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4th AUGUST 1999

PASMA APPROVED TRAINING COURSE

Dear Gareth,

Thank you for the three copies of the revised course notes. The amendments have been carried as requested and therefore your course notes are now approved.

A copy duly stamped and signed is enclosed, the second copy will be handed to Eric Abbey at the next PASMA meeting, which is on the 12th August 1999, for his retention. The third copy is retained by the writer and will be used at the annual audit.

I will also arrange for Eric to forward to you the certificate etc. as soon as possible.

May I take this opportunity to wish you every success with your training courses and if at any time I can be of any assistance, please do not hesitate to contact me and I will help in any way I can.

Best wishes,

Yours sincerely,

ERNIE ELWELL

ITEM NO : 90.030.

cc ERIC ABBEY ✓

Cape

Aluminium Tower Training Course (PASMA)

Stage 1 - Classroom

Before Commencing -

Issue PASMA Booklet (Current issue), copy of my course notes, scrap paper, pens, course agenda, name tags, helmets and gloves - ensure Delegates are wearing correct footwear.

Introduction to P.A.S.M.A, the registered instructor (myself) and the registered sponsoring company (CAPE).

_____

Introduction and Objectives

Why are we here???

_____

To inform you of correct method of erecting/dismantling Towers.

_____

Cover the correct ordering of the Tower, mobile or static, platform height, width and length, also loading capacity.

PASMA CERTIFIED
Signature _____
Date 4-9-99

_____

The main duties of employer/employee.

_____

Ask delegates if they have erected Towers previously - it is not a problem if they have not.

Definition of a 'competent person'. In Construction (H.S & W) Regs 1996 it requires the individual to possess such Training, Technical Knowledge or experience, as may be appropriate having regard to the activity or to be supervised by such a person.

It is not Law to attend this course to allow you to erect a Tower.

Run through the agenda - make everyone at ease with regards to the Test Paper - please don't get anxious - please make notes - the pass mark is 88% (26/30).

Successful delegates will receive a PASMA certificate and competency I.D Card which will be forwarded to your Company.

Explain to them I would like everyone to get involved - please don't think I am picking on you when I ask questions - the Course runs smoother when it is a two-way thing.

To aquaint you with the necessary regulations and hazards you should be aware of:

- *HEALTH & SAFETY AT WORK ACT 1974*
- *CONSTRUCTION (HEALTH, SAFETY AND WELFARE) REGUALTIONS 1996*
- *MANAGEMENT OF HEALTH & SAFETY AT WORK REGULATIONS 1992*
- *PROVISION & USE OF WORK EQUIPMENT REGULATIONS 1992*
- *PERSONAL PROTECTIVE EQUIPMENT AT WORK REGULATIONS 1992*
- *MANUAL HANDLING OPERATIONS REGULATIONS 1992*
- *BS1139 Part 3 1994: HD 1004 1992*
- *BS.EN 1298*
- *HSE GUIDANCE NOTE GS 42 1987*
- *HEALTH & SAFETY IN CONSTRUCTION HS (G) 150*

- *PASMA CODE OF PRACTICE (CURRENTLY 6TH REVISION)*
- *REPORTING OF INJURIES, DISEASES & DANGEROUS OCCURRENCES REGULATIONS 1995 (RIDDOR)*

Delegates must be advised that where the above are in variance the course advises using the highest feature of Safety.

How do we Guarantee Safety with Towers

ASK THEM

- *Look for answers:-*

I am looking for:-

A) Use Erection Guide supplied
- *Do not start without it -*
The Guide/Manual must be from the same supplier as the Tower.

B) Survey the area before erecting/dismantling - what is the major overhead obstacle we should be aware of - power cables.

Check suitability of the Site.

Check the route that the Tower (if mobile) might need to travel over.

C) Check equipment - everything must be in good working order.

All components from the same supplier/manufacturer.

Check quantities against suppliers table on reverse of erection guide.

The duty of care from manufacturer/suppliers.

The Loading Capacity of a Mobile Aluminium Tower - important to refer to Suppliers Manual for maximum design load (MDL) - The MDL will be calculated by the manufacturer to take into account the horizontal forces/pressures as well as vertical loads. You must remember to deduct the self weight of the Tower from the gross MDL, thereby providing load capacity.

the

<u>Statutory Regulations Health/Safety & Welfare Regulations 1996</u>

1) Toe Boards & Guardrails on all work platforms over 2 metres high.

<u>ASK THEM</u>

2) Toe Boards not required on rest platforms.

3) Rest platforms every 9 metre intervals - refer to BS1139/HD1004 below.

4) Work Platform at least 600 mm wide.

Statutory Regulations - BS1139/HD1004

1) Maximum recommended height for erecting Tower:

WHY IS IT GREATER INSIDE?

Outside - 8 Metres
Inside - 12 Metres

2) Double Guardrails and Toeboards on Work Platforms.

Double Guardrails on Rest Platforms, if storing materials toeboards are needed as well. Maximum gap between Toeboard/Platform and mid-rail - 470mm (18.5 inches).

3) Rest Platforms at 4 metre intervals.

ASK THEM WHY DO THEY THINK THIS IS THE CASE?

4) Preferred Ladder Access - Explain and demonstrate the other types of ladders.

WHAT ARE THE DANGERS IF WE DON'T?

Always climb a Tower on the inside.

5) Windlocks fitted to platforms.

6) Protection to outside edge of platforms.

VIDEO (1)

This Video although some 12 years old is still a useful tool for Training.

Questions and answers after video - especially.

1) Stability of Towers - Height to Base Ratio

3.0 : 1 - Outside
3.5 : 1 - Inside

This has always previously been the method of calculating stability of a tower, however this now no longer applies, for height restrictions please refer to manufacturers instruction manual.

Narrowest Base Dimension dictates stability.

All components will be discussed in full detail when we go outside.

2) When to use stabilisers/outriggers

They are to be fitted right at the beginning or as early as possible.

Illustrate on Flip Chart plan view of stabilisers - A perfect square provides optimum stability, outriggers require plan bracing to

triangulate - illustrate this on Flipchart. Correct fitting of stabiliser
- lower arm to be horizontal - (Demonstrate during outside practical).

Discuss Ballast, Guy ropes and Ground Anchors - however consult the supplier/manufacturer.

3) Windforce - Beaufort Force 4 maximum wind speed for Erecting/Dismantling a tower - Show Beaufort Scale Table in Erection Guide/PASMA booklet.

Beware of tunnelling effect when working in open ended buildings.

The consequences of placing tarpaulin/sheeting on a Tower or using precision tools/drills.

Towers to be tied in whenever possible or certainly if the Tower is over 12 Metres high or exceeds Beaufort Force 4.

Tying in methods to be explained, reveal ties, (only 50% effective), through ties, hilti ties.

VIDEO (2)

Questions and Answers after video - especially.

1) Tying in - advantage with Alto Towers - we can use ordinary tube/fittings - with all other Towers use purpose made fittings.

2) The rules of moving Towers when using Stabilisers.

A) Check the intended route the Tower will travel over.

B) Remove men and materials from Tower.

C) Stabilisers to be adjusted for clearance of no more than 12 mm - reposition after moving ensuring clamps are tightened and contact is made with ground.

IF THIS CANNOT BE DONE ASK THE QUESTION WHAT SHOULD WE DO?

D) Reduce the tower to the point where it becomes free standing - if there were no ties previously, they may now be needed.

E) Unlock Castors before moving - this is the only time they will be unlocked - after moving lock them again and check realignment.

F) Apply effort at the base to move the Tower - never move by mechanical means eg with a forklift truck.

G) Never use a crane to move an Aluminium Tower.

3) Platform sizes that are available - explain.
Mention differences/similarities with other Towers

4) Advantage of S/W Towers - but be mindful that narrowest Base dimension dictates stability.

5) Explain instruction for stairway Tower as shown on Video (2).

WE ARE NOW READY TO ISSUE ERECTION GUIDES BEFORE GOING OUTSIDE - SET 15 MINUTES TO RUN THROUGH IT.

<u>STAGE 2 - OUTSIDE</u>

COMPONENT I.D / RECOGNISING DAMAGE

A) Castors - Component that takes all the weight - mention S.W.L - they must always be locked except when moving.
Not to be used on unfirm ground - the alternative to this is <u>a base plate</u> if the tower is not to be moved.

B) Adjustable legs - use for levelling only - not for gaining height.
One adjustable leg must be fully retracted at all times. A mechanism prevents the adjustable leg from falling out of the End Frames.
Each leg has a device to vary its extension, so that the Tower can be made level on uneven or stepped surfaces.

C) Frames - Show all options and ladders.

D) Guardrail Frames - Minimum Height 1 Metre (+ or - 50 mm).

ENCOURAGE QUESTIONS/ANSWERS

E) Brace Options - Ensure they are fully engaged and check position of hooks.

F) Platforms - Why do we not paint the decking of a platform - correct method of lifting the boards ie. By using the hole in the platform.
- Explain M.D.L.

G) Toeboards - minimum height 150 mm.

H) Stabilisers/Outriggers - Advisable if moving Tower regularly to use outriggers, however if using stabilisers as long as we follow instructions mentioned previously we will be O.K.

QUESTIONS

1) If we need to gain extra height - what do we use?
- Do not use steps/ladders/boxes.

2) What are adjustable legs for?

3) What are Base Plates for?

EXPLAIN CORRECT METHOD OF STORING EQUIPMENT - DO NOT LOAD HEAVY EQUIPMENT ON TOP OF COMPONENTS - REFER TO MANUFACTURERS RECOMMENDATION REGARDING MAINTENANCE.

HAND OUT SAFETY APPAREL, BOOTS, GLOVES ETC.

ERECTING TOWERS

- *Split Delegates into 3 groups and nominate the Towers they are to erect.*

- *Nominate a supervisor in the Groups.*

- *Ensure all Delegates work to the Erection Guide.*

ASSEMBLE GROUPS AFTER ERECTION AND DISCUSS THE FOLLOWING 'BULLET' POINTS.

1) Stability of Towers

2) Tower Loading.

3) Wind Force.

4) Double Handrails and Toeboards.

5) Check for squareness, vertical and two plains.

6) Explain dismantling procedures - never drop components to the Ground. Pass them down or use rope. Never use force on components, ensure braces are kept in line when one end has been removed.

7) During practical get the delegates to move a Tower to ensure precautions already discussed are are followed.

HAZARDS

THIS DISCUSSION TO BE DONE 'OUTSIDE' FOLLOWING THE PRACTICAL.

1) Ensure suppliers manual is on site and is read and understood.

2) All Tower components must be the same.

3) Don't use damaged equipment or incompatible items.

4) Check all components are working properly.

5) Keep to manufacturers recommended heights.

6) Do not erect on ground incapable of supporting the Tower.

7) Ground is to be level.

8) Castors to be locked - only unlocked if moving.

9) Use outriggers/stabilisers when required.

10) Do not use adjustable legs or boxes to gain height.

11) Secure interlocking clips on the Frames - ensure they are fully secured - especially after moving.

12) Do not use or move the Tower on sloping or obstructed surfaces without attention to vertical alignment and stability.

13) Do not use a Tower which is not vertical.

OVER FORCE 4

14) Tie Towers into building or adjacent structure when they should be.

ABOVE 12 METRES

15) Do not move the Tower carelessly - by pulling it at Platform level.

16) Do not move the Tower with men or materials on the structure.

17) Do not move the Tower by mechanical means.

18) Ensure the ground is clear of obstructions and pot holes.

19) Bracing members to be fitted as per instructions.

ASK - HOW MANY?
AT WHAT HEIGHT?

20) Fit handrails and Toeboards when they should be.

WHAT IS MINIMUM HEIGHT OF HANDRAIL?
WHAT IS MINIMUM HEIGHT OF TOEBOARD?

21) Be careful of strong horizontal forces at working platform level.

22) Do not lift materials or equipment outside the Base Area of of the Tower.

OVER FORCE 4

23) Do not use the Tower in adverse weather conditions.

24) Inspect before each use.

ASK - WHAT COMPONENT TAKES ALL THE WEIGHT?

25) Do not exceed maximum safe working load.

26) Avoid using sheeting around the Tower.

ASK WHAT CAN HAPPEN?

27) Do not climb from the Tower into a nearby building or vice versa.

28) Do not climb up the frames use the method of access provided by the manufacturer.

29) Do not use Tower in the vicinity of Power lines - HSE Guidance. Note GS6 recommends the following clearances:- Electricity Pylons - Minimum Clearance 15 Metres. Electricity Cables carried on wooden poles - minimum clearance 9 Metres.

Please obtain permission from the electricity authority before entering site.

30) Fix warning notice to Tower if left incomplete.

ASK - WHAT PRECAUTIONS WE SHOULD TAKE?

A) WARNING SIGNS
B) FENCE OFF AREA
C) REMOVE LADDERS IF POSSIBLE

31) Take precautions to prevent children from climbing the Tower - it is important we do something rather than assume that children will climb it anyway.
- Also keep the public away.
A permit may be required to erect in a public place.

STAGE
3 - BACK IN THE CLASSROOM

- Reshow video (1) - mention 3 mistakes in video - get them to identify.

- Discuss H.S.E - training courses such as these are recognised by H.S.E - explain the role of inspectors, and the power they have to prevent sites from working if need be.

- Discuss recommended number of people to build/dismantle Tower.

- Necessary permits for erecting on roads or pavements.

- Hand out Test Papers - read through the Test Paper first to establish full understanding.

- Allow set time for Test - use your notes if required. Any Delegates with learning difficulties would be dealt with on a one to one basis.

- On Completion of Test go through test paper ensure all Delegates understood.

- Inspection and reporting requirements of Health and Safety Regulations 1996, - the Act requires periodic inspection of scaffolds (including Aluminium Towers) by a competent person, and the submission of a report when first taken into use for 7 Days or more, after any substantial addition, dismantling or other alteration, after any event likely to have effected its strength or stability, and at regular intervals not exceeding 7 days since the last inspection.

<u>N.B</u> The inspection requires a report to be completed in the format shown in the course synopsis - no report is required if a person cannot fall 2 Metres (6'6") or more or if it is not going to remain static for 7 days or more. If the Tower is faulty or left incomplete, a warning notice 'Danger incomplete' or

'Damaged not to be used' must be displayed.

Method Statements - Supervisor would have copies before commencement of work.

Finally - A Signed Receipt for all documents to be obtained and kept at the approved training centre.