

# Tower Climbing Safety & Rescue

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Presented to:  
Pottstown Area Amateur Radio Club

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# FIRST some Questions

- Where is the First Aid Kit
- Does everyone have a Hard Hat
- Where is the phone to call 911
- What is the Work Plan
- Has Someone Inspected the Anchor Points

# 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

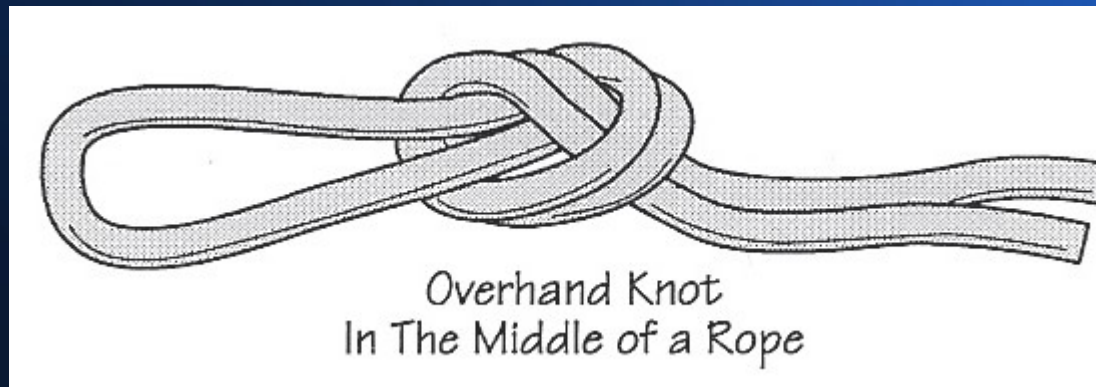


# Tools and Tasks

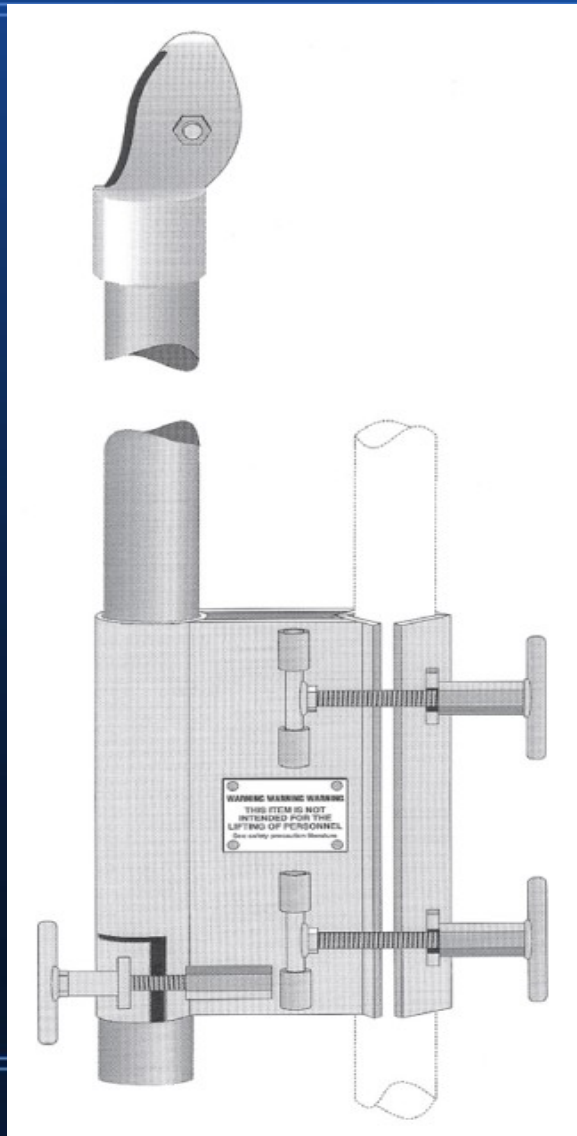
- Rigging
- Gin (Jin) Pole
- Winches
- Hand Tools
- Tool Belts / Bags
- The Climb
- The Work

# Tools & Tasks: Rigging

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



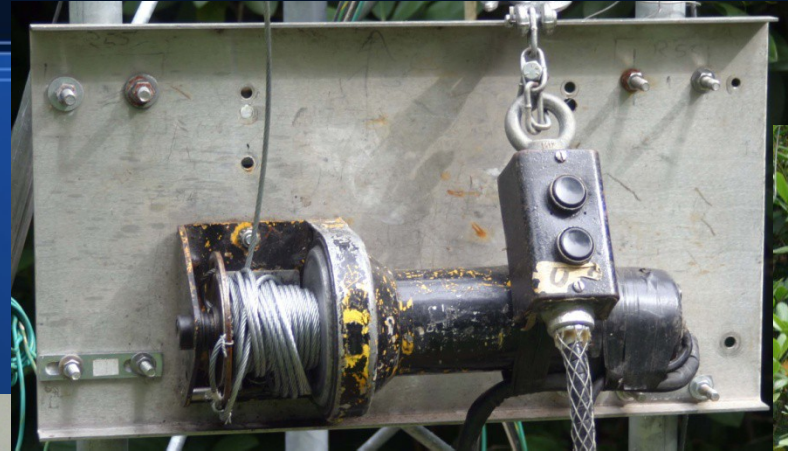
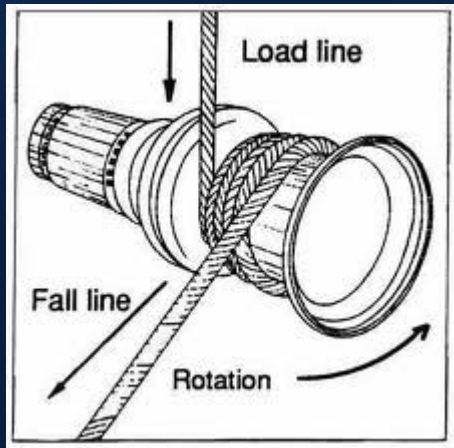
# Tools & Tasks: Gin Pole





# 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

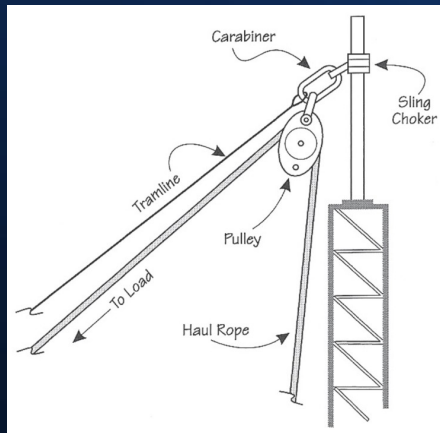
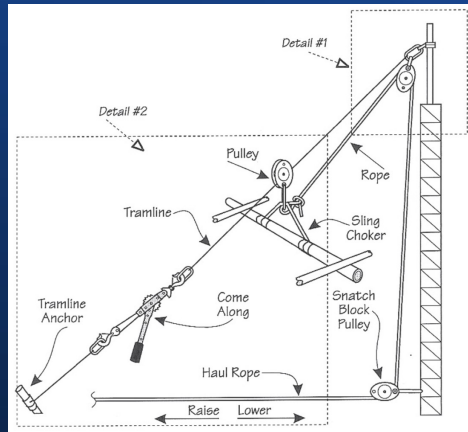


# Tools & Tasks: The Climb

- Preparation: **Get in shape**
- Stretch First
- Climb with **Legs not Arms**
- Pause and **Rest Frequently**
- Breathe 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
- Chin Strap
- 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: **Anchor 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 lanyard'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.

 <b>3155</b>	 <b>3100</b>	 <b>3129</b>	 <b>3131</b>	 <b>3154</b>
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- 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: **Anchor 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: **A**nchor 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: **C**onnecting Devices

- At least Two Connecting Points
- Decelerator



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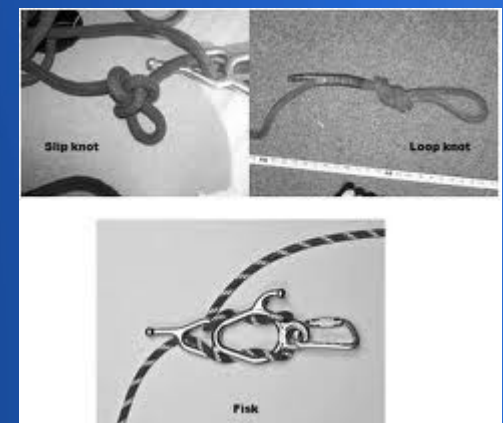
# Fall Protection: **D**eceleration Device



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

# Rescue

- Man Riding
- Controlled Descent (belaying)
- 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

- Safety Belts by [onvsafetybelt.com](http://onvsafetybelt.com) (W2JUQ)