SWRI-OSHA Alliance

Signed February 20, 2003

Overall Goal

Provide members with info and guidance, especially on:

- Reducing and preventing exposure to:
  - Lead
  - Silica
  - Confined space hazards
  - Falls
- Staging requirements

Outreach & Communication

- Reach out on those topics through conferences as well as print and electronic media
- Promote and encourage members to utilize OSHA's cooperative programs—VPP, Partnerships, Consultation—and also endorse mentoring among SWRI members
- OSHA table with various handouts available in the display area

Promoting National Dialogue on Workplace Safety and Health

In speeches and public appearances, SWRI and some of its members will raise others awareness of and demonstrate their own commitment to workplace safety and health

Accomplishments to date

- Links between OSHA's Web page on the SWRI Alliance to SWRI's Web site
- http://www.osha.gov/dcsp/alliances/swri/swri.html
- Five articles in Member Briefs
- A presentation on Confined Space Entry October 28, 2003 in Vancouver
- This presentation on Mast Scaffolding
- Respiratory Protection, Silica and Lead exposures are potential topics for 2004 Annual Meeting in Boston

“The New Generation of Work Platforms, Mast Scaffolding”

Presented by
Domenick Salvatore
OSHA
Compliance Assistance Specialist

Mast Scaffolding

- OSHA Construction Industry Standards

  1926.451 - Scaffolding Requirements

  1926.454 - Training Requirements

  ANSI/SIA – A92.9-1993 for Mast Climbing Work Platforms

Benefits of Mast Scaffolding

- Cut labor costs in excess of 30%
- Reduction of access time by as much as 90%
- Reduction of building ties up to 70%
- Shorten production time

Benefits of mast Scaffolding

- Offer safety, convenience and flexibility
- Speeds available from 3 feet to 40 feet per minute
- Capacity range from 770 lbs. to 25,000 lbs.

History of Mast Scaffolding

- Appeared in Europe in the 70’s
- First used in North America in 1982
- Later in the decade, a Canadian inventor created Hydro Mobile, the fist Mast Climber built in North America
- In 1991, the Fraco platform was developed followed by Bennu and EZ Scaffold

Mast Scaffold Used for Restoration Work

Typical Mast Scaffold

Typical Mast Scaffold Tie In

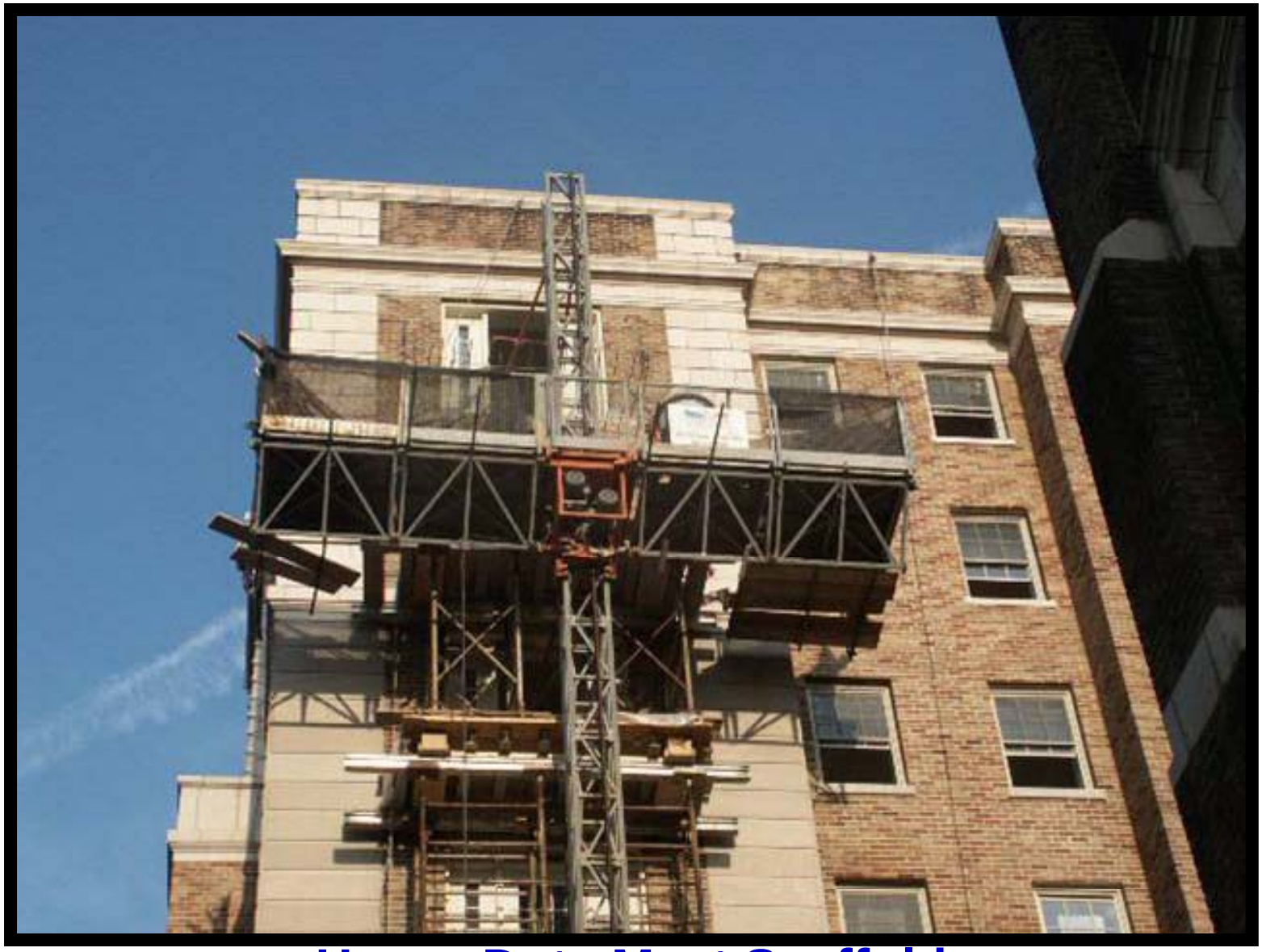
Base Support Structure Components

Mast Scaffold in Use

PPE Utilized

Safe Access to Platform

Mast Scaffolding Uses Less Space



Heavy Duty Mast Scaffold

Maintain Planking

Single Mast with Large Platform

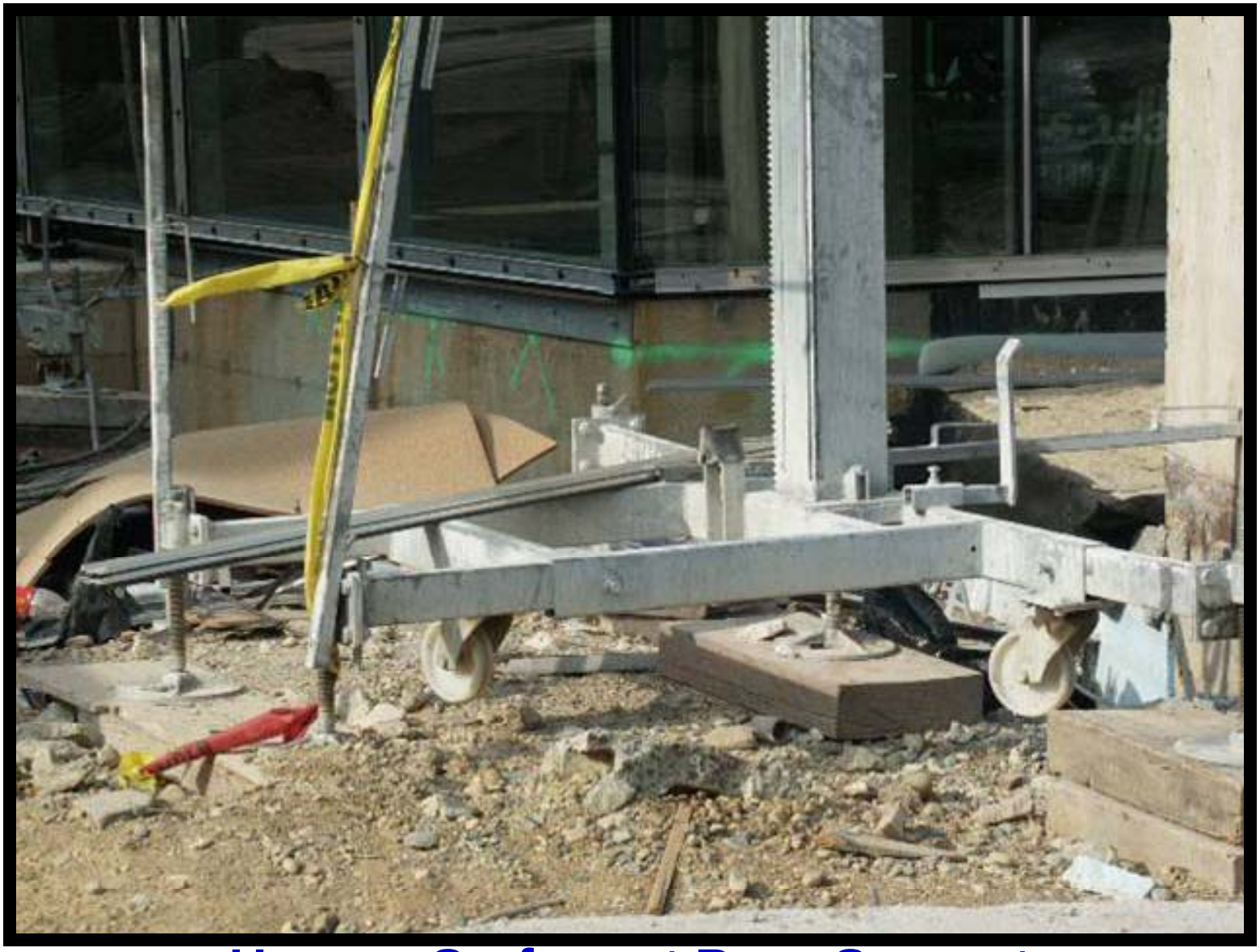
Unique Tie Ins

Wedged into Window Openings

Base Support Bridged over Space

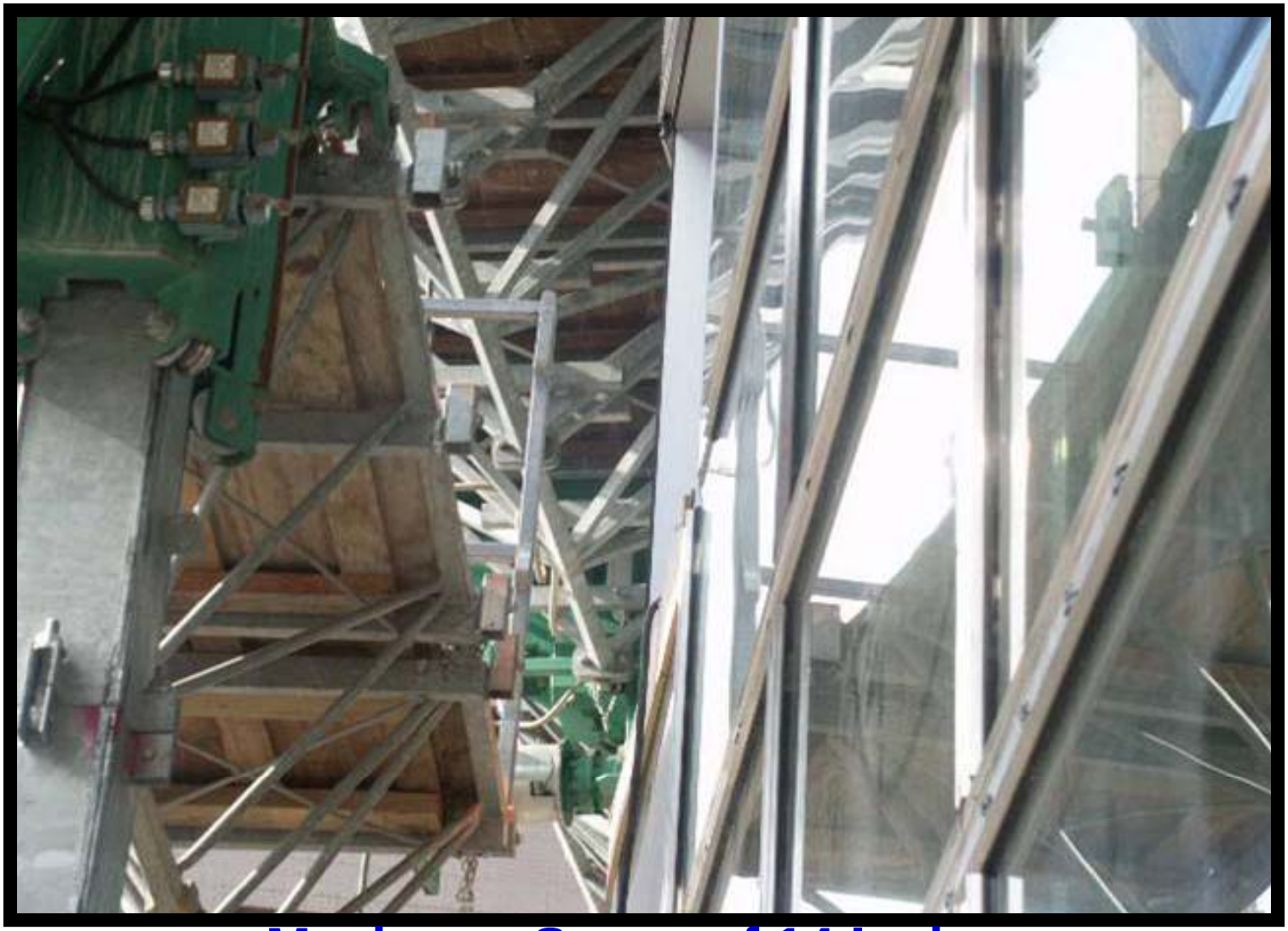
Pole Stabilizers Connected to Mast

Customized Mast Scaffolding



Uneven Surface at Base Support

Outriggers and Stabilizers on Sills



Maximum Space of 14 Inches

Used For Various Tasks on Structures

Low Rise Use Is Also Popular

Transporting Mast Scaffolding

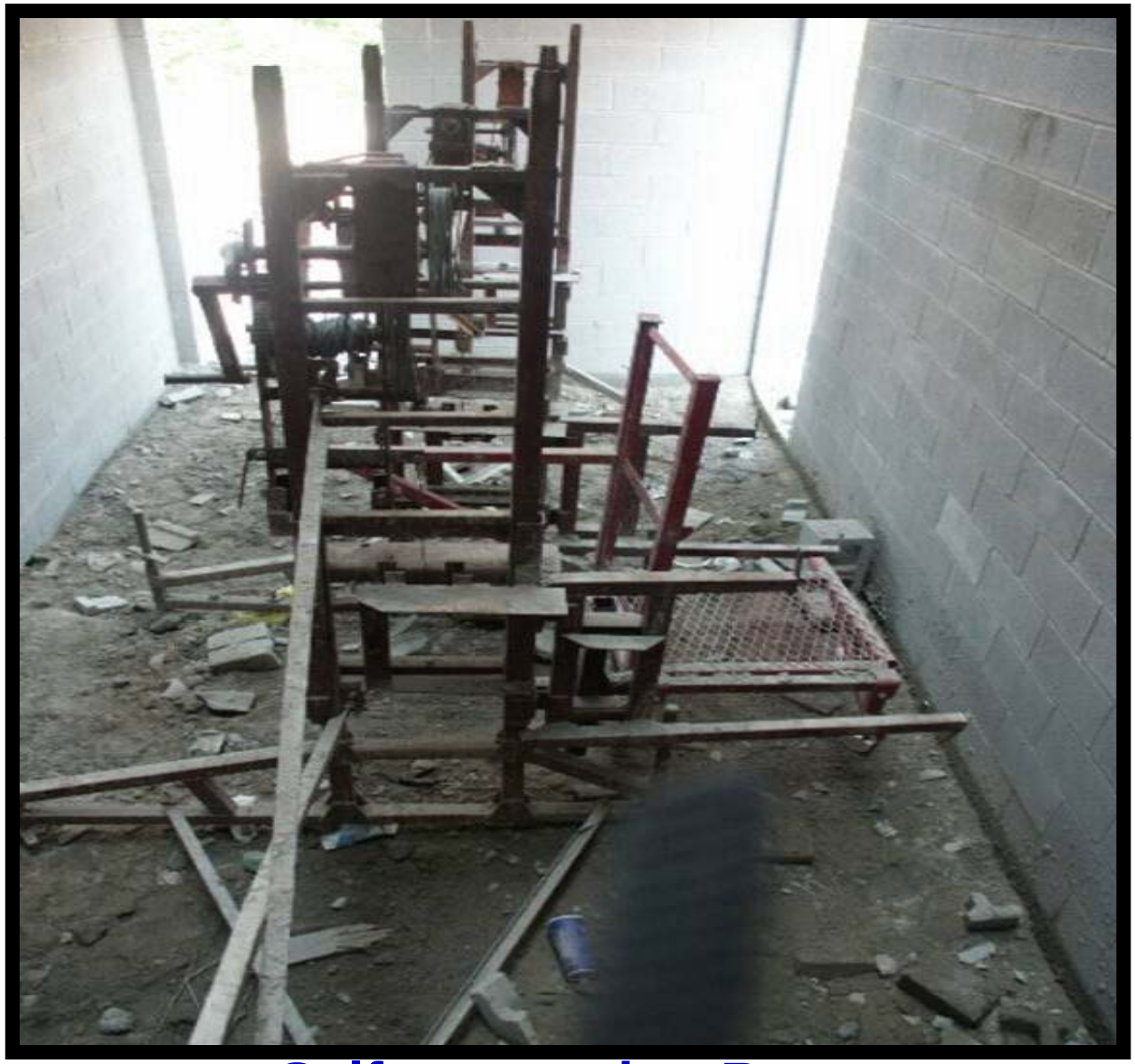
All Components Are Secured

Unique Use of Mast Scaffold

Extending the Work Height

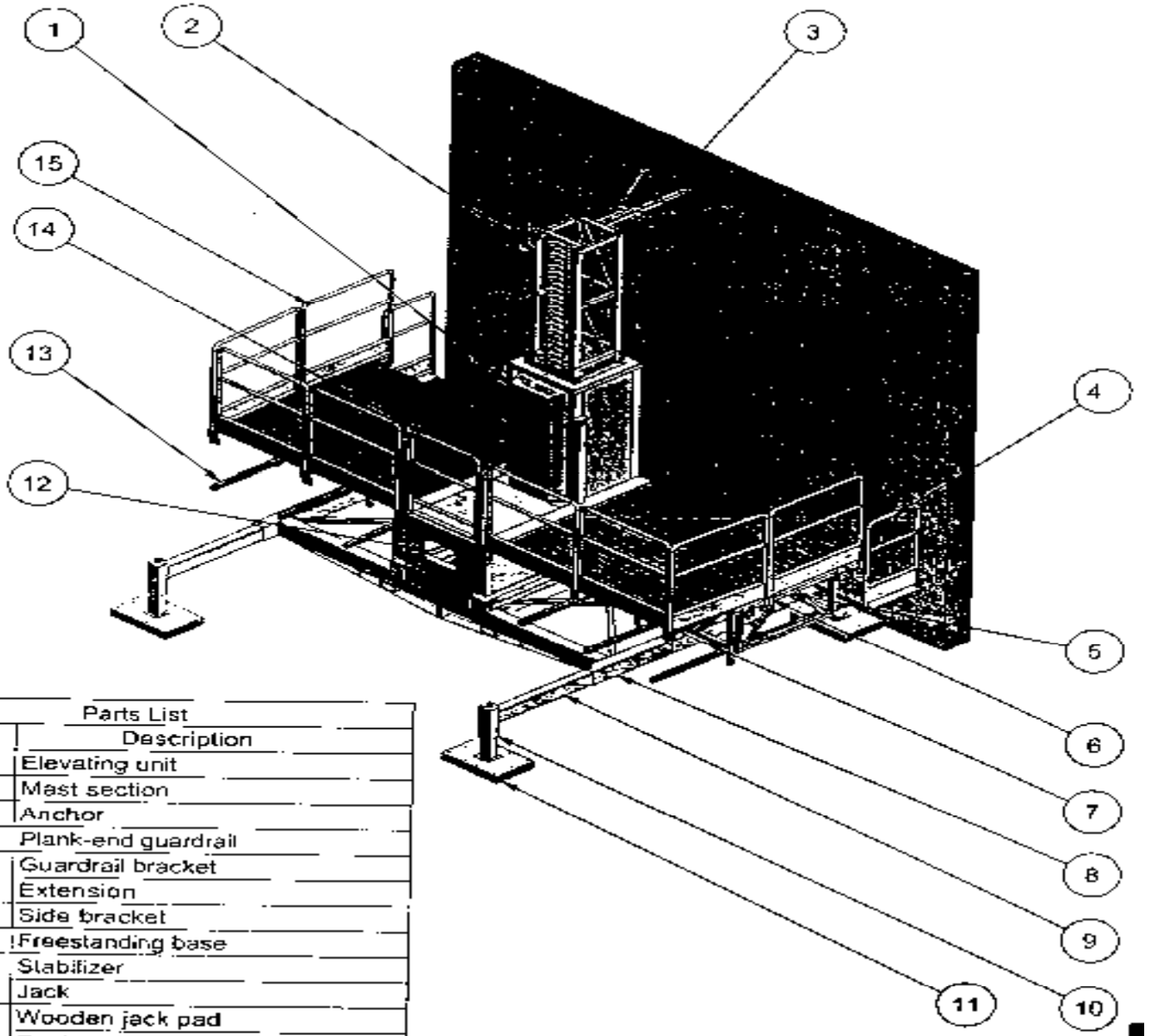
Four Working Sides

Heavy Duty Structure Components



Self-supporting Base

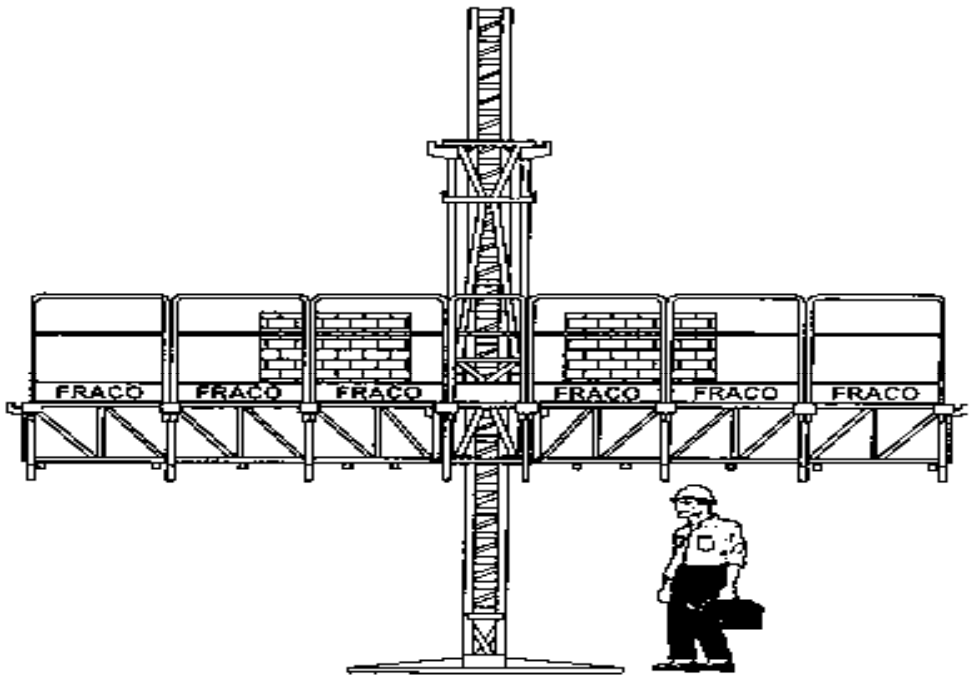
General view



Parts List	
Item	Description
1	Elevating unit
2	Mast section
3	Anchor
4	Plank-end guardrail
5	Guardrail bracket
6	Extension
7	Side bracket
8	Freestanding base
9	Stabilizer
10	Jack
11	Wooden jack pad
12	Engine support
13	Outrigger
14	Access door
15	Guardrail

frame 1

NEED FOR TRAINING



This platform is to be used by trained and authorized personnel only. It is the user's responsibility to :

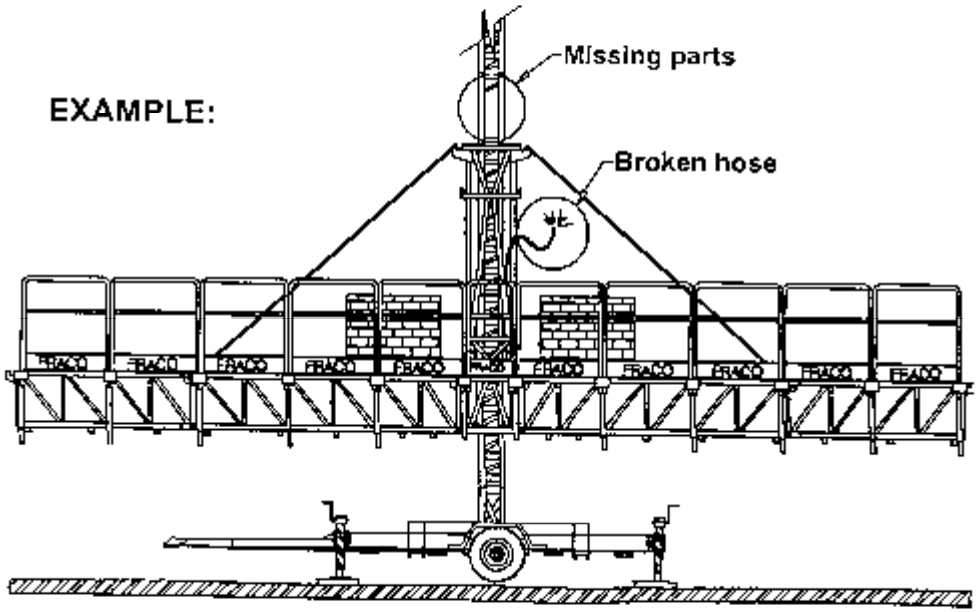
- Interpret and understand all caution and danger warning signals on the machine as illustrated in the operating manual.
- Have a clear understanding of the controls and to demonstrate that knowledge to an authorized trainer.
- Understand the hazards associated with using mast-climbing work platforms.
- Ensure only authorized personnel use the platform.
- Inspect and service the units on a daily basis.

- Facts -

SAFETY HAZARD

- ***DAMAGED EQUIPMENT***

EXAMPLE:



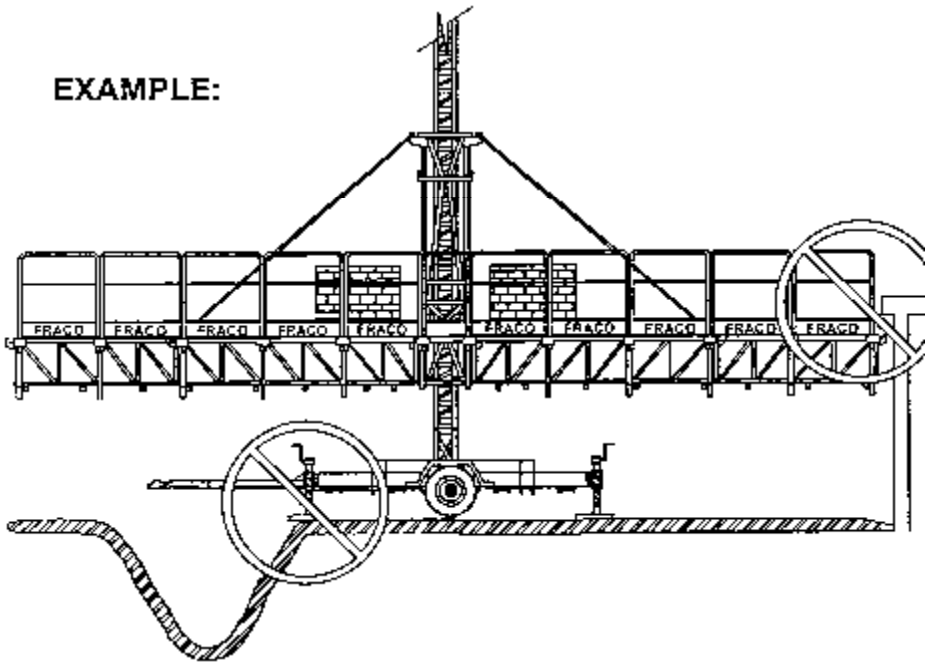
Do not operate a machine that is damaged or malfunctioning. Discontinue operations until the unit is repaired. Do not alter or modify the platform in any way. Unit modification may change load capacity, free-standing height, and tie frequency. Mechanical, hydraulic or electrical alterations may adversely affect the performance of this machine.

- Facts -

TIP OVER HAZARDS

- ***DROP-OFFS, HOLES, TRENCHES, FLOOR CUT OUTS, OPEN ELEVATOR SHAFTS OR LOADING DOCKS.***

EXAMPLE:

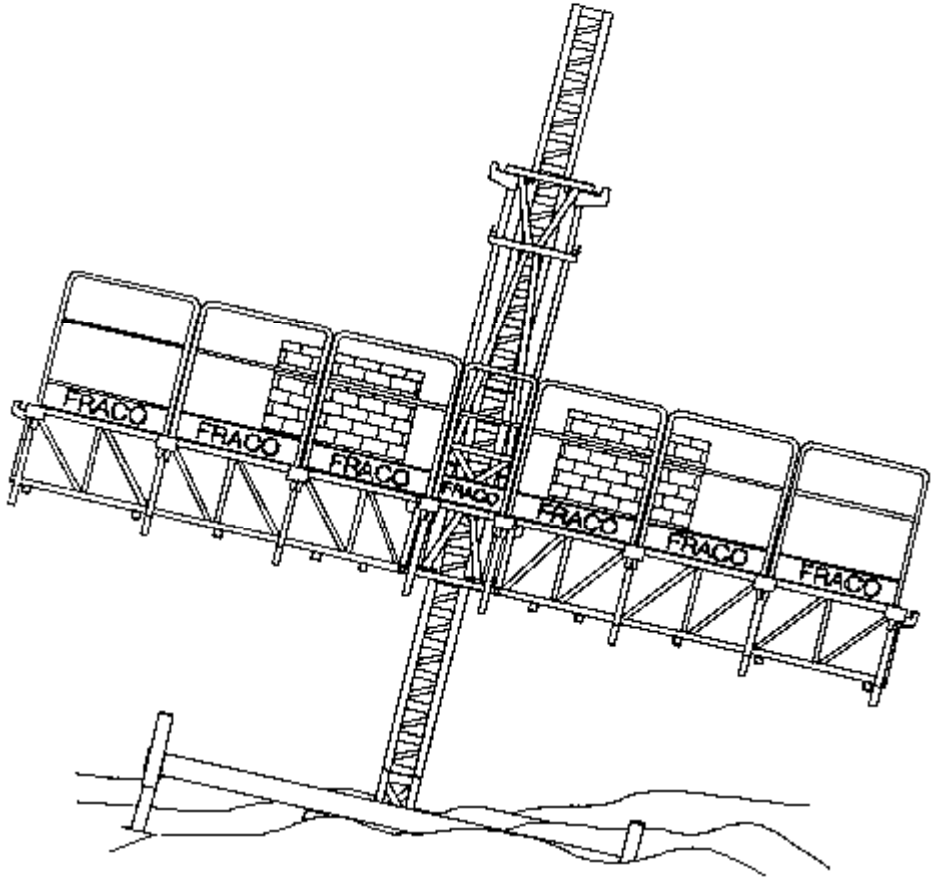


Watch out for such tip over hazards. Do not self-propelled work platforms near any pote tip-over hazard.

- Facts -

Tip over hazards

- *Uneven or inclined surfaces*



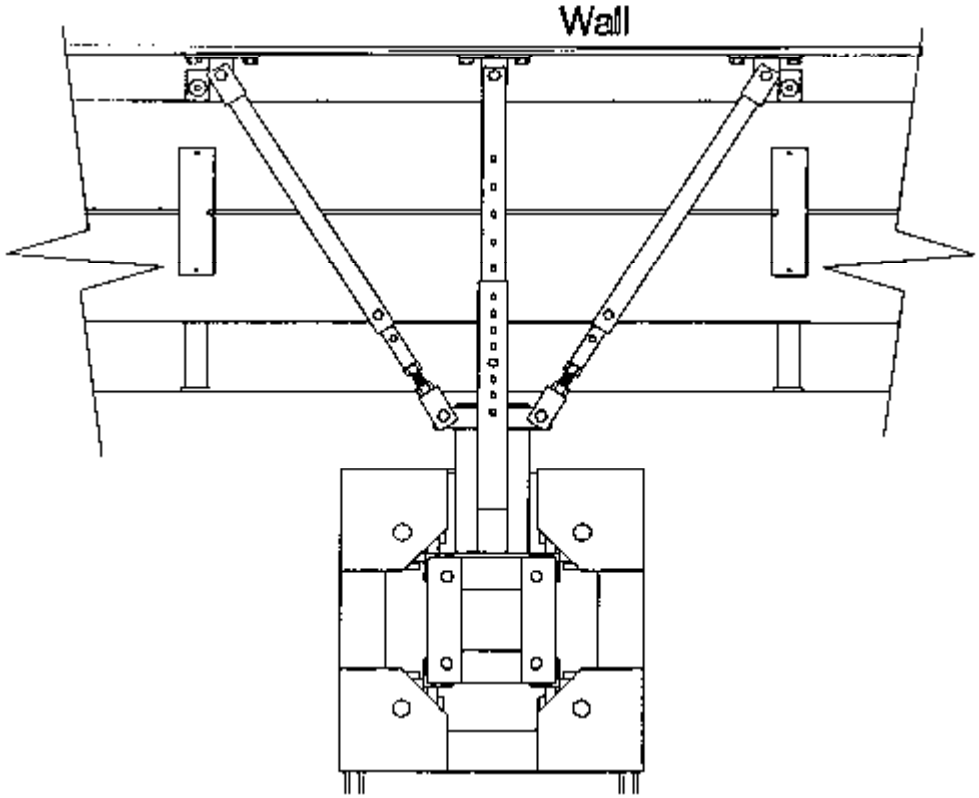
Apply ground surface modification when necessary.

Do not install a work-platform on an uneven or sloping surface unless outriggers have been used for platform support. The ground surface must be sufficiently levelled as to support the load.

- Questions -

TIP OVER HAZARDS

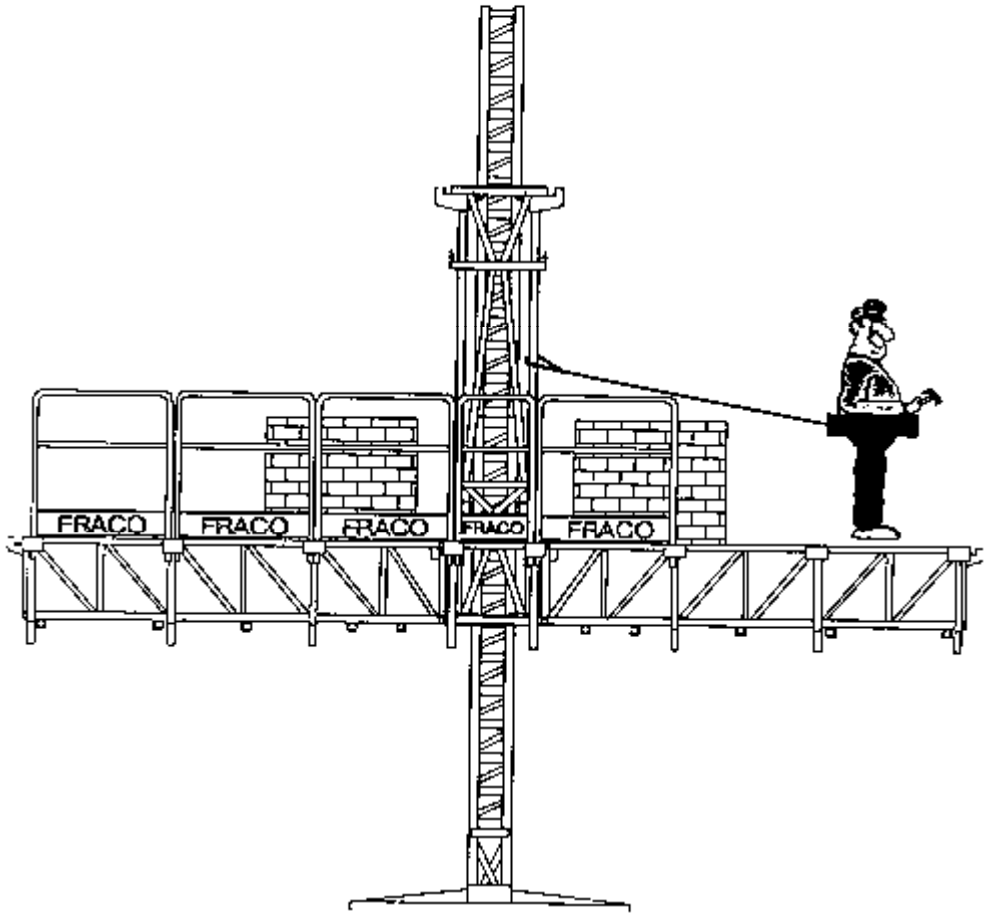
- *TIE ASSEMBLY*



Make sure the mast-climbing work platform is properly tied to the building, (or structure) as recommended by the manufacturer, unless it is designed to be free-standing.

- Facts -

FALL HAZARDS

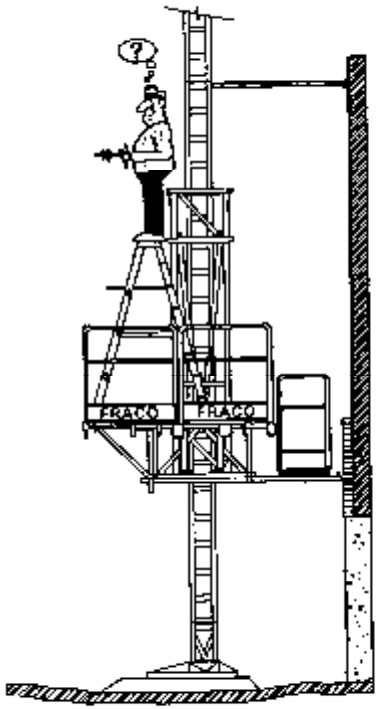


Fall protection devices such as harnesses shall be used if any section of the guardrail system has been removed on an exposed side of the platform.

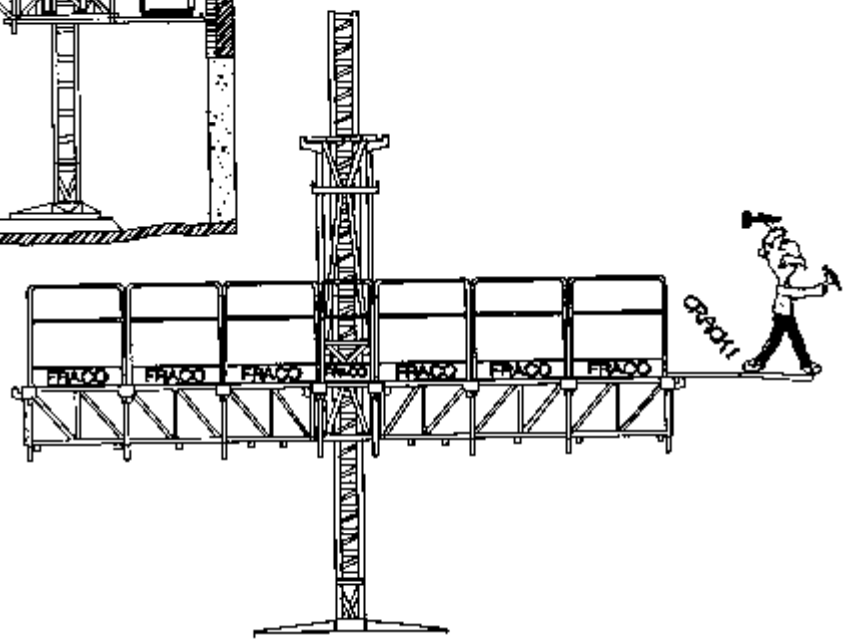
- Facts -

FALL HAZARDS

- *PLATFORM EXTENSIONS*



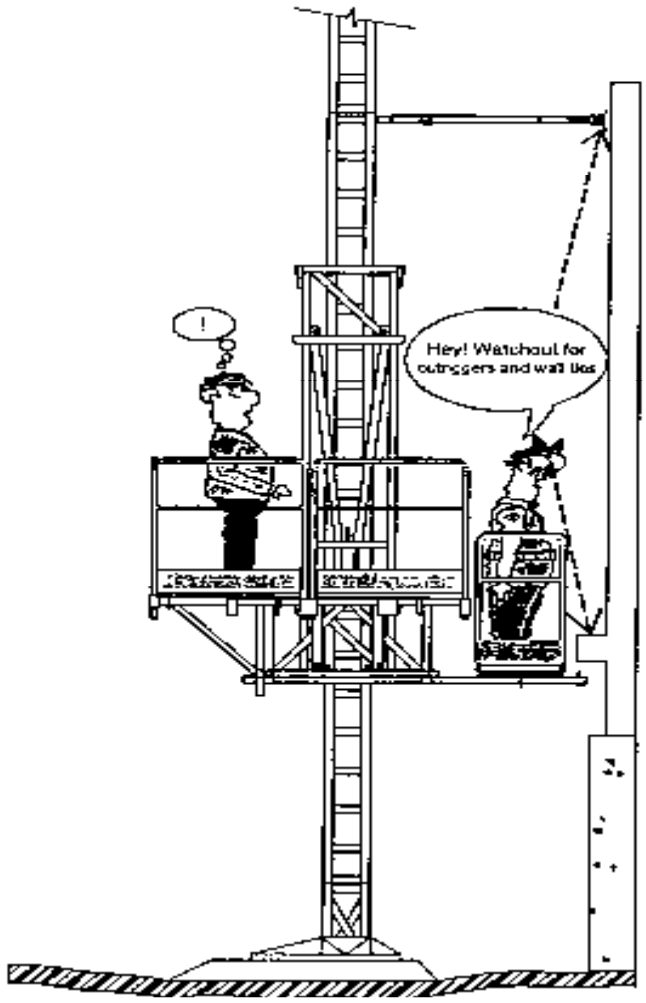
Do not use a ladder or stand on the platform railings in order to get higher.



Do not climb the guard-rails, use ladders or any other kinds of devices in order to increase your working reach on the extension platform.

SAFETY HAZARD

- ***LOOK WHERE YOU ARE GOING***

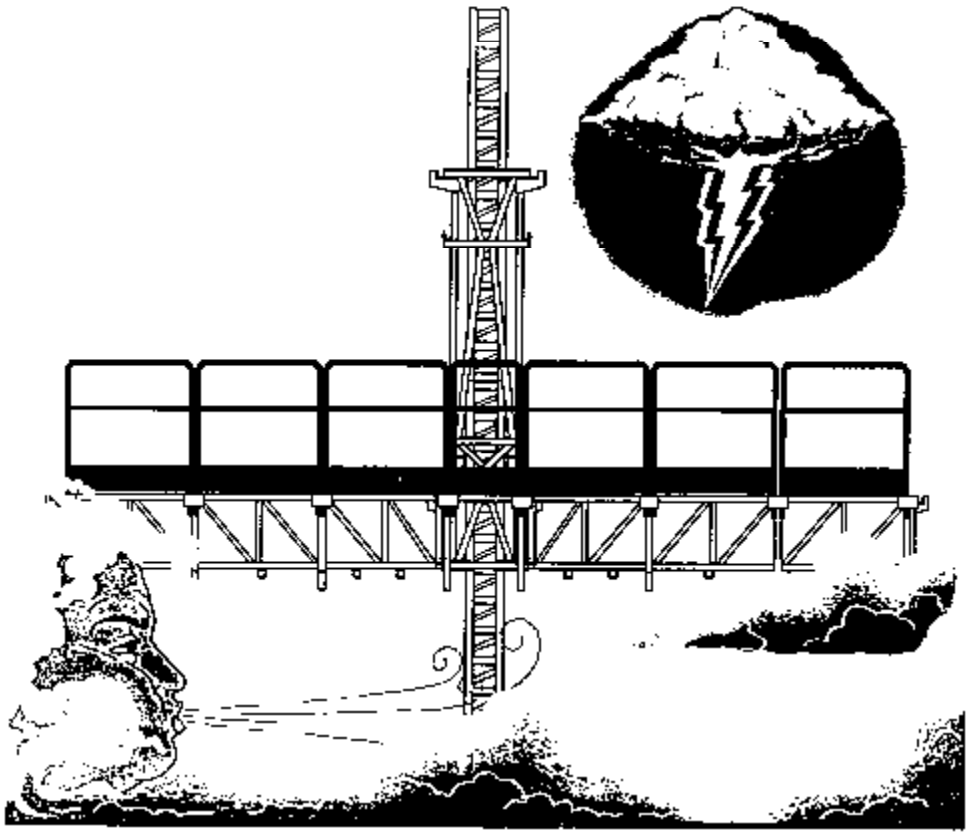


When raising and lowering the platform, make sure you have spotted any obstacles that are in the way. Platform contact with buildings, balconies, roofs, overhangs, trees, overhead power lines and personnel must be avoided at all costs.

- Facts -

SAFETY HAZARDS

- ***WINDY OR GUSTY CONDITIONS***



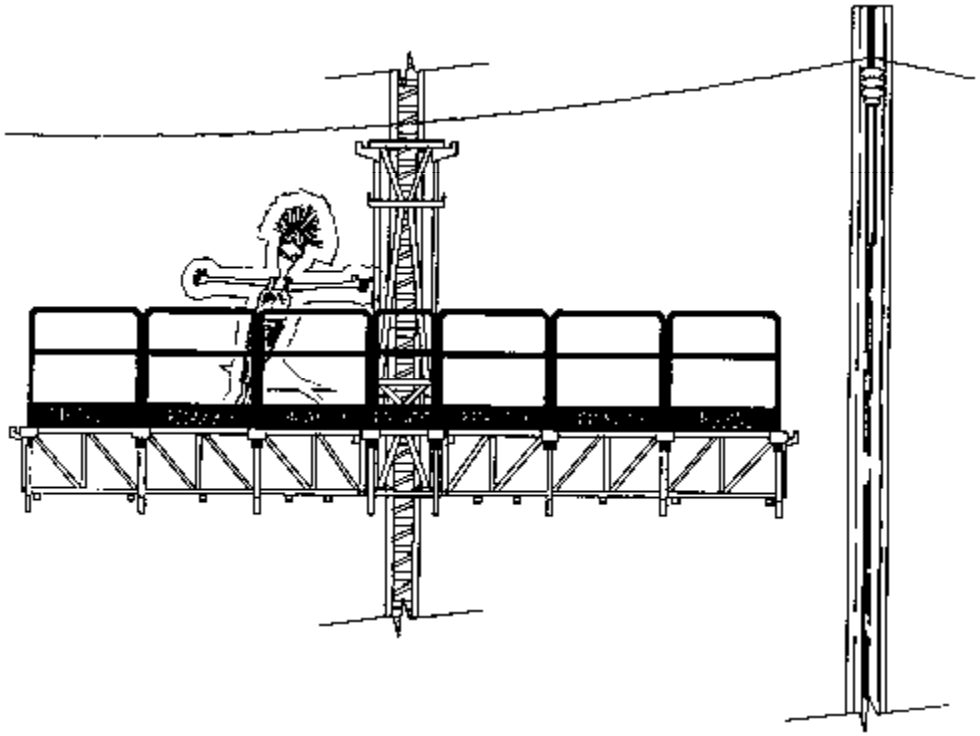
Do not raise the platform in these kinds of conditions. Consult the operation manual to find out the maximal wind speed in which the platform may be raised safely. In case of electric thunderstorm, leave the platform.

- Facts -

SAFETY HAZARDS

- ***CLEARANCE***

The worker may receive an electric shock if the unit comes into contact with electrical conductors.

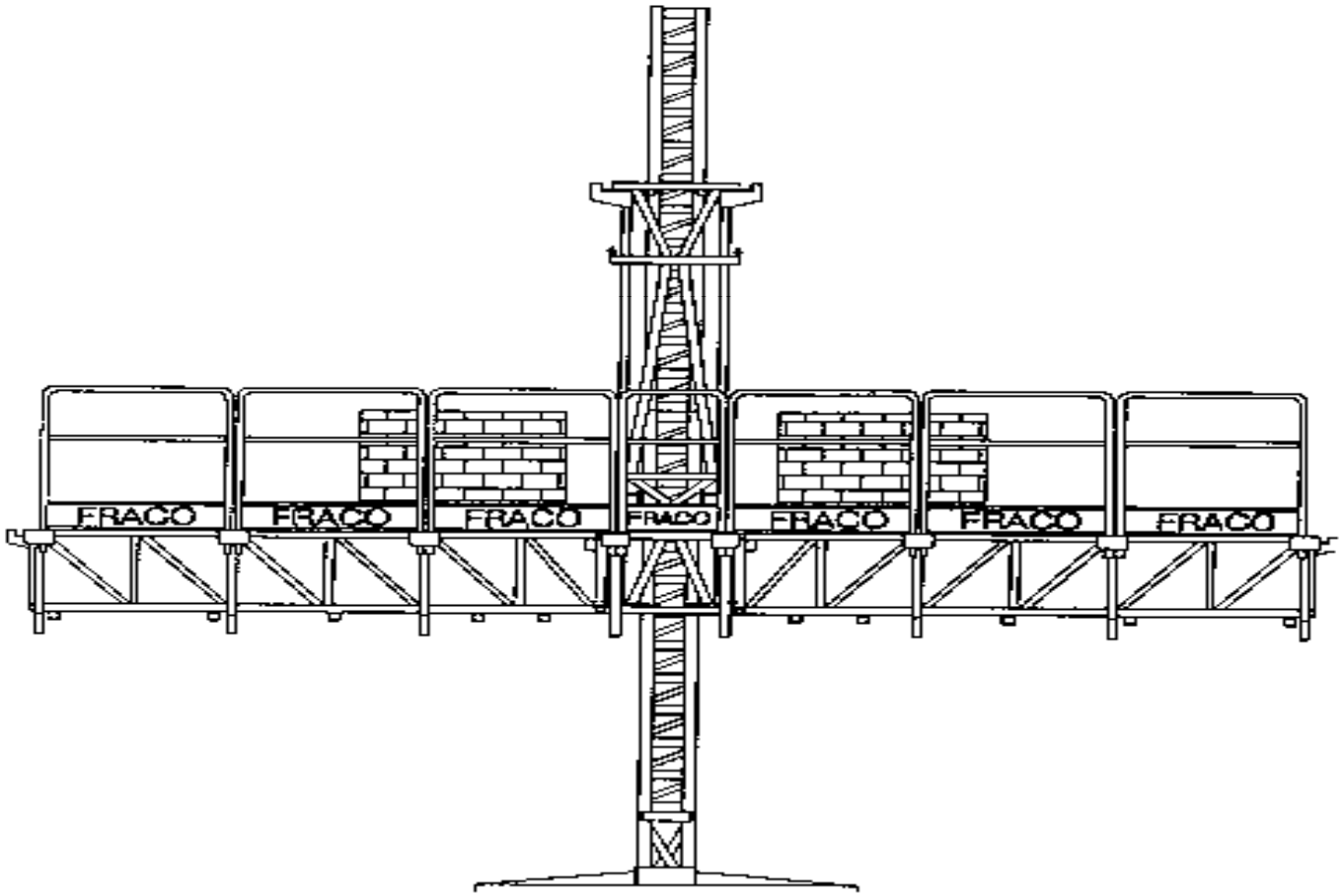


The work platform must be kept at a safe distance from power lines at all times (this distance depends on line voltage). Consult your manual or your local electricity company for minimum safe approach distances. Remember to allow for extra room since the platform and wires may move. Keep in mind that travel cords, ropes, hoses, water, etc., may conduct electricity. Be careful around electrical conductors!

- Facts -

- *SAFETY POINTS*

It is about time for your hands-on training to begin. First lets review the safety points discussed so far.



It is important to train workers on the same platform model or one with similar characteristics and controls as the one he/she will be operating in the future. Also, the learner must be trained by a qualified instructor in a hazard-free area. Finally, the trainee must be able to demonstrate his/her knowledge related to the operation of the work platform being used.

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Phone: (450)658-0094 1(800) 267-0094 FAX: (450) 658-9905
e-mail : fraco@fraco.com Web :http//www.fraco.com

Date:

Daily inspection sheet

Unit Number: *Serial Number:*

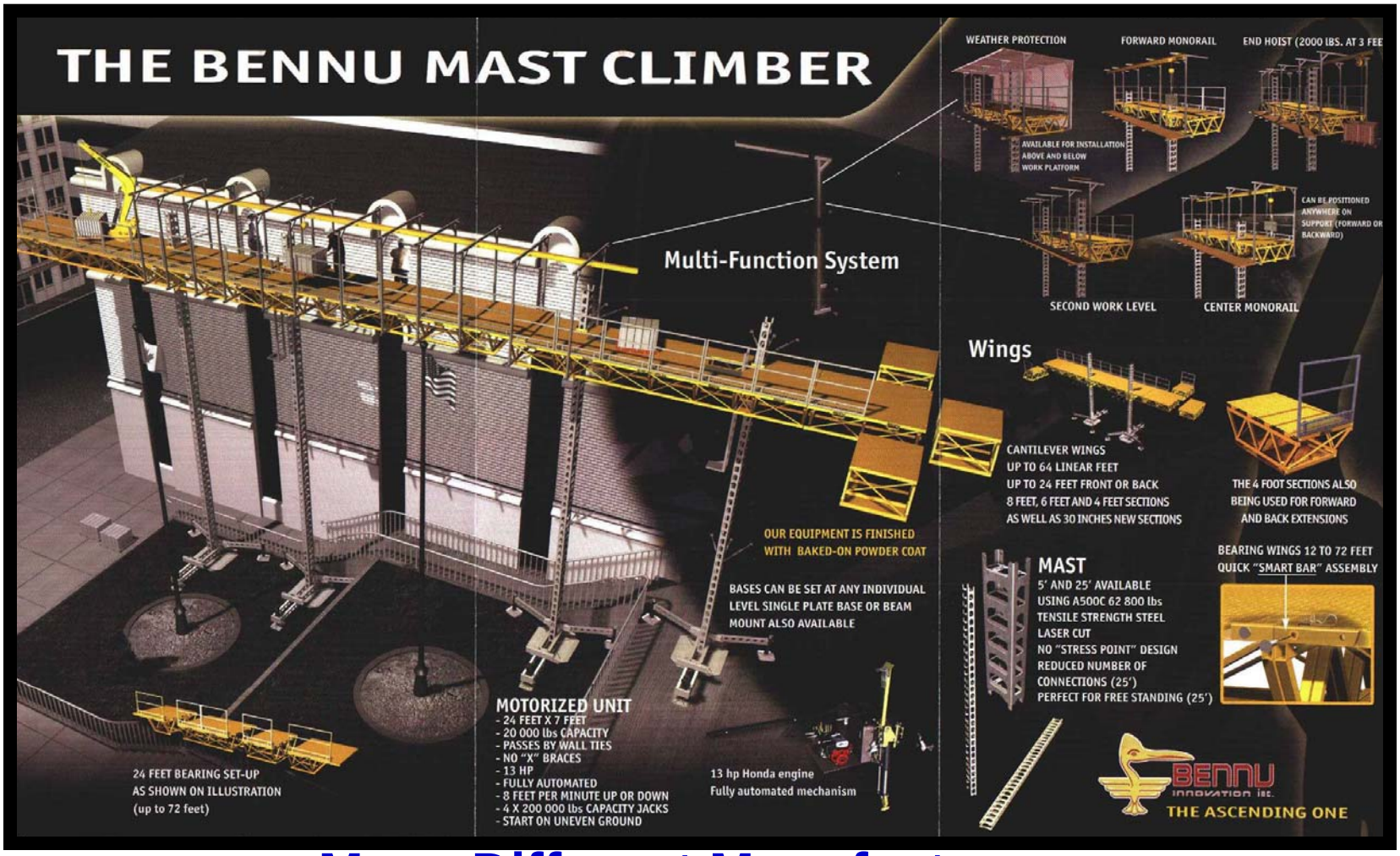
Item to check	Checked	To correct
Level of the base and rigidity of walls ties		
Gas and oils : level and leaking		
Warning panel		
Bolt and lock missing		
Planks and plank ties		
Condition of plywood		
Guard-rail system		
Cleanliness of the platform		
Weight and weight distribution on the platform		
Safety equipment (regarding the local law)		
Operating of the platform (all irregularity)		
Functioning of the safety system		
Items specified by the manufacturer		

Actions taken :

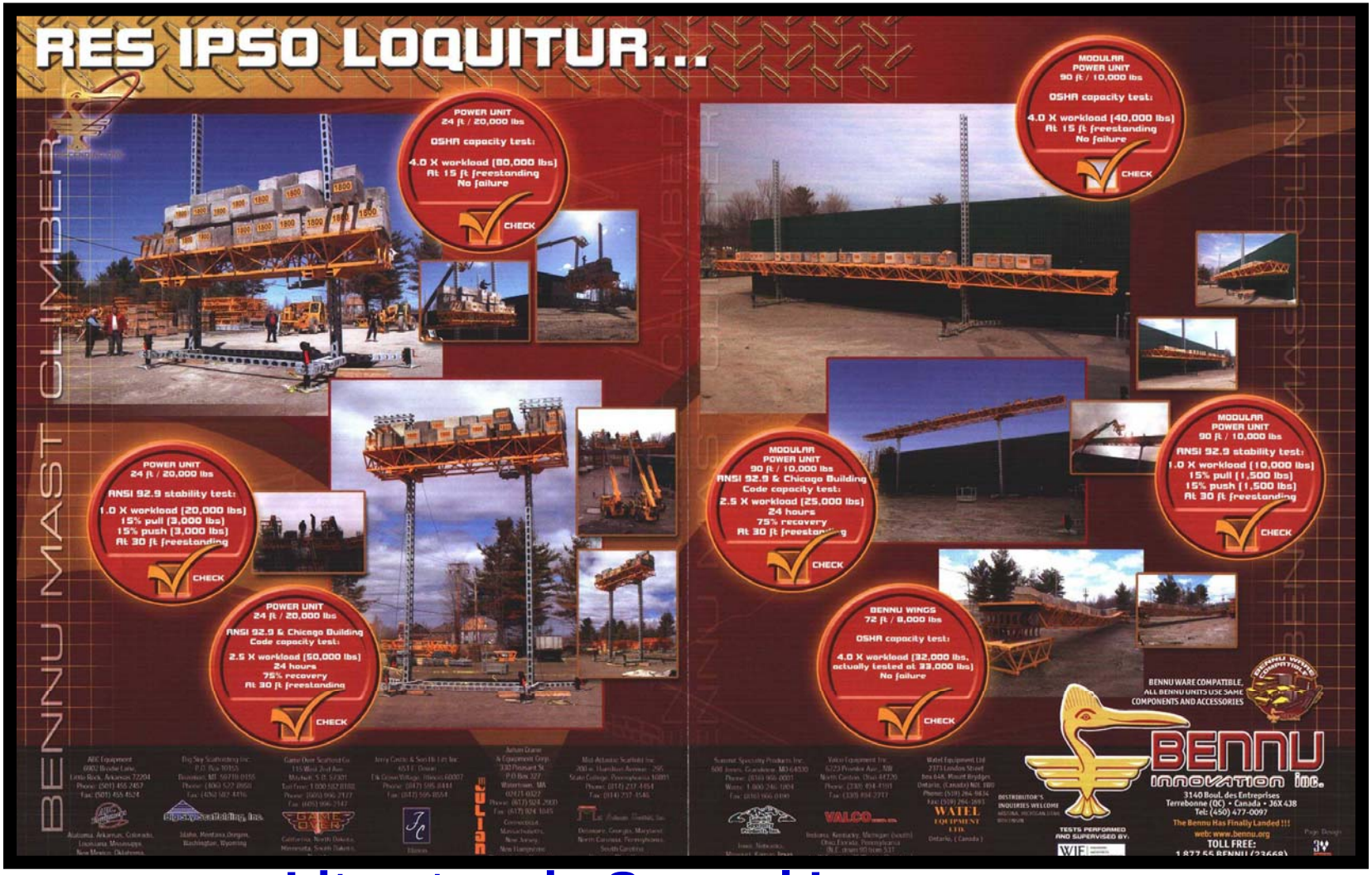
Inspector:

Name (printed) Signature

Correct all malfunctions, problem identification, and futher inspection if necessary before continued use.Detail inspections of this mast climbing work platform shall be performed every three (3) months of service as specified under section 6 of ANSI/SIA A 92.9

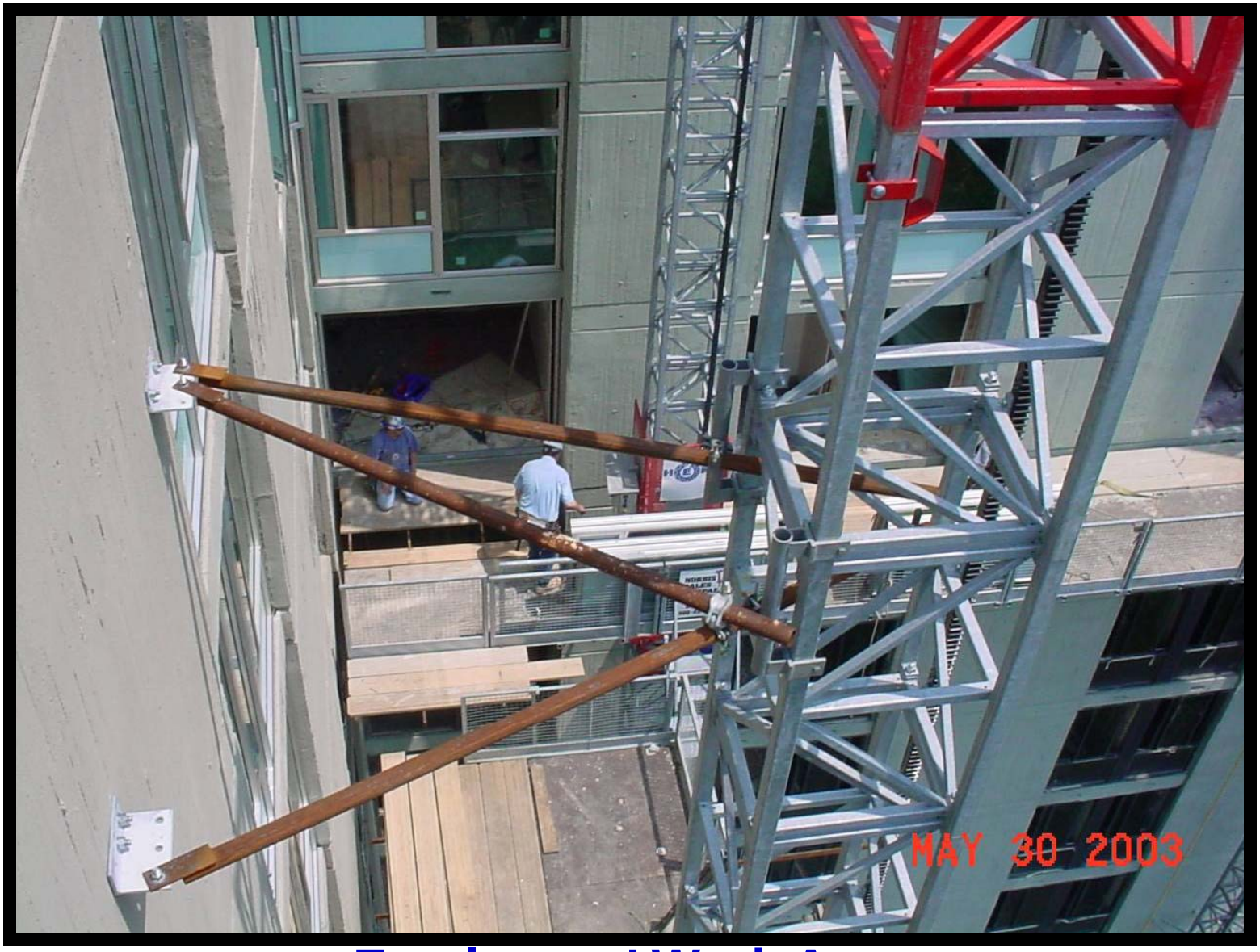


Many Different Manufacturers



Literature in Several Languages

Case Study of 1st Accident



Employees' Work Area

View Looking Outside

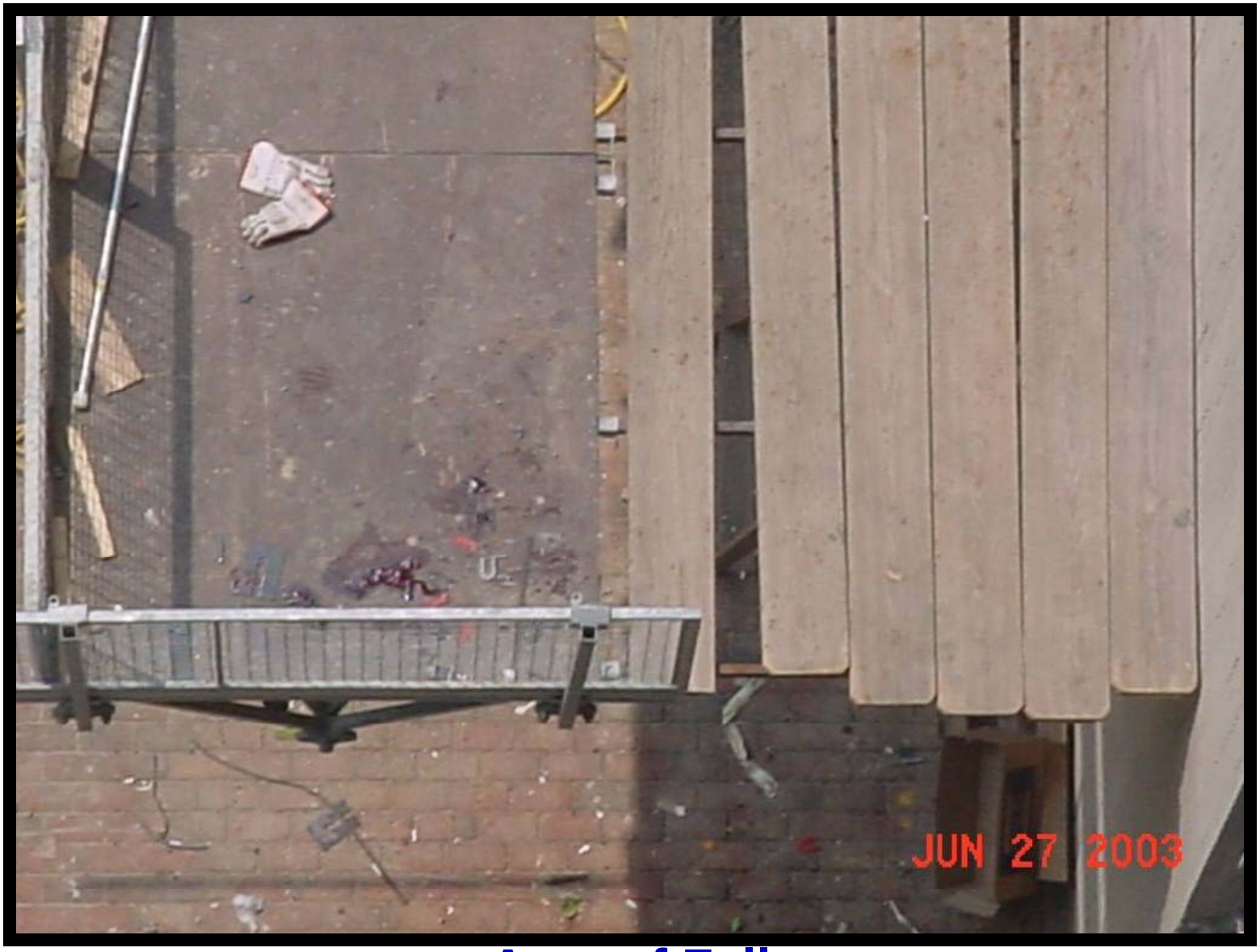
Adjacent Scaffold Was Lowered

Looking Down into Work Area

Planking from Which the Worker Fell

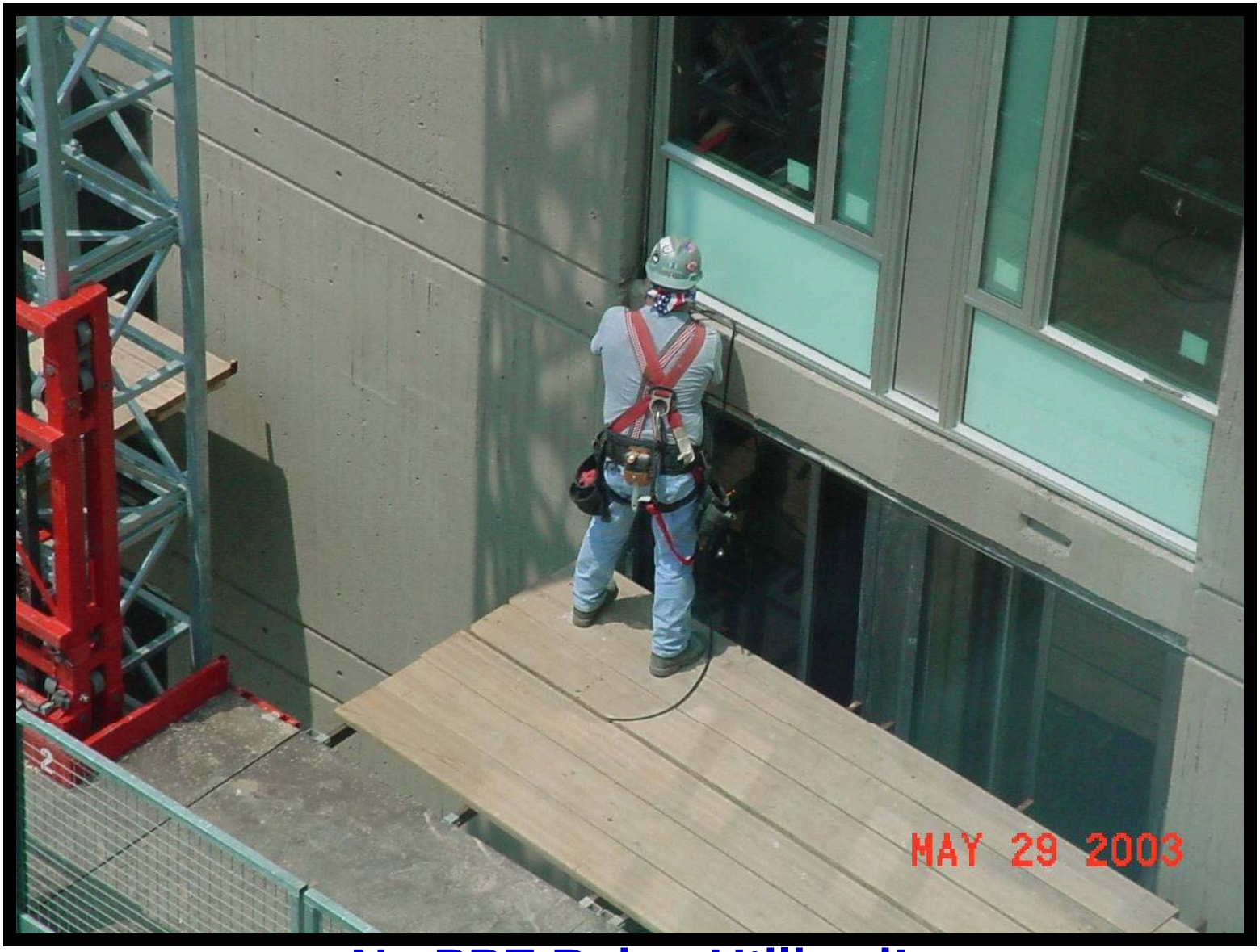
Landed on Lowered Scaffolding

View from Above



Area of Fall

Other Hazards at Site, Notice Opening at Mast



No PPE Being Utilized!

Adequate Anchorage Point?

Another Scaffold Was Moved

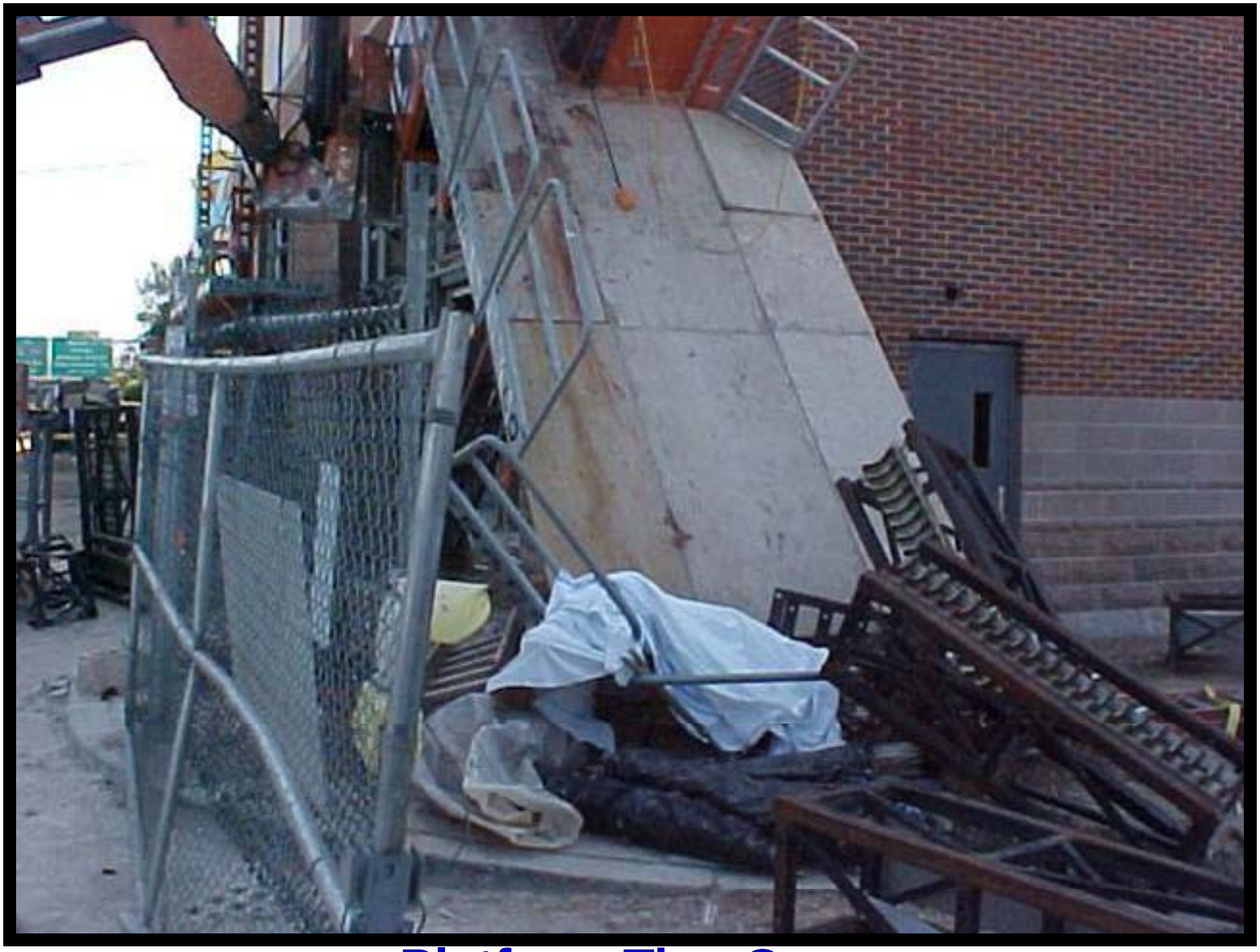
Inadequate Platform Planking

Open Area *Not* Protected

Employee Sightseeing?

Case Study of 2nd Accident

Workers Dismantling Mast Scaffolding



Platform Tips Over

Employee Crushed by Mast Section

Emergency Responders in Action

Could Not Save Him

Components on the Ground

Media at Accident Location

Interviewing Site Managers

325 Lb. Mast Section

Lull Supporting Platform

Building Front View

Mast Is Not Bent

Two Mast Scaffolds in Use

Base Section at Mast

Base Still Attached

Lower and Last Tie In Removed

Sections Removed Prior to Accident

SUMMARY

- Mast Scaffolding can only be operated by properly trained and authorized personnel.
- Employees must be trained on the specific type and model they are using.
- There are different levels of training for operation, erection, modification & dismantlement and maintenance