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

Overhand Knot
In The Middle of a Rope
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: Anchor Point

- The Tower is the Anchor Point
- Lanyards and Hooks
- Safety Cable
Fall Protection: **Anchor Point: Tower**

- Must be connected at **ALL** times
- Two Step Automatic Locking
Fall Protection: Anchor 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:

**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: **Body Harness**

6 D rings is best
Fall Protection: Connecting Devices

- At least Two Connecting Points
- Decelerator

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

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.
Fall Protection: Deceleration 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)