

Tower Climbing Safety & Rescue

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Presented to:
Antenna Forum

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Tower Climbing Safety & Rescue Agenda

- Introduction
- Hazards
- Tools and Tasks
- Safety Equipment
- Fall Protection
- Rescue
- Summary: Administering Safety



Introduction

- How to live to enjoy your tower
- Not Tower Construction
- New View of things
- Something to Think about
- The old is out



Hazards

- Environmental
- Structural
- Tools and Techniques

Hazards: Environmental

- Weather Related Hazards
 - Wind; Moisture; Lightning; Sun
- Live Hazards
 - Insects
 - Birds
 - Snakes
 - Rodents
 - Humans
- Assessment: Find out what will get you and Figure out what to do about it



Hazards: Structural

- Anchors
 - Shafts
 - Point of Daylight
 - Turnbuckles
- Guy Tension
- Tower Coating
- Plumb and Torque



Hazards: Tools and Techniques

- Condition of Personal Protective Equipment
 - PPE
- Condition of Hand Tools
- Review your Plan for work on the Tower
 - Take everything you will need
 - Be sure everyone is aware of the tasks
 - Mentally review the entire scope of tasks

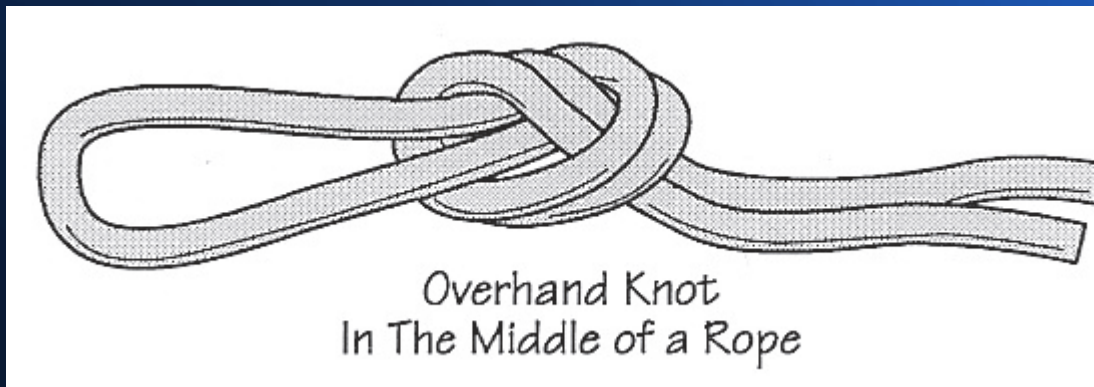
Tools and Tasks

- Rigging
- Gin (Jin) Pole
- Winches
- Hand Tools
- Tool Belts / Bags
- The Climb
- The Work

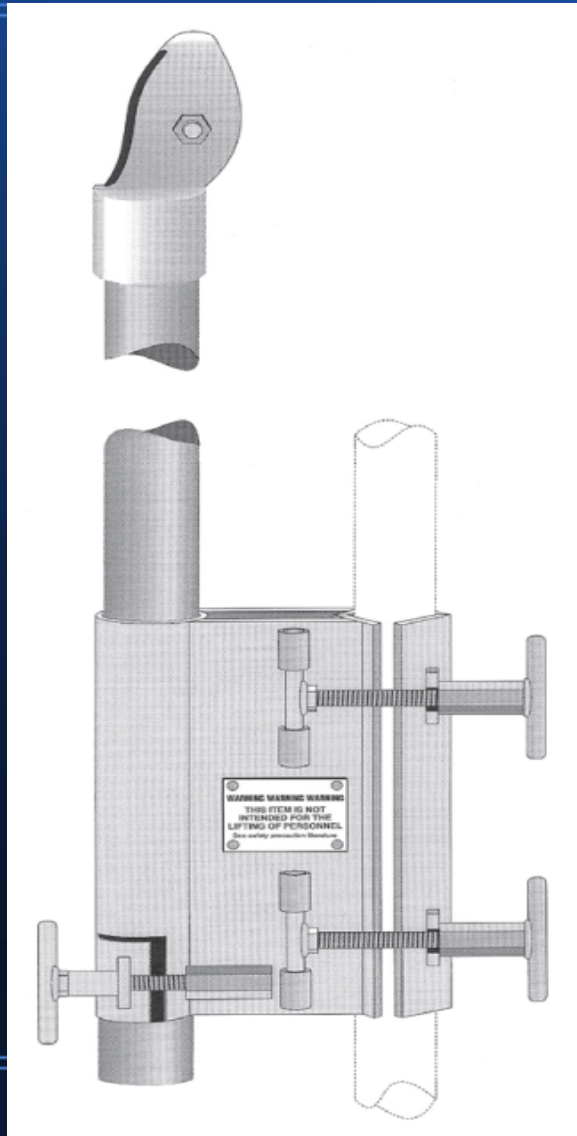
Tools & Tasks: Rigging

- A block and tackle is an arrangement of rope and pulleys that allows you to trade force for distance

- Rope
- Knots

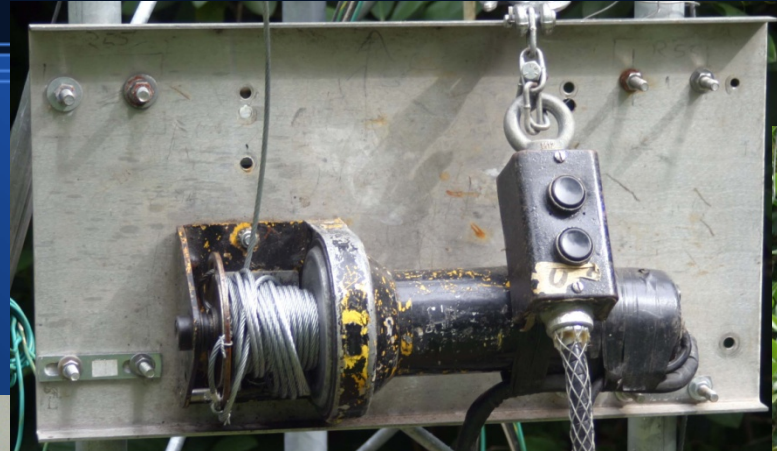
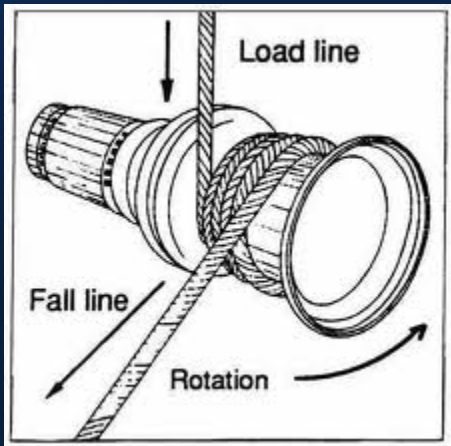


Tools & Tasks: Gin Pole



Tools & Tasks: Winches

- Drum Winch
- Capstan Winch



Tools & Tasks: Hand Tools



- Take Water always
- Snacks for a long tower session

Tools & Tasks: Tool Belts & Bags

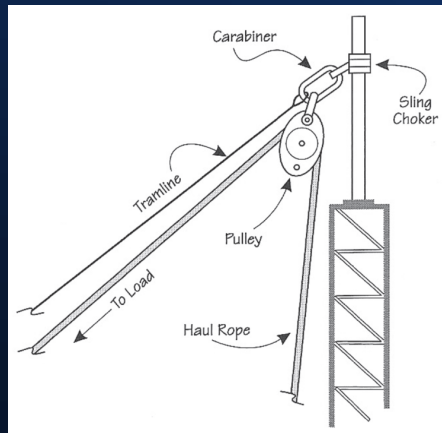
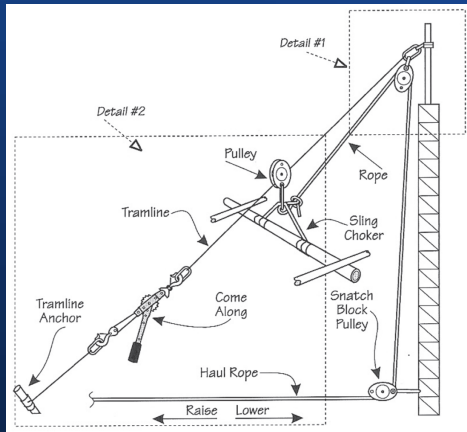


Tools & Tasks: The Climb

- Preparation: **Get in shape**
- Stretch First
- Climb with **Legs not Arms**
- Pause and **Rest Frequently**
- Breath deep
- Always wear **ALL PPE**
- Always Connected: **ALWAYS**
- No Exception



Tools & Tasks: The Work



- Use every possible method to make the work Easier
- Carry Slings for Load Management
- Slings are clips with a loop of Rope

Tools & Tasks: The Work



Tools & Tasks: The Work



Safety Equipment

- First Aid Kit
- Head Protection
- Foot Protection
- Hand Protection
- Eye, Ear, Skin Protection
- Equipment
- Clothing
- Communications

Safety Equipment: First Aid Kit



- Priceless when an accident happens
- Required by Fed Reg
- Consider including training on use and CPR

Safety Equipment:

PPE: Personal Protection Equipment

- Hard Hat

- Ground and Tower
- Should meet OSHA



- Foot Protection

- Reinforced Shank
- Ground Crew in Drop Zone



Safety Equipment:

PPE: Personal Protection Equipment

- Gloves are a must in all weather

- Protect your Tools

- Safety Goggles

- Ear Plugs

- Skin Protection

- Long Sleeves

- Long Pants

- Sun Screen



Safety Equipment: Equipment

- Power Tools: Ground Fault Protection
- Tethers for hand tools
- Use of Knives
- Secure tools and bolts when climbing
 - Professional Climbers say their goal is to Never drop anything from aloft

Safety Equipment: Clothing

- Appropriate to the Weather Conditions
- Balaclava
- Cold weather can be desirable



Safety Equipment: Communications

- Radio: HT or FRS
- Hand Signals
- Yelling :-)
 - Explain the difficulty hearing from aloft



Fall Protection

- Fall Restraint
- Fall Arrest
- PFAS: Personal Fall Arrest System
 - Anchor Point
 - Body Harness (or Body Support)
 - Connecting Device(s)
 - Deceleration Device

Fall Protection: **A**nchor Point

- The Tower is the Anchor Point
- Lanyards and Hooks
- Safety Cable



Fall Protection: **Anchor Point:** Tower

- Must be connected at **ALL** times



100% TIE-OFF STRETCH DECELERATOR LANYARD

Includes two (2) elasticized energy absorbing polyester web lanyards without packs.

Popular Models:

D11ELY6 – # 3155 locking snaphook each end, 6 ft. length

D11ELYZ6 – # 3155 snaphook one end, # 3100 other two (2) ends, 6 ft. length

D11ELY SERIES

AVAILABLE CONNECTORS

To order a connector other than a # 3155 snaphook on the anchorage end of a lanyard, put the ordering code (letter at bottom of each connector shown below) of the desired connector at the end of the lan-

yard's base Model #; i.e. D11EL6 with # 3100 snaphook becomes D11ELZ6. See page 20 for more detailed information on these connectors. Base Model # = Model # up to and including "L" on single leg lanyards, up to and including "Y" on 100% tie-off models.



- Two Step Automatic Locking



Fall Protection: **A**nchor Point: Lanyards



- Use two Lanyards to stay connected at all times
- You will develop a rhythm as you go up and down the tower

Fall Protection: **A**nchor Point: Lanyards

- Positioning Lanyards are NOT Anchor Points
- Use Anchor Point when performing work
- Set Anchor Point high while working
- Helpful to use rear D ring for working AP

Fall Protection: Anchor Point: Safety Cable System

- Always connected



Fall Protection: Anchor Point: Safety Cable System



Secure at top and Adjustable at bottom



Two part numbers required:

R-TT115303

R-TT115323

Catalog Sales Rohn Products LLC

Fall Protection: **B**ody Harness

6 D rings is best



Fall Protection: Connecting Devices

- At least Two Connecting Points
- Decelerator



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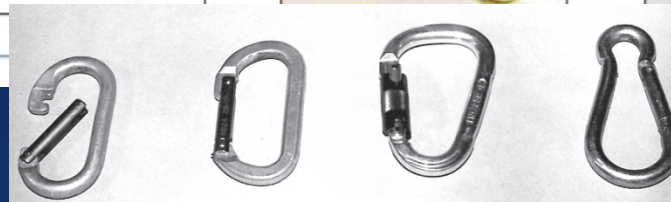
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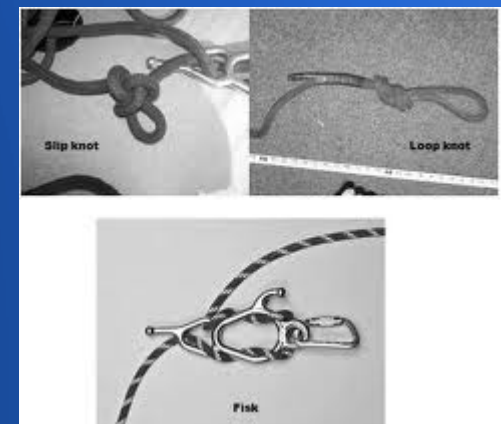
Fall Protection: **D**eceleration Device



- No Free Fall greater than 6 feet
- Not needed with Safety Cable System

Rescue

- Man Riding
- Controlled Descent
- Lines (Ropes)
 - Suspension and Safety
 - Load
- Use Rope Grab



Rescue: Man Riding



Administering Safety

- Safety Meeting
 - Doesn't need to take long
- Pre Climb Inspection
 - Guy Anchors (often overlooked)
 - Whole System
- Post Climb Recap
 - What can you improve for your next climb?
- Insist on safe climbing even if you hire someone else to do it.



Tower Climbing Safety & Rescue

- Thank you

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Text books for this certification are being sold by
ARRL at the booth here in Dayton

- Safety Belts by onvsafetybelt.com (W2JUQ)