

May 1999

Presentation on "Provision and Use of Work Equipment Regulations 1998" (PUWER 98) - by Nick Hitchcott, HSE Engineering NIG, Birmingham.

Nick started his talk with an overview of the new PUWER and LOLER regulations, focusing on the significant changes and practical the practical implications for other legislation which was sector specific. He said that:-

- They follow on from previous changes in 1992 'the six pack'.
- Changes brought about by the amending directive to the use of work equipment Directive (AUWED)(95/63/EC)
Amends some aspects of the existing PUWER requirements.
Introduces provisions for lining operations (LOLER)
Provides for inspection requirements as appropriate
- Continuing harmonisation of law throughout Europe to have the same minimum requirements for the selection and use of work equipment
- New law made under the Health and Safety at Work Etc Act 1974 (including ACOP material)
- Applies to ALL places of Work
- Other sector specific requirements to be repealed or revoked (see schedule 4)
- Guidance material provided
- Approved Codes of Practice
PUWER 98
LOLER 98
Power presses
Woodworking machines

PUWER 98 came into Force on 5th December 1998 and covered:-

- New work Equipment
First provided for on/after 5th December will need to meet all the requirements.
- Existing work equipment
Regulations 1 - 24 & 31-39 apply from 5th December (essentially same as before) Regs 25-30 until 5th Dec 2002
- Second-Hand work equipment
All Regulations apply if provided for use after 5th December
- Hired or leased work equipment
As per second hand equipment

Nick reminded the meeting that there are overlapping/linked requirements between Management Regulations (Reg3), PUWER & LOLER
Principally RISK ASSESSMENT
Common hardware requirements

He emphasised that the hardware requirements for LOLER were based on PUWER. The machinery supply issues were already written with the PUWER II in mind and basically new equipment should satisfy the new Regs. It was important for users to check the maker's manuals, however, and quoted the case of a £200k, 3metre CNC machine with totally inadequate guarding. Another 5 metre machine from the same maker had extensive guarding, with guard-locking, interlocks and setting facilities!

The Supply Law (Product Directives) were:-

- Supply of Machinery (Safety) Regulations 1992 (as amended)- CE Marking
- Previously amended to take account of the changes to 'user' law
Brand new equipment should meet the hardware requirements of PUWER 98
(and via instruction manual assist user in meeting management requirement)

BUT YOU STILL NEED TO CHECK

The Woodworking Machines Regulations have been revoked entirely and the Woodworking NIG had produced specific ACOP and Guidance:-

- Specific retrospective requirements
Change over to limited cutter projection tooling (chip thickness limitation tooling), eg on spindle moulders to prevent risks from 'kick back'
Braking on machines where there is a risk from 'Run down-(Stop within 10 secs.)
See woodworking information sheets

The Abrasive Wheels Regulations have also been revoked (see guidance)

Nick emphasised that plant moved from site to site by the same owner was considered to be 'existing equipment' for these purposes. He added that although there was concession for certain 'rollover' fittings in general, there was no exemption if plant was used where there was an obvious, high risk of rollover. In other words, the HSE would enforce "on the basis of risk". **Peter Evans asked** if Inspectors would be looking at risk after 'an incident' and Nick confirmed this.

As far as the main changes were concerned, there were:-

- New requirements concerning mobile work equipment.
- Definitions to include 'Installations'.
- An extension of duty holder to include other groups, eg hirers.

- More detailed guidance and ACOP, eg Reg 7.
- Changes to Reg 10 I (conformity with product directives).
- Minor changes to Reg 18 (control systems).
- New Regs to replace existing power presses Regulations 1965 & 1972

Looking next at the layout of the new regulations, the main areas of interest were:-

- Reg. 1-3 implementation dates. definitions; application & duty holders.
- Regs 4-9 Management duties and 10, conformity with EC requirements.
- Regs 11-24 hardware requirements
- Regs 25 -30 risks from mobile work equipment.
- Regs 31-35 power presses
- Regs 36-39 transitional provisions, repeals and revocations
- Schedules 1-4

ACOP Material dealt with:-

- None for Regs carried forward unchanged from PUWER 92, except 4- 7 & 9 Provision and Use of Work Equipment Regulations 1998 and
- HASAWA. S(2), for risks to pedestrians from movement of mobile work equipment.

Guidance material is carried over from L22 with some amendments, plus some new guidance material on new Regs.

Some important definitions are:-

- '**Installation**' which replaces '**...any assembly of components.**'
- '**Inspection**' - '**visual or more rigorous inspection by a competent person as appropriate**' and '**where appropriate testing**'.

Duties are required of the following:-

- **Those in control of work equipment**
If you provide work equipment you must ensure that it complies with PUWER even if you will have no direct control over how and where it will be used
- **Employees providing their own work equipment**
the employer is responsible for ensuring that equipment complies in all respects.
- **Employees duties**
Employees have no specific duties under PUWER - they are covered by HASWA S7 and other employee specific Regs

There is additional ACOP material and Guidance on the subject of 'Suitability', which is dealt with from three aspects:-

- Initial integrity

- Where it will be used (environment)
- Purpose for which it will be used (ergonomics).

RISK ASSESSMENT looks at these factors and there are links with other Regulations such as COSHH, Confined spaces, Workplace Regs., EAW Regs etc.

Reg 5 Maintenance is very much paired with Reg 6, Inspection, which is a new requirement.

- Reg 5 prescribes a state to be achieved, but pre-use checks and other inspections are an essential part of this process and are inseparable.
- Reg 6, Inspection, is required where there is a significant risk (could foreseeably result in RIDDOR major injury) dependant on installation conditions and/or there are conditions causing deterioration, or there are exceptional circumstances.

Results of inspections must be kept until the next inspection. the need for this inspection does not inevitably trigger the need for 'in-service' inspections.

Where there are conditions causing deterioration:-

- Reg 6 inspection required if pre-use checks and servicing etc may not reveal defects, deterioration **and**
- These may present a risk to health and safety **and**
- The risk is significant

Equipment that **should** be inspected is:-

- Fairground equipment
- High risk machines
 - Injection moulding machines
 - Hydraulic presses and press brakes
 - Die-casting machines
 - Paper-cutting guillotines
 - Complex automated equipment
 - Integrated production lines
 - Mobile equipment not used on the public highway

Equipment which will **not** need to be inspected is where

- Failure will not lead to a significant risk **or**
- If safety can be guaranteed with appropriate checks and servicing (under Reg 5), eg.
 - Office furniture
 - Hand tools
 - Non powered machinery

Powered machinery eg mechanical hacksaw

Under Reg 7 Specific Risks are addressed in new ACOP material

- Designated persons for the use or maintenance of equipment which is likely to involve specific risks - adequate training must be provided
- Consider hierarchy of controls first - hardware examples in the ACOP
 - Printing machines
 - Dressing/mounting abrasive wheels
 - Manual turning operations (lathe) - use of emery cloth
 - Maintenance and setting of machinery where primary safeguards may be suspended

Nick reminded us that under regulation 9(2), training was required for supervisors and managers, to be

- Methods of use
- Risks
- Precautions

There is also new ACOP material for driver training and chainsaw operators

There is also a requirement to conform with community requirements (Reg 10). Essentially this is the same as before, with wording changed to clarify:-

- You must buy machines which comply with relevant Directives
 - Sector specific guidance available.
 - DTI booklet - Product standards - machinery
 - BS EN 1050 Risk Assessment - Annex 1 (list of hazards)

Regulation 18 requires control systems to be safe, with an additional requirement that:-

- Control systems of work equipment '**..are chosen making due allowances for the failure, faults and constraints expected in the circumstances of use**'.
- Explicit consideration given to suitability for intended application and potential failure modes/hazardous situations that may occur in use

Mobile work Equipment is covered in regulations 25-30 in addition to other requirements of PUWER. The definition of mobile work equipment is:-

- Carries out work while travelling
- Travels between different locations to carry out work
- Normally moves on wheels or tracks etc
- May be self-propelled
- May also incorporate attachments (eg load rotator)
- May also be remote controlled

Regarding Employees carried on work equipment (Reg 25):-

No employee carried unless

- It is suitable
- Incorporate features for reducing ALARP risks to safety, including risks from wheels or tracks

This covers risks of:-

- Falling from the equipment
- Unexpected movement
- Low clearance
- Falling objects
- Operating surfaces

Where Employees are carried there must be adequate risk controls:-

- Properly designed cabs
- Falling object protective structures (FOPS)
- Seating - drivers and passengers
- Restraining systems (type to be decided by risk assessment)
- Means to adjust speed
- Guards and barriers for wheels (to prevent reaching in)
(Note - other dangerous parts covered by Reg 11)

Risks from rolling over are covered in Reg 26 and have caused most controversy.

They must be:-

minimised by

- Stabilising the equipment
- Structure to ensure no more than fall on side 90°
- If more than 90°, structure to give clearance (ROPS)
- Device giving comparable protection [see also 26(4)(b)]

use Restraining systems [Reg 26(2)]

Disapplies Reg 26 for vertical mast FLT's [Reg 26(3)]

Compliance not required if[Reg. 26i4]

- Increases overall risk
- Not reasonably practicable to operate equipment
- Not reasonably practicable to do so on pre 5/12/98 equipment

Overturning of FLT's is covered in Reg 27:-

- FLT's of type referred to in Reg 26(3), which carry an employee, to be adapted or equipped to reduce ALARP risks from over turning
Vertical mast design reduces risk
If risk remains, fit ROPS

- Restraining System (Seat Belts)
Normally required. Not required if substantial structural modifications required on older FLT's (reasonably- PUWER 98)

Self propelled work equipment, whilst in motion, involves a risk to the safe of persons' and must have facilities to:-

- Prevent unauthorised start-up
- Avoid/minimise collision consequences for (two or more) rail mounted work equipment
- For braking and stopping
- Additional emergency braking/stopping where required for safety
- Devices to improve visibility (mirrors etc.
- Lighting for driving at night or in dark places
- Fire fighting equipment to enable escape(eg. tower crane)

For remote controlled (self propelled) work equipment (Reg 29), '**where equipment involves a risk to safety while in motion'** there must be facilities to:-

- Stop automatically once it leaves control range
- Incorporates features to guard against crushing or impact unless other appropriate devices are able to do so

Drive shafts (Reg 30) must have:-

- Means to prevent seizure - shear pins, clutches etc.
- Measures to avoid adverse effect on safety
- Means to prevent damage to shaft when not in use (cradle)

The presentation was interspersed with many questions which nick was able to answer very expertly and it provided a lively interchange.

The chairman concluded the meeting with a vote of thanks to the speaker and the audience responded in the traditional manner.

As there were no further questions, John Humpherson thanked Tim for his very interesting and valuable presentation and display at the front of the hall. He then asked the members to show their appreciation in the traditional way.