

Trailer Tower Setup Instructions
With Guy Wires
(Includes Guying to Outriggers)



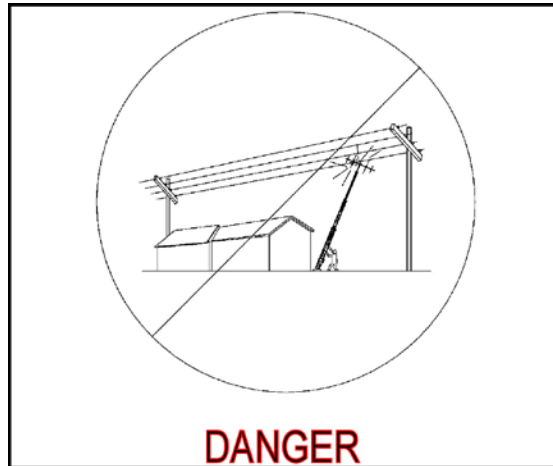
To be used for the following trailer models:

- TM-12
- TM51-20LT
- TM51-35
- TM52-60
- TM51WA35-EB4S6
- TM52WA60-EB4S7
- TM61WA80-EB4S8
- TM61WA812-EB4S812

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TOWER SETUP INSTRUCTIONS WITH GUY WIRES

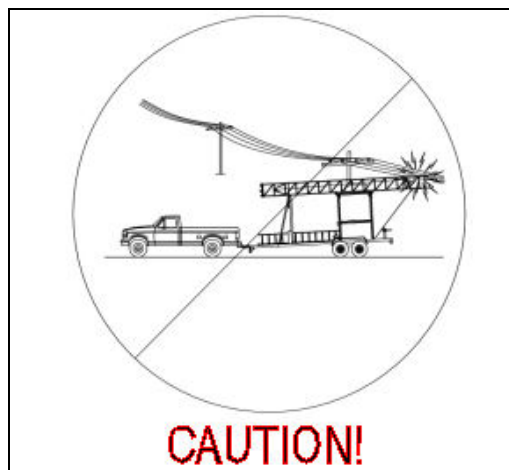
CAUTIONS AND WARNINGS



⇒ **NEVER** setup the tower within 120 feet of a power line.



⇒ **NEVER** attempt to climb your tower under any circumstances. Always lower tower completely and access your tower by use of a suitable ladder. The rungs cannot support the weight of a person.



⇒ **ALWAYS** tow the trailer in a level position to meet height restrictions. Adjust

coupler height as needed.

- ⇒ **ALWAYS** insure your tow vehicle and hitch capacity are suitable for the trailer you are towing. These items must be rated according to the GVWR on the V.I.N. decal on the front of your trailer tower unit.
- ⇒ **NEVER** overload your trailer or the tongue of your trailer. The GVWR noted on your V.I.N. decal is the maximum loaded weight of your trailer tower unit.
- ⇒ **ALWAYS** evenly distribute your load to maintain safe handling conditions when towing your trailer tower unit (see “Weight Distribution” notice)
- ⇒ **ALWAYS** maintain the proper tire pressure according to the specification decal located on the front of your trailer tower unit
- ⇒ **NEVER** tow the trailer with the outrigger jacks in place. Remove them and stow on rear frame or in storage box.
- ⇒ **BEFORE** transporting trailer/tower check to see that both, the tower hold down cable and the “Red Strap” at the rear bottom end of the tower are in place and secure.
- ⇒ **WHEN** transporting trailer and tower, drive within the speed limits and do not exceed 55MPH.

Getting Ready to Transport

After hooking up the trailer to the tow vehicle, fully retract the front tongue jack and lock it into the travel position (*see Fig. 1A or 1B*).

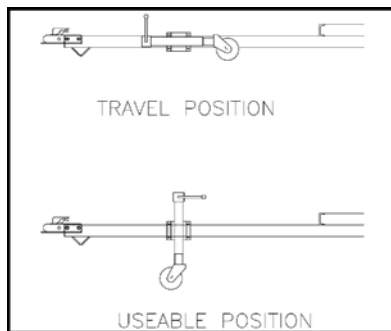


Fig. 1A Tongue Jack Positions

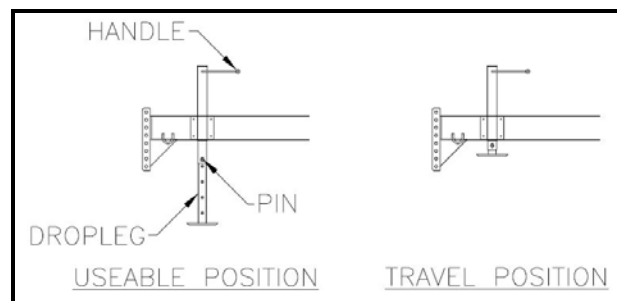


Fig. 1B Dropleg Tongue Jack Positions

Attach the hooks on the safety chains to the tow vehicle frame. Be sure to cross the chains under the coupler and leave enough slack for turning (*see Fig.2*). Hook up the trailer lights by plugging the connector into the receptacle on the tow vehicle. Check all lights (Brake, Stop, and Running) to see that they are functioning properly. If using electric brakes, check to see that they are properly connected and that the brake controller is in proper working order. Next, hook up the small wire cable that operates the breakaway brake control (*see Fig. 3*).

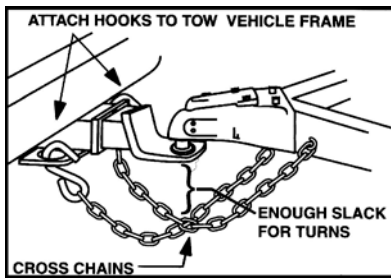


Fig. 2 Proper Safety Chain Hook Up

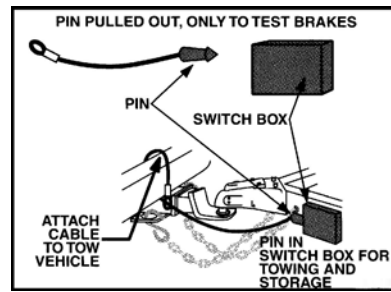


Fig. 3 Proper Breakaway Cable Hook Up

POSITIONING THE TRAILER/TOWER

1. Locate the Trailer/Tower unit in a place that will allow the following radius around the tower: 70 foot radius for the T-100H & T-100UGH towers; 60 foot radius for T-85UGH tower; 55 foot radius for the T-75H tower; and a 40 foot radius for the T-50H tower. Mark the location (120 degrees apart) of each anchor point (*see Fig. 4*). Refer to the enclosed appropriate guy wire drawing specifications for your specific model. As an alternate, the Model GA-1 or GA-2 helical screw type guy anchors or CGA-1680 concrete type ground anchors can be used.

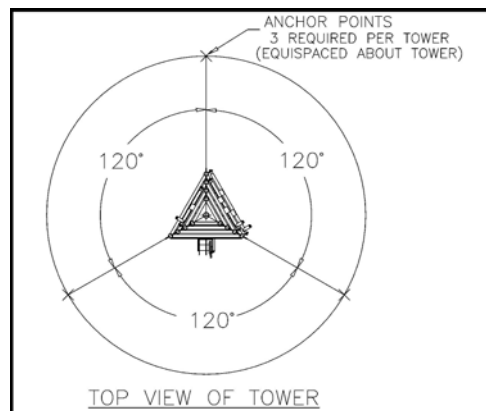


Fig. 4 Standard Guy Wire Anchor Points

2. The tow vehicle must now be uncoupled from the unit. Remove the safety pin and unlatch the coupler. Either swivel and lock the front tongue jack into the useable position and crank it down so the tow vehicle can be moved away (*see Fig. 1A*) **OR** pull the pin on the dropleg jack and allow the leg to drop to its lowest position. Realign the through holes and reinsert the pin. Crank it down so the tow vehicle can be moved away (*see Fig. 1B*). Disconnect the safety chains, light connector cable, and breakaway cable from the tow vehicle.
3. Remove the two hitch pins that hold the rear “outriggers” in the stowed position. Carefully pull them out until the second set of pinholes is visible. Then reinsert the pins with the outriggers in the extended position (*see Fig. 5*). Repeat for the front “outriggers”.

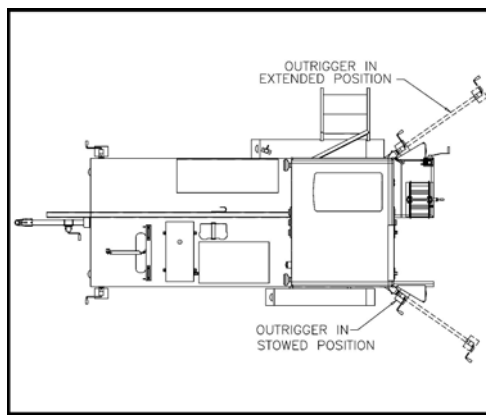


Fig. 5 Outrigger Positions

4. Remove jacks from storage box and install two jacks on the front outriggers and two jacks on the rear outriggers of the trailer.
5. Level the trailer by using the four jacks and the bubble levels as a guide. (On models that include a shelter, the bubble level is located on the rear corner of the shelter and for units without a shelter, the bubble level is located on the rear upright tower support).

ATTACHING THE ANTENNA, COAX CABLE AND GUY WIRES

1. For the Tower Models T-BD-135 & T-BD-150 (Standard Duty Tower):
Loosen the two U-bolts that hold the mast in place and slide it up so that approximately 18" is still in the tower. Tighten the U-bolts (do not over tighten).
2. For the Tower Models T-BD-35H, T-BD-50H, T-50H, T-50XHD, T-50XXHD, T-75H, T-75XHD, T-85UGH, T-100H, & T-100UGH:
Remove the thru bolts from the upper and lower mast adaptor plates. Insert mast through upper plate mast adaptor. Slide mast into lower plate mast adaptor until it is fully seated against plate. Turn mast to align bolt thru holes. Reinsert bolts and fully tighten nuts.
3. Feed the coax cable through the middle of the smallest section and on up through the mast at the top of the tower.
4. Mount the antenna to the mast per the manufacturer's specifications and connect the coax.
5. Attach the color coded ends of the guy wires to the corresponding color coded guy ears at the top of each section of the tower, using the screw pin shackle (*see Fig. 6*). Be sure to tighten the screw pin shackle with a wrench. Lay the appropriate sets of three each guy wires in the general direction to which they will be anchored. (*see Fig. 4*). See below if "***Erecting the Tower at Less Than Full Height***".

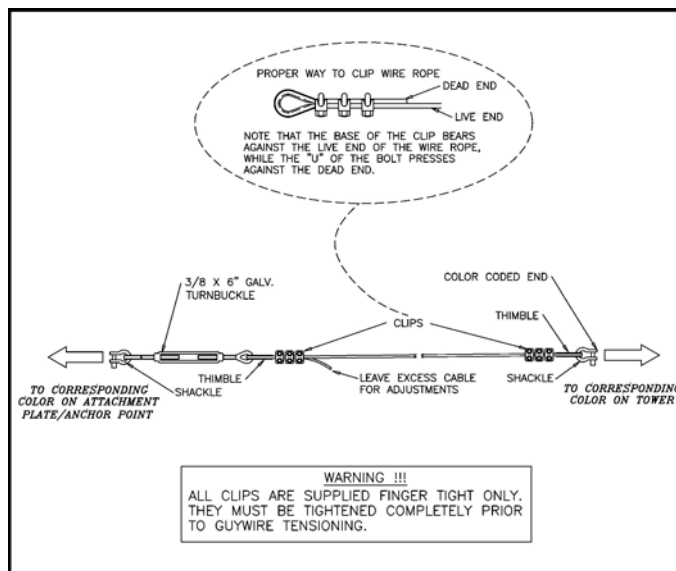


Fig. 6 Proper Guy Wire Configuration

6. **IMPORTANT!** Check winch cable and insure the cable is properly seated on each pulley sheave. Using the winch, apply tension to the winch cable **BEFORE** tilting to the vertical position. *This will keep the cable properly seated on the sheave and keep the pulleys from being damaged.*

ERECTING THE TOWER AT FULL HEIGHT

1. While the tower is still in the horizontal position, loosen and remove the hold down restraining cables that hold the tower in place for transporting. These cables are located on the front support of the trailer and/or shelter(see Fig. 7). **NOTE:** There may be more than one hold down cable at varying locations, depending on your specific model.

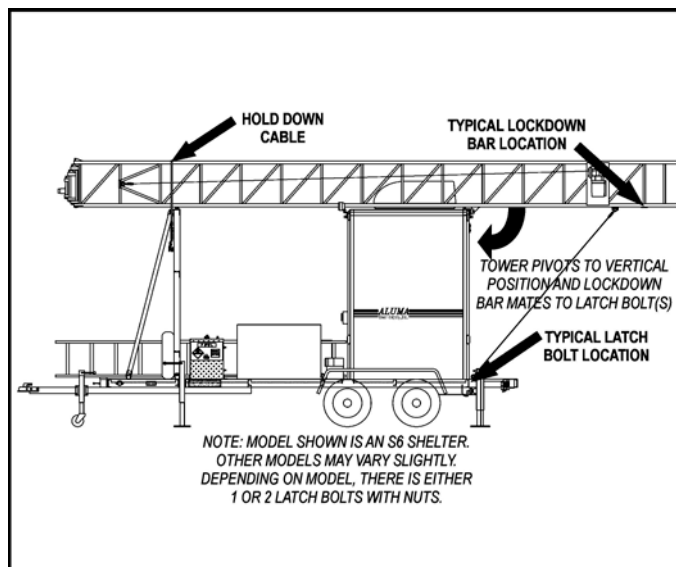


Fig. 7 Trailer Tower Component Locations

2. Using the manual brake winch on the rear support, crank the tower from the horizontal to the vertical position. At the halfway position undo the nut(s) from the latch bolt(s) at the bottom rear of the trailer frame (*see Fig. 7*).

NOTE: Sufficient load must be applied to the cable to overcome internal resistance and operate brake properly. *NEVER CONTINUE TURNING THE HANDLE COUNTER-CLOCKWISE IF THE CABLE DOES NOT KEEP MOVING OUT.* This will disengage the brake mechanism and create an unsafe or hazardous condition.

MINIMUM OPERATING LOAD REQUIREMENTS - MODEL 5351 - 75 lbs.

Failure to read and apply the instructions and warnings contained in this manual can result in sudden failure of equipment, property damage and serious injury.

3. Secure the tower in the vertical position with the tower lockdown bar pivoting over the latch bolt(s) on bottom of rear trailer frame (*see Fig. 7*). Tighten the nut(s) with wrenches supplied in tool kit, TM-TK which is stored in the #664 or #684 storage box. Drive all three “Duckbill Ground Anchors” into the ground as described in the attached instructions, AT-418-1.
4. Take the loose end of the three lowest guy wires and attach them to the ground anchors. Tighten only the lowest set of guy wires. The turnbuckles should be adjusted to the fully extended position for maximum adjustment. Recheck the bubble levels to be sure the trailer is still level. Also use the 4-foot level to further check to see that the tower is as level and plumb as possible. If tower is not level, readjust the jacks on the trailer to re-level trailer.
5. **IMPORTANT:** Undo the Red Safety strap from the bottom of the tower and remove it from the inner sections. It is necessary for this strap to be removed. The power winch raising the tower is capable of damaging the tower if this strap is not removed. *Please note that this strap is used to keep the tower from telescoping out on its own when in the transport mode.* Additionally, you should pull the orange safety stop release cord to insure the safety stop releases properly before raising the tower.
CAUTION ! Do not attempt to raise tower in winds over 10 mph. Even in winds between calm and 10 mph there **MUST BE** a person at each of the Guy Wires to insure that the WIRES are kept taut.
6. Raise the tower to the desired height. The safety stop engages at a rung approximately every 20 inches. Remember that the electric winch is capable of damaging the tower, so be alert to any unusual noises or signs that may indicate that you are doing damage to the tower. **Do not try to overextend the tower.**

The tower is fully extended when the black and orange tape bands on the vertical legs of the outer section are aligned with the bands on the inner section. When at maximum height, the rung marked with orange reflective tape is just above the safety stop mechanism, allowing the safety stop to rotate under this rung. The safety stop is located at the top of the lowest section. Allow the tower to lower until the inner section rung, marked with orange reflective tape, rests on the safety stop. Winch cable will slacken when this occurs. **Serious damage will occur if overextended!**

7. Snug the remaining guy wires by starting at the lowest set. Be careful in tightening the wire and check to be sure the tower remains aligned and level. The lowest set of guy wires can be tightened securely; the remaining sets should only be snugged loosely.

THE TOWER IS NOW READY FOR USE.

ERECTING THE TOWER AT LESS THAN FULL HEIGHT

In some instances, erecting the tower at less than it's full height may prove to be adequate for desired communications. **NOTE:** *All of the color coded guy wires **WILL NOT** be attached to the corresponding color coded guy ears when using this method.*

1. For the Tower Models having 3 sections:
Attach the blue color coded ends of the guy wires to the corresponding blue color coded guy ears at the top of the bottom section of the tower. Attach the **yellow** color coded ends of the guy wires to the **red** color coded guy ears at the top of the top section of the tower, using the screw pin shackle (*see Fig. 6*). Be sure to tighten the screw pin shackle with a wrench. Lay the appropriate sets of three each guy wires in the general direction to which they will be anchored. **(DO NOT attach guy wires to the middle section of the tower).**

Continue with directions ***“Erecting the Tower at Full Height”*** with one exception; stop raising the tower when the top guy wires become taut. **Do not over extend the tower.**

2. For the Tower Models having 4 sections:
Attach the green color coded ends of the guy wires to the corresponding green color coded guy ears at the top of the bottom section of the tower. Attach the **blue** color coded ends of the guy wires to the **red** color coded guy ears at the top of the top section of the tower, using the screw pin shackle (*see Fig. 6*). Be sure to tighten the screw pin shackle with a wrench. Lay the appropriate sets of three each guy wires in the general direction to which they will be anchored. **(DO NOT attach guy wires to the middle section of the tower).**

Continue with directions ***“Erecting the Tower at Full Height”*** with one exception; stop raising the tower when the top guy wires become taut. **Do not over extend the tower.**

LOWERING THE TOWER

1. To start the procedure of lowering the tower, it is first very important to slacken all guy wires except the lowest set. Crank the tower up slightly to allow the safety stop to swing out of the way. The safety stop is controlled by an orange cord attached to one leg of the tower. After the tower has been cranked up slightly, pull the orange cord until the safety stop clears the rung above it. Start lowering the tower while keeping tension on the orange cord. The safety stop must be kept out of the way for the complete lowering of the tower.
2. After the tower has been lowered to the retracted position, **be sure to** reattach the **“Red Safety Strap”** around the inner section(s).

3. Remove guy wires from anchors while still in vertical position.
4. Remove the nut from the latch bolt on tower lockdown bar. Be sure to retighten the nut with a wrench so that it will not vibrate loose while transporting. Push the tower away from the trailer while playing out the cable from the winch.

Sufficient load must be applied to the cable to overcome internal resistance and operate brake properly. NEVER CONTINUE TURNING THE HANDLE COUNTER-CLOCKWISE IF THE CABLE DOES NOT KEEP MOVING OUT. This will disengage the brake mechanism and create an unsafe or hazardous condition. MINIMUM OPERATING LOAD REQUIREMENTS - Model 5351 - 75 lbs.

Failure to read and apply the instructions and warnings contained in this manual can result in sudden failure of equipment, property damage and serious injury.

5. Lower the tower to the horizontal position and secure the tower with the hold down cable. Be sure locking mechanism on cable is engaged. Remove the coax cable, antenna, guy wires and put mast in towing position.
6. Remove all guy wires and carefully coil and return them to their color-coded pouches. If you choose to remove the Duck Bill ground anchors this can be readily accomplished by digging straight down over the head with a post hole digger or shovel and then pulling back on the eye towards the hole.
7. Raise the front leveling jacks until the weight is on the tongue jack. Remove the front leveling jacks and stow them in the storage box.
8. Remove the rear outrigger leveling jacks and stow them in the storage box. Remove the hitch pins from the outriggers and slide them in to their stowed position and reinsert the hitch pins.
9. You are now ready to hook up the trailer to the tow vehicle. Once again recheck all securing straps and safety wires. Repeat procedure for ***“Getting ready to transport”***.

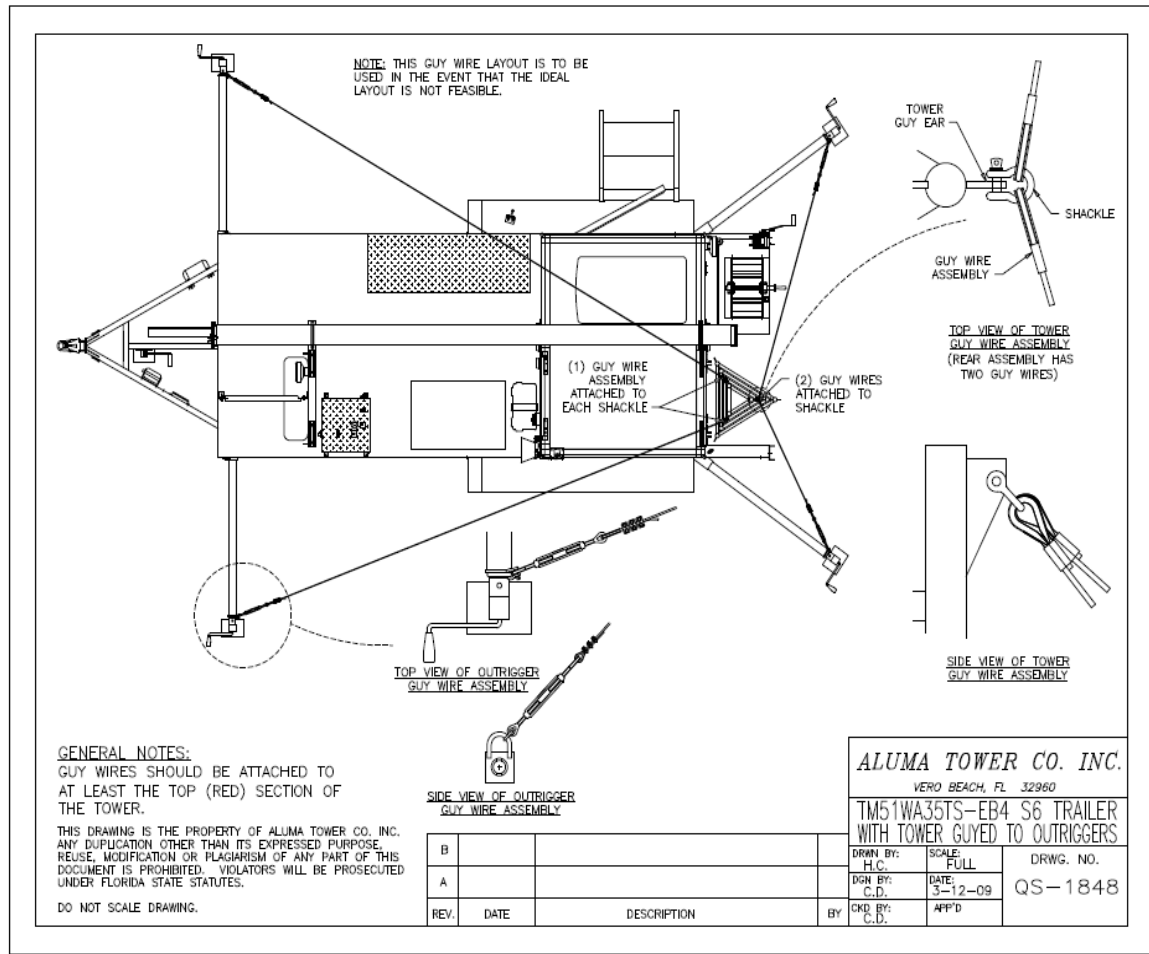
If you choose to guy trailer tower unit model number S6, S7, S8, or S812 with “XXHD”, “XHD” or “H” series towers to the outriggers please follow these recommendations (See Aluma Drawing QS-1848 below for details):

- a) Slide out the two front and two rear outriggers, connect the leveling jacks to outriggers, and use them to level out the trailer.
- b) Inspect all pulleys and cables. Make sure cable is running in the center of every pulley sheave. Remove front upright and shelter safety straps.
- c) While the tower is in the stowed/horizontal/transportable position, use shackles to connect red guy wires or guy wires for the top section to the guy ears located at the top of the top tower section. The red or top section should contain 4 guy wires. Make sure that the tower legs that are attached to the shelter receive individual guy wires. Attach a shackle to the leg of the tower furthest from the shelter and connect two guy wires to that single shackle.
- d) Remove nuts from latch bolts at the bottom rear of the trailer chassis.

- e) Using the manual brake winch on the rear support, crank the tower from the horizontal to the vertical position. Make sure tower is leveled and re-attach nuts to latch bolts located at the bottom rear of the trailer.
- f) Remove red color safety strap located at the bottom of the tower.
- g) Make sure the wind does not exceed 10-15mph prior to erecting the tower.
- h) Remove slack from cable on lifting winch by raising the tower few inches. Once again inspect all pulleys and cable. Make sure cable is running in the center of every pulley sheave.
- i) Make sure no object is blocking the path of the sections before raising the tower.
- j) Start to raise the tower. Listen for any abnormal sounds from the winch. If one occurs stop raising the tower and look for problem areas.
- k) Erect the tower to 65' to the top of the tower section and 70' to the top of the mast.
- l) Use the two guy wires connected to the legs of the tower connected to the shelter and attach them to the outriggers located at the front of the trailer. Connect the two guy wires attached to the single tower leg furthest from the shelter to the two rear outriggers. Apply approximately 100 lbs of pretension to each guy wires and tighten the cables on the turnbuckle. Please use the level in the tool box to make sure the tower is leveled.
- m) The T-100H tower at this point can handle maximum payload of 125 lbs, 18sq/ft of antenna surface area in wind gusts up to 35 mph.

LOWERING THE TOWER WHEN TOWER IS PARTIALLY RAISED

- a) Detach all guy wires from outriggers.
- b) Raise tower couple of inches.
- c) Bypass safety stop.
- d) Make sure no objects block the path of the sections as they are lowered.
- e) Quickly inspect the pulleys and make sure the cable sits perfectly in the sheaves.
- f) Lower tower carefully.
- g) When tower is completely retracted, re-attach the red safety strap located at the bottom part of the tower.
- h) Remove nuts from latch bolts at the bottom rear of trailer chassis.
- i) Use the brake winch to provide enough slack on the cable to pull the tower away from the latching bolts. Lock the brake winch; do not stand directly behind the tower when you pull the tower back and away from latching bolts.
- j) Use the brake winch to lower the tower to the travel/horizontal position.
- k) Re-connect the safety straps to the tower and shelter and also to the front uprights.



NOTES:

APPROVED FINAL REVISION OCTOBER 10, 2006

REVISED TO INCLUDE "ERECTING THE TOWER AT LESS THAN FULL HEIGHT" AND TO REFLECT USE OF B-930 LOWER PLATE JANUARY 18, 2007

ADDED DO NOT CLIMB WARNING AND REFERENCE TO ORANGE REFLECTIVE TAPE ON SAFETY STOP RUNG. ALSO CHANGED NYLON CORD TO ORANGE CORD FOR SAFETY STOP DISENGAGEMENT DECEMBER 18, 2007

ADDED ALWAYS TOW LEVEL, ALWAYS INSURE VEHICLE & HITCH ARE PROPERLY RATED, NEVER OVERLOAD, ALWAYS EVENLY DISTRIBUTE, & ALWAYS MAINTAIN PROPER TIRE PRESSURE TO CAUTIONS AND WARNINGS SECTION DECEMBER 21, 2007

ADDED ITEM 6 UNDER "ATTACHING THE ANTENNA, COAX CABLE AND GUY WIRES" JUNE 30, 2008

ADDED "WITH GUY WIRES" TO TITLE TO DIFFERENTIATE FROM

***“UNGUYED” VERSION OF SETUP INSTRUCTION, CLARIFIED
MISCELLANEOUS VERBIAGE, ADDED VERBIAGE FOR DROPLEG JACKS,
FRONT OUTRIGGERS AND T-85UGH & T-100UGH TOWERS
APRIL 17, 2009***

***ADDED INSTRUCTIONS ON GUYING TO THE OUTRIGGERS WITH THE
TOWER ERECTED AT 70’ FOR ALL SHELTER TRAILERS WITH “H”, “XHD”
OR “XXHD” SERIES TOWERS
JANUARY 5, 2010***

***ADDED “INCLUDES GUYING TO OUTRIGGERS” TO TO TITLE PAGE TO
DIFFERENTIATE IT FROM OTHER MAUALS
MAY 26, 2010***

***ADDED TESTING SAFETY STOP RELEASE VERBIAGE TO #5 UNDER
“ERECTING THE TOWER AT FULL HEIGHT”
JANUARY 10, 2012***