

# Mobile Climbing Tower Facilitator Training Plan

National Capital Area Council, BSA

## 1 Syllabus

Lesson Plan Topic	Duration	Textbook Assignments
Getting Acquainted	0:20	
Climb on Safely Review	0:10	Climb on Safely
Council Policies & Standards	0:10	
Equipment control and record keeping	0:10	
Age and weight appropriate guidelines	0:10	
Site Management	0:10	
Effective Teaching Using EDGE	0:10	
Spotting	0:10	
Safety Measures and Accident Prevention (CHECK)	0:30	
Challenge by Choice/Setting Goals	0:10	
Dealing with Fear	0:20	
Emergency Procedures	0:40	
<b>Practicum</b>		
Warm-Ups & Initiative Games	0:20	
Tower Set-Up	0:30	Set up guide
Tower Climbing and Technique	1:10	Climbing Merit Badge
Tower Take-Down	0:30	Set up guide
Wrap up	0:20	
<b>Total Hours</b>	<b>6:00</b>	

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National Capital Area Council, BSA

## 2 Program

### 2.1 Getting Acquainted

Item	Detail	Time
Introductions	Introduce staff and training participants	
Youth protection	Review YPT as it applies to climbing towers/walls. It is a nature of the beast that at times adults must touch youth. If we have Instructors-in-Training (16-17) restricted to the Portable Tower they can be trained to assist with harnesses and helmets to alleviate some YPT issues.	
Climb on Safely	The guide is only a start. And it's a guide.	

### 2.2 Climb on Safely Review

Item	Detail	Time
Council vs Unit		
Qualified Instructor	Instructors-in-Training, Portable Wall/Tower Facilitator, COPE Instructor Level I/Level II, Climbing Instructor Level II, Climbing Director, COPE Director, ALL require training on Portable Towers.	
Questions?		

### 2.3 Council Policies

Item	Detail	Time
Goal of climbing tower operations.	Each participant should leave with a smile and in the same number of unbroken pieces as they started.	
Climbing as part of the Methods and Aims of Scouting	Climbing is a tool that we use to achieve the aims of Scouting. It contributes mostly to the points of self-esteem / growth in character in the development in physical, mental, and emotional fitness, but it also invites the Scouts to be participate as citizens (support one another). It is also part of the Outdoor Method.	
Council Structure	National Capital Area Council (NCAC) has a Climbing and COPE Committee which authorizes actions related to climbing. <b>Tony Waisanen</b> is the Program Manager for Climbing and COPE, and Chairman of the COPE committee. <b>James Miller</b> is the chairman of the Climbing committee. <b>Josh Clements</b> , the Ranger at Camp Snyder is in charge of NCAC's Portable Climbing Tower and its transportation. <b>Shirley Couteau</b> , Camp Snyder Director, is responsible for setting rental fees. <b>Eileen Walters</b> , Camp Snyder Admin, is the primary contact for scheduling rentals.	
Certification	The Portable Tower training certification will be valid for <b>one year</b> from the date it is awarded unless revalidated; the certificate holder demonstrates proficiency during at least one of the following: <ul style="list-style-type: none"> <li>operation of the Portable Tower a minimum of three times during the calendar year</li> <li>staff for at least one Portable Tower training session</li> <li>simulated Portable Tower operation during a Staff Field Day</li> </ul> All certifications are recorded with the National Capital Area Council. A facilitator must be a minimum of 21 years of age.	
Assistants	Youth 16 years and older may be Assistants. They must be directly supervised by an adult (over 21 years of age) who holds one of the required certifications. Youth less than 16 years of age may help Assistants and Facilitators, but they will be supervised by Assistants or Facilitators and only help with support functions (no life systems).	

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National Capital Area Council, BSA

## 2.4 Equipment Control and Record Keeping

Item	Detail	Time
Extra equipment	Keep all extra gear controlled, out of reach of crowds	
Counts	Count helmets and harnesses removed from and returned to bag	
Check equipment	Before each use, check harnesses for cuts or other mutilation. Check helmets for cracks, and straps for fraying.	

## 2.5 Age Appropriate Guidelines

Item	Detail	Time
Age appropriateness	The climbing tower is appropriate for Scouts of all ages; from Cubs to adults.	
Weight restrictions	The tower is restricted to participants from 40lbs to 250lbs. Participants under 40 lbs may climb, but should have a rope clipped to their harness so they may be assisted down. The hydraulics will let them down anyway, but very slowly. The device is not safe for heavy people.	

## 2.6 Site Management

Item	Detail	Time
Sequence	Participants and/or parents should queue in lines. Harnesses and helmets should be put on in preparation area outside safety zone.	
Routes	Each route is the “same” level of difficulty (though some are slightly more challenging than others).	
Sharing	If a participant wants a particular route, they can wait for it to clear.	
Keep-out zone	No one should access the blocked off area behind the erected tower.	
Authority	The climb master is the final authority. In lieu of the climb master, the assistant leader may act as the authority.	
Simple, clear directions give rise to intelligent behavior.	Quibbling with site authorities or failure to abide the restrictions imposed by the site authorities may result in the climber being prohibited from participating.	
Staffing	As appropriate, ensure everyone who is 16 or older has a job (etc., medical officer for attendees, quartermaster, photographer, cheerleader). When only a few have a job, the tower is an amusement ride.	
Program	What is the purpose and value? Structured program, recreational climb, practice? What makes your program worth your time and the time of the participants?	

## 2.7 Effective Teaching Using EDGE

Item	Detail	Time
EDGE	What do trainees need? And can you commit to addressing that need?	
Explain	Clear, simple words lead to complex, intelligent behavior.	
Demonstrate	Just because you can see and talk, does not mean I can observe and understand you.	
Guide	Commit the time, so I can commit to my memory.	
Enable	How can I be confident you will suspend judgement while I’m trying?	

## 2.8 Spotting

Item	Detail	Time
Stance	“Fighter’s feet”, elbows bent	
“Spoons”	Hands cupped, fingers together	
When	As climbers begin (less than shoulder high) and descend (break the fall)	
Who	Participants or youth staff	

# Mobile Climbing Tower Facilitator Training Plan

National Capital Area Council, BSA

## 2.9 Safety Measures and Accident Prevention (CHECK with Buddy System)

Item	Detail	Time
Clothes	Close-fitting clothes; preference is for loose, durable wear. Close-toed shoes with secure fasteners so footwear stays on during the climb. Anything loose (hair, jewelry) must be removed, fastened, or tucked in.	
Helmets and Harnesses	Helmets are worn face forward and adjusted to be just snug. Harnesses are worn with belay loop forward and red strap on right. Position and tighten the waist. <b>Then</b> clip and tighten leg bands. Verify that <b>all 3</b> clips are connected and free from clothing. Tuck excess harness material so as not to interfere with participant.	
Environment	Keep aware of the weather and effects. Close tower if it appears conditions will become dangerous (lightning, rain, wind) and contact tower management. Bring tower down if high winds exist <b>if you are trained and authorized to lower the tower</b> . Keep everyone warm.	
Connections	Make sure the locking carabineer is connected properly and gate is toward the climber, away from the tower (per Spectrum Sports, Int'l)	
Knots	Figure-eight-on-a-bight; used to pull small clients down or for Assistants or Facilitators to clip into in the event an intervention is required. This should be pre-tied and positioned to be ready for use.	

## 2.10 Challenge by Choice, Setting Goals

Item	Detail	Time
Challenge by Choice	The individual climber decides as to whether they put on the harness, attach to the cable, climb or decide to come down. It is not yours, their parents or the decision of anyone else. You may encourage them, but be careful that neither you nor anyone else puts too much pressure on them. The Climb Master or Assistant are responsible for choosing if the participant will be allowed to climb.	
Setting goals	Suggest students set at least one goal (for the session, for their role), but continue with the material regardless. The objective to set goals is personal. This is one place where they can come back next time.	
EDGE	Examples / practice	

## 2.11 Dealing with Fear

Item	Detail	Time
Dealing with the climber	Keep your composure. Make sure they know that they are safe. Keep a positive attitude and encourage them to carefully confirm they are safe.	
Dealing with the parent	Keep your composure. Make sure they know that you and your staff are in control and their child is your priority. What can the attending adults attest to regarding each child's medical and mental readiness?	

## 2.12 Emergency Procedures

Item	Detail	Time
Be prepared	Discuss scenarios	
Take a deep breath	Relax. Hasty action will result in complication and more problems.	
Check the area	Ensure that the rest of the area is safe. Assign other staff members or available adults as necessary to assist.	
First Aid	If a designated First Aid person is on site, check with him/her regarding policies for the event otherwise have a qualified First Aid person assist the participant/parent in applying first aid as needed and log incident.	
Serious Emergencies	Call 911 if a medical emergency exists unless EMTS are on site. Make appropriate notifications to inform appropriate Council leadership.	

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## 3 Practicum

### 3.1 Warm-Ups

Item	Detail	Time
Warm Ups	Warm ups help us stretch out our muscles and prepare ourselves physically for climbing. They also get our heart and lungs going.	

### 3.2 Tower Set-Up

See the checklist in section 4. *Operations Checklist*

### 3.3 Tower Climbing and Technique

Item	Detail	Time
Climbing	Participants should attempt to lift mainly with their legs, using their arms for balance.	
	Take small steps if possible	
	Rest by putting a hand below your waist and “shaking it out”.	
	Sometimes, you can reach sideways on a hold and push the other way with your foot; a “layback”.	
	Many climbers go for big holds far away making the climb more strenuous. A small hold that is closer is less strenuous.	
	Make a plan and execute it.	
	If you lean out a little bit, your feet will hold better.	
	There is a bell at the top for you to ring.	
	When you are ready to come down, lean back, hold onto the red rubber cable cover, and walk down the tower. Expect a short fall (6 inches or so) at first, but the cable will slowly lower you down. Do NOT bounce.	

### 3.4 Tower Take-Down

See *Operations Checklist* in next section

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National Capital Area Council, BSA

## 4 Operations Checklist

Part 1: [http://www.youtube.com/watch?v=PJq9TuQjqBM&list=UUdwBzCxAtmylnirNYou-c\\_g](http://www.youtube.com/watch?v=PJq9TuQjqBM&list=UUdwBzCxAtmylnirNYou-c_g)

### 4.1 Preparation

#### 4.1.1 Tower Set-Up [recommend wearing helmets and harnesses]

1. Ensure location is flat, free from overhead obstructions
2. Disconnect vehicle from trailer
  - a) Remove hitch pin, lift hitch release, replace pin in neutral position
  - b) Remove safety chains
  - c) Remove breakaway safety line
  - d) Remove 7-pin plug
  - e) Remove pin on jack extension leg and lower as far as possible
  - f) Replace jack pin and use jack to lift trailer clear of vehicle
3. Extend jacks, ensuring trailer is elevated and trailer is level.
  - a) Remove pin on **rear** jack extension tube and slide out.
  - b) Line up holes and replace pin
  - c) Remove pin on jack leg (bottom) and lower as far as possible.
  - d) Begin to raise trailer off the ground (turn handle anti-clockwise on starboard-side jack, clockwise on port-side jack)
  - e) Raise trailer until steel “skids” on frame by the jacks are 12” off the ground, alternating between jacks to ensure trailer is relatively level (or have team of two).
  - f) Remove pins from **side** jacks, rotate, replace pins, and extend jacks (turning clockwise).
4. Remove restraining strap from top of the tower
5. For the cables on the sides of the tower, pull cables to the bottom of the tower
  - Recommend using loops of rope connecting the connector **above the locking carabiner** to staff’s climbing harness to pull the cable to the eye-bolt at the bottom of the tower.
6. For the two cables on the top side of the tower, connect an end of a climbing rope to each carabiner. Ensure the rope can touch the ground when the tower is elevated. **Do NOT climb on the tower.**
7. Retrieve remote (in locked storage box attached to trailer; key is clipped to the binder of standards).
8. Unscrew the cover to the remote receptacle (driver’s side of the trailer near the rear of the tower)
9. Insert remote, lining up pins (notch is on top) and carefully aligning threads. Twist to tighten.
10. Ensure everyone is clear of sides and rear of the trailer.
11. Press “UP” on the remote to raise the tower in a **continuous** motion.
  - a) **CAUTION: The tower will “bounce” each time the button is released. Bouncing increases likelihood of damage to the tower structure and hydraulics.**
  - b) Continually ensure against overhead obstructions.
  - c) Continually ensure the bottom edge of the tower is high enough to clear the ground.
  - d) Bring tower to vertical (90 degrees to ground)
12. Remove remote and secure it (in locked storage box)
13. Replace receptacle cover and hand tighten only to “snug”.
14. Lower jacks evenly until full weight of tower is resting on the bottom “A” frame
15. Pull down the middle two cables and connect the locking carabiners to the appropriate eye-bolt.

#### 4.1.2 Pre-Climb Inspections

1. Check oil level (in spot glass) on each auto-belay
2. Check air pressure gauge on each auto-belay and ensure reading is 85-95 PSI (if necessary, add air via port beneath gauge)
3. Check each route for resistance by pulling on cable covering (“hose”) while carabiner is connected.
4. Prime the auto-belay by raising the cable high above your head and pulling down until you feel it “bottom out”. Continue 2-3 times or until you feel consistent resistance from the auto-belay.
5. Put on climbing harness (next section).
6. For each route, climb 10’ and return to ground (to simulate a fall). **Disable the route if auto-belay does not arrest the fall.**

# Mobile Climbing Tower Facilitator Training Plan

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Part 2: [http://www.youtube.com/watch?v=4OT\\_8yZvfPQ&list=UUdwBzCxAtmylnirNYou-c\\_g](http://www.youtube.com/watch?v=4OT_8yZvfPQ&list=UUdwBzCxAtmylnirNYou-c_g)

## 4.2 Harness Operation

1. Undo all (3) buckles (one waist, two leg).
2. Pull black straps around the waist.
3. Buckle and pull strap tight.
4. Twist the harness around the body so the waist buckle is in the back and belay loop is in the front.
5. Pull the red strap around the leg being careful not to twist the strap.
6. Buckle and pull the strap tight being careful to keep the buckle free from clothing or debris.
7. Repeat for the other leg.
8. Remove carabiner from eye-bolt on selected route by pushing the gate lock away, then twist.
9. While holding carabiner open, attach to belay loop with the gate towards the climber.

## 4.3 Operation

1. Climbers must stay in their designated routes. Climbing off-route could cause the auto-belay cable to bind in the pulley. [Anyone disobeying may be rejected immediately.]
2. Be sure auto-belay system is taking up all slack.
  - a) **Stop climbing and CLIMB down if slack develops.**  
Close the route. Check for problems **AFTER** the event (e.g., low air pressure, cable has slipped of a pulley)
  - b) Climb until even with the klaxon button; stay **OFF** the top
3. To descend, hold onto the rubber tube and walk down the tower
  - a) Stay within 2' of the tower
  - b) Be smooth, avoid rebounding (rappelling is in the Climbing program)

## 4.4 Take-Down

### 4.4.1 Prepare tower

1. For each auto-belay cable, thread a rope through the carabiner and allow the auto-belay to pull the carabiner to its pulley at the top of the tower, being careful to keep the cable in the pulley's sheave.
2. Raise rear jacks until the frame of the tower is 2"-3" off the ground.
3. Retrieve remote (from locked storage bin), connect, ensure everyone is clear of back and sides of trailer, and lower tower by pressing "DOWN"
  - a) Be sure there is enough room for the corner of the tower to clear the ground as it lowers.
  - b) Be sure the trailer is clear of all items and people
  - c) Continue holding the "DOWN" button until the tower firmly connect with the trailer.
4. Remove remote, and replace the receptacle cap.
5. Run side cables to top of the wall for transit.
6. Secure carabiners to eyebolts for transit.
7. Secure top of the tower to the trailer with the safety strap
8. Retract side jacks, remove pins, rotate jacks, and replace pins.
9. Fully raise the rear jacks, remove vertical pins, insert legs fully into the frame, and replace pins.
10. Remove horizontal extension pins at bottom of jack, fully push up jack, and replace pins.

### 4.4.2 Attach to vehicle

1. Lower trailer onto vehicle.
2. Remove jack extension pin, slide up jack fully, and replace pin.
3. Attach round, 7-pin electrical plug being careful to have **no more than 1'** of hanging slack.
4. Connect safety chains
5. Connect breakaway
6. Remove pin, engage hitch, replace pin

## 4.5 Mobile Climbing Tower Operators Guide

[http://spectrumsports.com/wp-content/uploads/documents/mobile\\_climbing\\_tower\\_manual.pdf](http://spectrumsports.com/wp-content/uploads/documents/mobile_climbing_tower_manual.pdf)