially the Regulations also apply to equipment used and/or owned by an employee. This latter point means that an employer should inspect those tools which are traditionally bought by craftsmen in the jobbing civil trades and is responsible for ensuring that their tools are maintained satisfactorily – a duty that is habitually brushed to one side.

In developing “Safety Standards” for the Division, Balfour Beatty have looked at:-

- Working at Heights
- Electrical Safety
- Safe use of Work Equipment

These include the need to comply with PUWER 98 and individual categories within “Working at Heights would include:-

- Mast Work Platforms
- Access Scaffolding
- Suspended Cradles
- Hoists

- Tower Scaffolds
- Mobile Elevated Work Platforms

Historically, following incidents and accidents, B-B has developed Procedures for Specific Work Equipment and most of the above equipment has an interface with controls identified in the Construction (Health, Safety and Welfare) Regulations 1996 and LOLER 98. The following equipment has appended control measures:-

- Abrasive Wheels
- Cartridge Tools
- Chain Saws
- Wood Working Equipment
- Hydro Demolition
- Grit Blasting
- Air Lines.

They are also mandated on sub-contractors and this is where sometimes there is a trouble with sub-contractors because of non-compliance with PUWER:-

- Hydro-Demolition – Hairline crack in gun
- Grit Blasting – No “Deadman” at the Nozzle
- Air Lines – Mandrill built hose and stay-safe double lock bayonet fittings/stay-safe clamps

It is important that all equipment, whether it is **hired or owned** must be well maintained and that proof of this is available **before use**. Key elements to prove compliance are:-

- The Manufacturer’s hand book
- Maintenance regimes should be known and operated correctly.
- Monitoring of the systems should be carried out with electronic tagging and call back reminders issued.

Regulation 6, Inspection requires that inspection regimes should be known. These will vary, as some are prescribed by legislation (egg. Scaffolding), some are governed by manufacturer’s recommendations and some are dictated by a mixture of both. The HSE has said that:-

**“If equipment or parts of equipment will deteriorate which can lead to significant injury or worse, and cannot be controlled by operator checks, an inspection regime is to organised using Competent Persons.”**

This leads us to attempt to define **“Competent person”** as one who has:-

**“...a combination of Practical and Theoretical Knowledge and actual experience to ensure, that he is able to discover defects and identify the effect they are likely to have.”**

**Regulation 7, Specific Risks** requires employers to ensure that they identify equipment with special risks and to specify controls for use and repair, by

identifying specific persons for the task. Examples of these are Abrasive wheels and woodworking equipment. Brian suggested that employers should consider issuing ‘Competency’ cards which would identify on site authorised users of hazardous equipment.

**Regulation 8, Information and Instruction** requires employers to ensure that persons shall have adequate health and safety information and, where appropriate, written instructions on how to operate equipment. He went on to quote how a piling rig overturned on the Touchwood site earlier this year. The driver had **not** been instructed on safe use of the rig **when travelling**. Following this, the backs of all CTA Cards are endorsed with a list of piling rigs the person is allowed to operate.

**Regulation 9, Training**, requires that not only should operators should be trained, but that their Supervisors should also be trained to have an adequate understanding of the work Equipment in their work area, under their control. Brian added that anyone responsible for Rail-mounted machinery on Railtrack has to hold a specific PICOM Competency certificate as a **“Person In Charge Of Machinery”**. This is a much-needed extension to the training requirements, as it means that supervisors will be much more able to detect ‘at-a-glance’ when operators are contravening safe working methods. It will also lead to a much better system of competent and trained workforce.

**Regulation 11, Dangerous Parts of Machinery and Regulation 12, Protection against Specific Hazards** are in general terms and repeat older, known controls.

**Regulations 14 to 17** deal with controls, including stop controls, emergency stops and the positioning and marking of controls. Controls should be clearly visible and identifiable – is this checked adequately when tools are received from hire companies? He quoted a recent case where a sub-contractor arrived on site to carry out grit blasting and there was no Deadman’s Handle on the nozzle!

**Regulation 19, Isolation from sources of energy** is increasingly important as the range and number of power tools grows. We are aware to a degree that electrical tools need to be isolated before they are maintained or repaired, but what about the isolation of batching plant, compressed air tools or Mobile Elevating Work Platforms (MEWPs) which must be isolated at ground level?

**Regulation 20, Stability**, is important for both **fixed** or **mobile** equipment. Machinery used in a fixed position must be anchored adequately. Using mobile equipment can significantly reduce its **“stability moment”**. It is important to always adhere to the Manufacturer’s Instructions. If the **Overturning** moment exceeds the **Stability** moment it **will** overturn. In this

context it is important, for instance, to remember that **Aluminium Alloy** towers are lighter than **Steel** towers and the **Base –to-Height** stability ratio is also different. Always refer to the Manufacturer’s handbook and the PASMA Code.

**Regulation 22, Maintenance Operations** requires work to be done, “so far as is reasonably practicable” while the equipment is shut down. In other cases work should not cause a risk OR persons must be protected. This could mean, for example, that a wheel on a large dumper truck might have to be changed by two men. Brian quoted an incident where a wheel fell on a single operative and trapped him for 30 minutes. It is essential that safe systems of work should be monitored to ensure that they are operated effectively.

**Regulation 24, Warnings** requires the fitting, where appropriate, of Flashing Lights, Audible Alarms and deals with the ambiguity of the message they convey. They should not conflict with background noise or adjacent lighting systems.

**Part III of the Regulations** deals with the special case of Mobile Work Equipment. **Regulation 25, Employees carried on Mobile Work Equipment**, requires it to be suitable to carry persons and incorporates features to reduce risks to safety, including those from wheels or tracks. There must be Falling Object Protective Structures (FOPS) and restraining systems to prevent impact or crushing injuries. Balfour-Beatty policy, for instance is to place control for MEWPS in baskets, which rules out the use of telescopic fork lift trucks, unless adapted. All baskets will have anchorage for harnesses whose use is mandatory.

**Regulation 26** calls roll over protection where there is a risk that mobile equipment can turn over on to its side or end, or turn over completely (i.e. through 180° or more). Because of the variety of work, the Balfour Beatty risk assessment opted for fitting ROPS to all mobile plant. ROPS have to be assessed in relation to the use of restraint systems, in case they conflict.

**Regulation 27**, addresses the ROPS requirements for Fork Lift Trucks in detail, where those with masts are not considered to be capable of turning over. Variable reach FLT’s, however, can overturn and need ROPS.

**Regulation 28, Self-propelled Work Equipment**, covers:-

- Unauthorised Use
- Brakes
- Emergency controls
- Visibility
- Adequate Lighting
- Fire risk

The key points that apply to this regulation are “Unauthorised Use” and “Visibility”. Balfour Beatty have adopted a policy that no equipment will be left idling, or with keys left in, whilst it is unattended. Visibility on Reversing

Vehicles has, where appropriate, necessitated the fitting of extra mirrors or CCTV cameras. It is also significant that HSE have stopped lorries, on site off-road, for using inadequate lighting. Finally, in cases where materials are being carried or towed, Fire Fighting Equipment must be carried.

Brian concluded by saying that he had attempted to show what the Regulations required and how Balfour Beatty had attempted to comply. There was a general belief, however, that it was very difficult to conform all the time, because they are so detailed.

## *Members' Questions*

**Mark Hoare** asked how it was possible to get co-operation to wear seatbelts. Brian replied that it was most difficult on small equipment and relied on persistent monitoring by supervisors.

**Harry Jakeman** enquired as to the policy on labour only contracts and Brian confirmed that PUWER applied to their tools as well.

**David Callaby** asked about the checks on competency and the use of Cards. Brian said that they had just started with sub-contractors. **Andy Chappell** commented that this was one of the WWT main objectives. Harry Jakeman commented that CITB cards were global and wondered if they applied to a specific type of plant. **Roy Gill** expanded on this subject by adding that Scaffolding certification only applied to general types and not system scaffolds. **David Hughes** added similar comments about FLT training and said that the certificates were for a site, with no text.

**Chris Fantom** asked for a definition of rollover risk and Brian confirmed that it was where there was a risk of turning more than 180°.

**Mark Hoare** then asked if purchase of a new machine ensured compliance with PUWER. Brian said this could not be assumed and it was important to check the equipment specification against the Supply of Machinery (Safety) Regulations 1992, as amended.

**Christopher Peck of W.S. Atkins Defence Services** asked for a definition of Supervisor competence. Brian replied that it was very much dependent on his ability to make safe where procedures were being contravened and persons were being exposed to unacceptable risks.

As there were no more questions, the Chairman asked the members to thank Brian in the normal way.