



Korber Models

Scale Model Railroad Structures

165 E Main Street
Atlanta, IN 46031 USA
765-292-2044

www.korbermodels.com

Model 703 O Scale Radio Station & Tower

Instructions

Compiled by: Rich Redmond, Alex Muller

Introduction

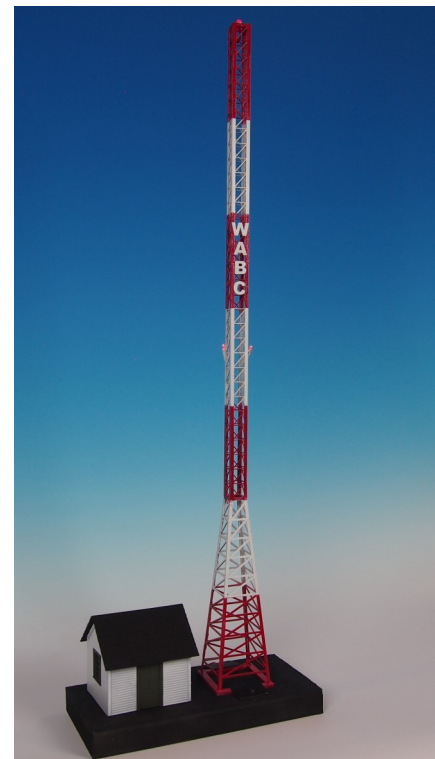
Congratulations, you have purchased the Korber Models #703 Radio Station & Tower. The Radio Station & Tower kit is one of the new line of Korber O Scale kits. Radio stations touch our lives every day, and now one can be a part of your layout. This kit represents the thousands of radio stations that cover the country, big city or small town, and is right at home from the steam to modern era. This kit can also easily represent a television station.

You can follow the simple, step by step instructions outlined in this document to easily assemble this great looking addition to your layout. We have covered required key steps to build the structure so you can get it on your layout the quickest and some extra details you can add.

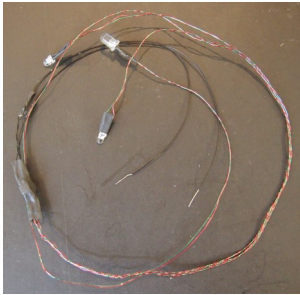
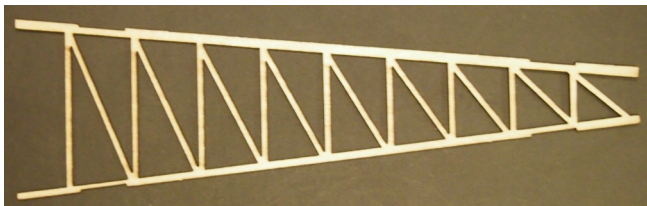

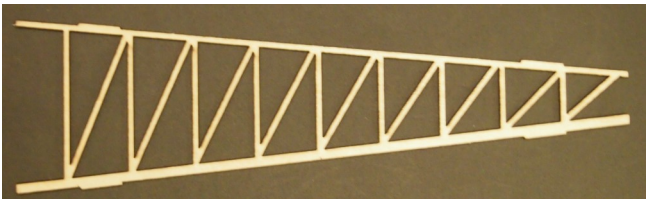
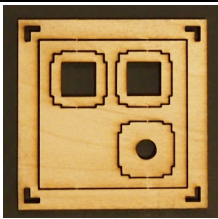

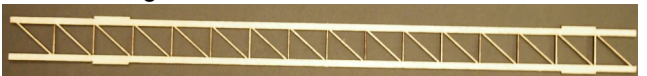
Before you start you may want to read through the instructions to get a feel for the things you will be doing, and the basic order in which they will be done. You are on your way to adding a centerpiece to your layout, so let's get started!

Parts list – (What's in the box)

Take a few minutes to locate all the parts in the box to make sure you have all the pieces you will need and that the quantities are right. You may also want to spread these parts out so that you have a small separate stack of each part and make it easy to find each as you start the assembly process. If you are missing anything, please contact us so we can get you any of the missing items.



Qty	Description	Qty	Description
2	Side Wall	1	Back Wall
2	Roof Section	1	Front Wall w/ door opening
2	Windows	1	Front Door with Frame

Qty	Description	Qty	
1	Red LED assembly for tower  Includes top flashing LED and two side constant on red LED Operates on 7-19 volts AC or DC	2	Tower tapered section with notches 
1	Letter and Number set 	2	Tower tapered section with tabs 
1	Tower base (outside band) Top and two mid section joining plates  (will need to use razor knife to separate)	4	Tower straight section with notches 
		4	Tower straight section with tabs 

Materials needed – (What else might I need that is not included)

The Korber Radio Station & Tower, like any kit, requires a few additional items to complete the construction. We have included a list here, including some color and brand suggestions based on our experience; however you may use any product that fits the function. Please also note that some items are listed as options such that they either make assembly simpler, or are needed only for optional steps

- Spray paint for main structure, doors, windows, trim (RustOleum camouflage flat spray paints work well for the trim) Krylon White for white bands of the tower, and Color Place (Walmart) Red for the red bands
- Cyanoacrylate (CA) glue—also known as super glue, Gorilla™ super glue works well
We really like the new Gorilla brand super glue because it is thicker than most super glues, and allows you to put it on a seam while holding the part in your hand, and will not run when you turn the seam on the side to put two pieces together. This glue is available in most retailers, including the larger home improvements stores
- CA glue accelerator (optional) turns any CA glue into quick set glue
- Medium grit sandpaper or emery board, small paint brush, paper towels or soft cloth rags
- Testor's Dull-cote™ (optional)
- Small clamps (optional)
- Flat black or grimy black spray paint (optional)

1 - Parts Preparation & Painting

Look over all the molded parts and remove from sprues and any flashing that might be left on them. Flashing is the thin pieces of the molding material that may be left in widow openings and along edges in the molded parts. This can quickly be removed with a razor type knife, a small file, or an emery board.

Separate the laser cut tower parts from their sheet using a razor knife. Use care when removing these parts from the sheet as they can be broken if over flexed.

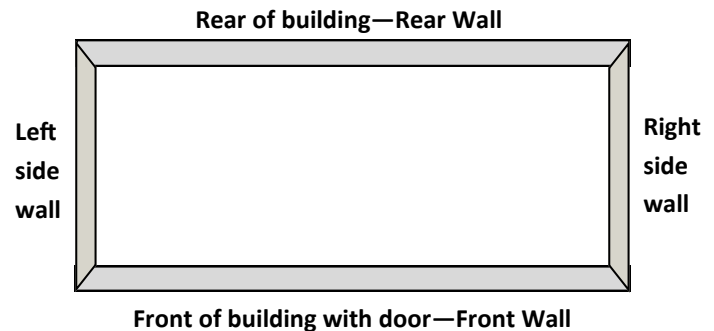
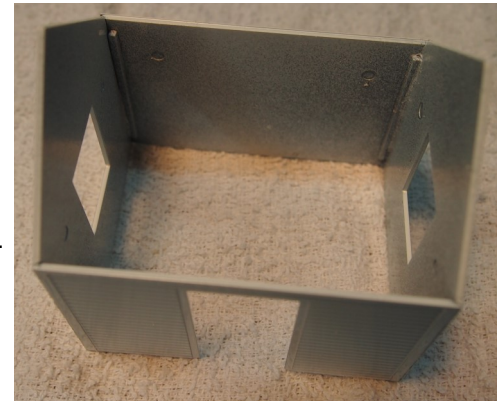
If you elect to paint the window frames & doors please do so in a well ventilated area (out side) You may want to paint these same color to create a theme for your Radio Station structure.

2 - Assemble the Main Structure

The assembly of the main structure is based on making a simple “box” when viewed from the top. There are four walls, two long ones in the front and back, and two shorter ones on each side. Below is a top-down view drawing of the relationship of the wall sections.

Placement of the structure walls

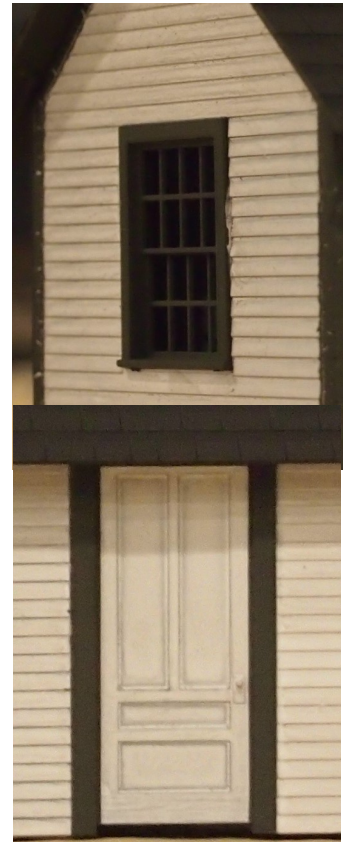
- Take one sidewall and the front wall and line them up to make a right angle. The use of a small square is helpful. The front wall should meet the side wall at a 45 degree angle as the joints are beveled. Glue the two wall sections together using care not to have excess glue get on the outside of the seam.
- Repeat the last step but using the other sidewall, and finally repeat using the back wall to complete the “box”.
- Optionally use clamps as necessary to hold pieces together.
- Once the glue has dried you can paint the base wall color on the building, spray paint works well for this step.
- Once the base color is dry now you can paint the trim of the wall sections. Note this often matches the color you used for the windows and door frame. You could use spray paint if you want to mask off all the clapboard area, otherwise paint and a small brush is suggested.



3 - Install Windows and Door

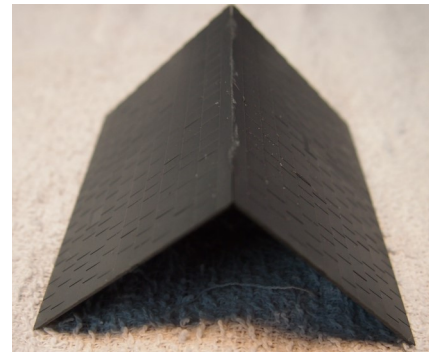
The windows and door are made from injection molded plastic and will have a clear plastic sheet stock applied over the opening from the inside of the model to simulate a finished window.

- If the window frames have not been painted, and if you would like to do so, paint them now and let them dry before moving to the next step
- Place the walls to which you want to add windows clapboard side up on a flat surface
- The windows are designed to overlay the window opening from the front, or outside of the building, and will not fit inside the window opening if installed from the back
- Apply a small amount of glue around the edge of the frame and insert over the openings on the wall sections
- Let the glued windows dry before moving the wall sections to a vertical position to avoid glue running or the windows falling out—repeat for the other side.
- Prepare to cut and glue small pieces of window clear plastic material over the back of each window. Consider the following two window detailing options for the windows:
 - If you want the window panes to have a hazed effect, lightly sand the window material until you’ve achieved desired haze effect prior to cutting into small window pieces
 - You may also detail the windows with shades by covering the top portion of the window material with masking tape
- The door assembly has two parts, the frame, and the door slab. Insert the door slab in the frame from the back or inside of the building and glue in place
- Place the wall to which you want to add the door assembly to clapboard side up on a flat surface
- The door and door frame combination are designed to overlay the opening from the outside, and will not fit inside the window opening if installed from the back.
- Follow the same steps as with the windows and glue the door assembly into place, and let dry.



4 - Assemble the Roof

- Glue the two roof sections together at the ridge. Note these two parts have a beveled edge to make the correct roof pitch.
- Set the assembly onto the building, but do not glue in place. Let it dry in place so that it will have the correct angle
- Once dry you can remove the roof assembly to paint the eaves on the underside of the roof.
- After the completion of painting you can glue the roof section in to place on top of the walls.



5 - Weathering the Building

Your Korber Radio Station main structure is now assembled. You may wish to provide some additional weathering before you install it, as a building next to the tracks would be a heavily used structure with a layer of soot, and would rarely look brand new.

To add a weathered look, spray the entire model with flat black from a distance. This will give a sooty look to the building. Once done you can spray the completed structure with Dullcote to remove any gloss or shine.

If you choose not to detail the inside of your structure, or light it, an effective and quick way to make a good looking building is to cover the windows with black construction paper from the inside. This creates a dark building look that is more desirable than the view in to an otherwise empty shell of a building.



6 - Assemble the Tower Sections

The tower is made up of three levels, each with four sides to them. The levels are joined together, two straight levels, and one tapered level, to make the final 24" tall tower assembly.

- For both the straight, and the tapered sides, there are two different types of sides, some with tabs, and others with notches. These tabs and notches interlock to help with assembly. Do pay close attention to make sure the angle cross braces on the sections are going in the same directions: high at the left side, and lower on the right. The parts will fit either way, but the cross brace pattern can get out of sync with the next side. See the picture on the right.
- Glue two sections together to form a right angle aligning the notches and tabs.
- You may find using a right angle piece of material, or even a square piece wood secured to your workbench provides a nice guide to get a clean joint of the two sides.
- Repeat this step for an additional side to create a three sided level—the fourth side will be added later.
- Repeat the same process as before to make one additional straight level, and one tapered level, each with three sides attached.



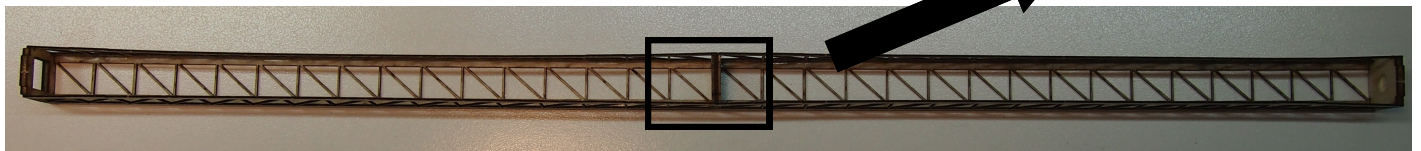
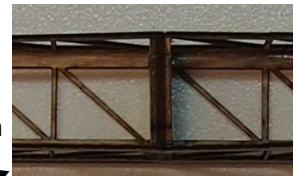
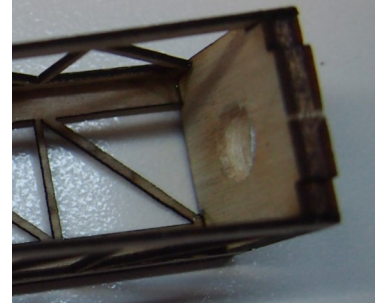
7 - Join the Tower Levels

The three sections are secured at the top and the joint between the levels by a joining plate that secures all four sides together. These parts are combined with the tower base in a single piece, and must be removed to be used, a razor knife works best.

In the next steps we will start at the top of the tower and work our way down, joining the three sides of each level that you have already assembled to the joining plates, and to each other.



- Starting with the top section—remember to align the side angled cross braces to be attached high on the left side of the face, and down on the lower side of the face. This is important as you attach the different levels to make the tower that they all go in the same direction.
- The top joining plate is the one with the round hole in the center that the flashing red LED will fit into in a future step. Glue this into place as in the picture to the right such that the plate meets the top of the level-sides flush at the top of the tower.
- At the opposite end of this upper level—just three sides of the tower so far— we will do a similar process with the lower joining plate. This lower joining plate is one of the two remaining that has a large square opening in it. This larger opening is both to allow us to install the lighting in a future step, and to provide an open look to the tower. **The important point in this step is that you will glue the joining plate such that only half of it is attached (glued) to this upper level, and we will attach (glue) it to the top end of the middle level to join the two levels together in a future step, see the picture at the right.**
- Repeat the previous step for the plate that joins the top of the tapered lower level to the bottom of the middle straight level. After you have completed attaching the joining plates you should have all three levels with three of the four sides attached. The fourth side of each level will be attached after the lighting harness is installed.
- In this step we will glue together the three levels. Starting with the two straight levels, carefully glue them together at the joining plates such that a single joining plate is glued to the level above it, and below it making the tower sides match up flush to each other for a smooth seam. Note the close up to the right showing the joining plate overlapping both sections, below note the two levels joined together-



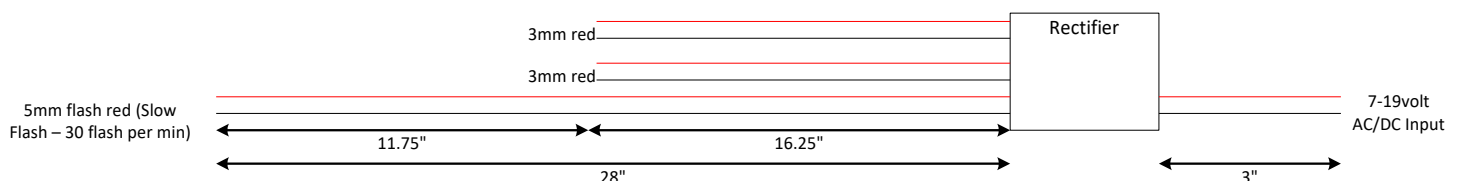
er.

- In the same manner as the last step now glue together the tapered section to the bottom of the two straight sections. Note the joining plate should over lap as in the previous step. It is also important to make sure the joining plate you glue together is one with a large square opening, the one with the small opening is the top and should be reserved for the LED light. Once you have completed this step you should have a tower that is 24" tall, with three of four sides complete for each of the three levels.

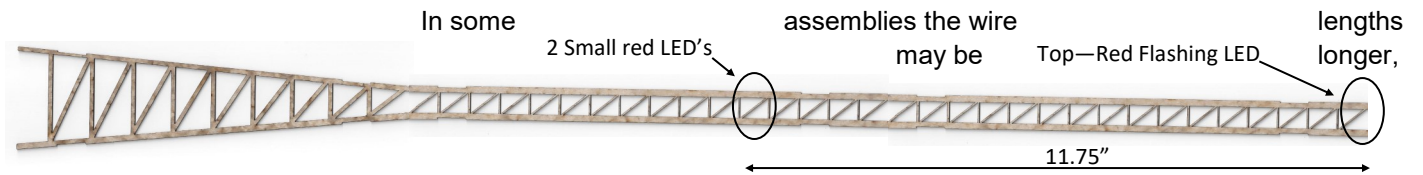
8 - Install Lighting Assembly

In this step we will install the LED lighting assembly inside the tower. Towers that this model represents would have a flashing red code beacon on the top that operates at 30 flashes per minute, and about half way up the tower would be a set of red side markers that are always on.

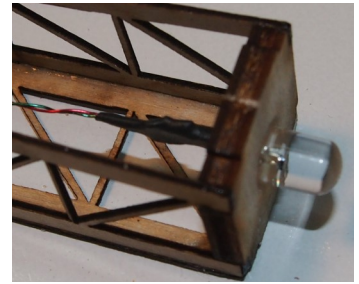
Carefully remove the LED assembly from the bag and unroll it to straighten. This assembly should have a red and black set of wires at one end for connection to your power source and a heat shrinked "lump" that contains a circuit consisting of a rectifier, dropping resistor and capacitor. Attached to the other side of the circuit will be three sets of wires: two that run to the smaller constant on LED's and one longer one that runs to the flashing top LED. You may want to test the LED's prior to installation to ensure they work properly. Attach 7-19 volts AC or DC to the red and black wires and verify



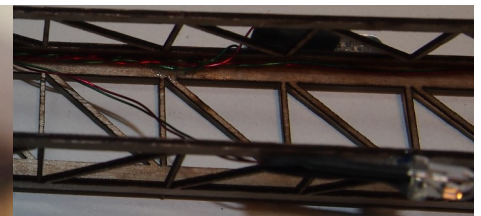
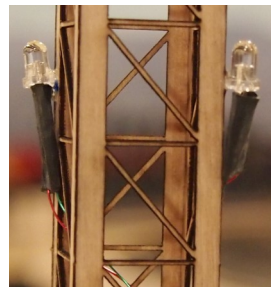
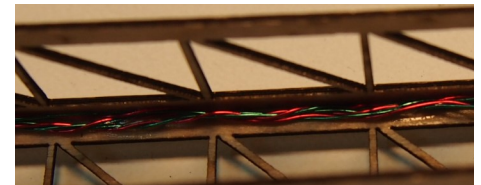
the smaller LED's light up, and that the larger LED flashes.



which is fine: we are really only concerned about attaching the red larger flashing LED to the top, and attaching the set of 2 smaller LED's in the middle of the tower.



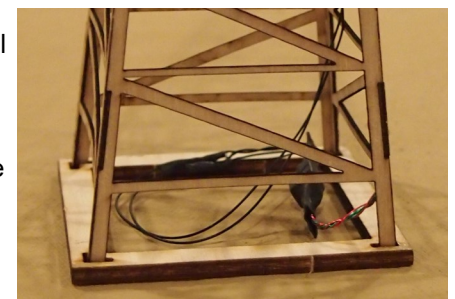
- Carefully pull the three sets of wire with the three LED's through the center of the tower structure starting from the bottom. Be sure to go through the center opening of the joining plates.
- Starting at the top, glue the larger flashing LED into the hole in the center of the top joining plate such that almost all of the LED is extending beyond the top of the tower.
- The goal is to install the wire to the inside corner of one of the three installed sides of the tower, and secure it with glue to effectively hide it.
- Working carefully from the top to the next level of lights, approximately 11.75 inches from the top of the tower, glue the pair of wires securely to the inside corner as shown in the picture to the right.
- We now need to glue the side marker LED's to two outside, opposite corners of the tower. To do this, we need to carefully pass the LED's through the side of the tower so that the heat shrink is also on the outside of the tower as seen to the right. Using a small dab of glue on the base of the LED only, attach to the tower. It is important that you do not attach the entire side of the LED as we will mask this for painting in a future step.
- As in a previous step, route and glue the wires for all three LED's along the same inside corner until you reach 1/2 inch from the base or end of the tower so that the tower base can be attached in a future step.



9 - Complete Tower Side

Now that you have installed the LED wiring assembly in the tower, we need to install the final side of the tower kit.

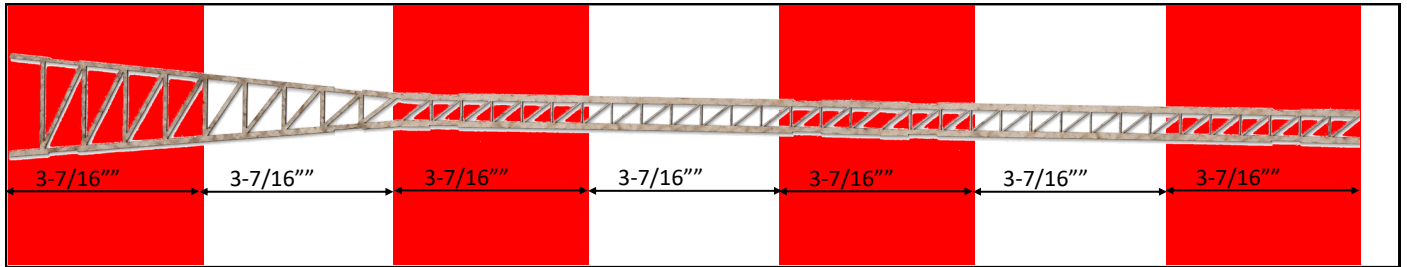
- Starting at the top of the tower (flashing LED level) carefully dry fit a fourth side of the tower, aligning the tabs in the notches on the adjacent sides, ensuring the diagonal cross members are going in the same direction as the other three sides. You may need to move or bend the adjacent two walls to make the parts fit, but do so with care as too much force can break the part.
- Once the dry fit is complete, carefully remove the part, and run a bead of glue down a side of the tower side you are to attach. Replace the side to the other three sides that you just removed it from, and let the glue dry.
- After the glue dries in the previous step, use care, and lift up the last side corner of the tower side left to join, and apply a thin bead of glue. Now align the corner back into place, ensuring you get a straight corner before the glue dries.
- Repeat the previous steps for the second straight level and matching side, and finally for the tapered level and side. Once done with this step you should have a three - level, four - sided tower with LED's installed.
- Place the bottom of the tapered level into the angled holes in the base and glue in to place. This base provides both



structural stability, and some weight to the base of the tower.

10- Paint the Tower

This model of a tower would fit in the under 350' requirements for marking and lighting which includes seven alternating bands of white and "red", a flashing beacon at the top, and two side light markers half way up the tower on the side. If you are interested, the Federal Aviation Administration website (faa.gov) provides all the details, including markings for other size towers, and structures like water tanks and windmills.



- Use a small piece of tape and mask off the clear portion of the larger flashing LED at the top of the tower, and the two side smaller LED's so that they will not get any paint on the clear portion. Do not mask the wires, as we want them to be painted along with the tower to blend in.
- Next step of painting the tower will be to apply the base coat of white paint. We suggest using spray paint for this as it is much easier to get all sides of the angled support structure. Paint in a well ventilated area, outside is best. Let the first coat dry.
- Look over the tower, you may need a second coat to have a solid base to work from. If so, apply the second coat and let dry.
- In order to paint the seven alternating red and white bands of the tower we will first mark out the equal length bands on the tower. Each band will be 3.42" long, or the closest fraction on a ruler is $3-7/16$. Refer to the diagram below.
- Using blue painters tape or equivalent, carefully mask off the white sections using the diagram above as a guide. Make sure the line between the bands is level and the tape is making good adhesion to the tower so that paint will not run under the tape. When complete you should have three masked off bands, and four un-masked bands.
- The next step of painting the tower will be to apply the coat of red paint. We suggest using spray paint for this as it is much easier to get all sides of the angled support structure. Paint in a well ventilated area, outside is best. When painting near the masked off areas, use care to spray at a 90 degree angle so as not to spray red paint into the center of the tower, and get too much overspray on the white section. You should also try to use a light coat so as not to have runs in the paint from red to white.
- Once the red paint is dry, inspect the red areas for even coverage, if needed lightly apply a second coat of the red paint and let dry.
- After the paint has dried at least over night, you can carefully remove the masking tape to reveal the final paint job on the tower.

11 - Add Custom Call Letters—Optional

When radio and TV stations were built in the mid 20th century, they added a set of call letters to their tower as a form of advertisement. These letters were typically made of metal and attached to the tower, painted white, and placed in one of the upper two red bands on the tower.

Your Korber Radio Station & Tower kit includes a set of letters and numbers so that you can customize the tower to your local real or fictitious radio or TV station.

- Using a razor knife, cut the desired letters and/or numbers from the provided set.
- Paint both the front and back the same color white you used for the tower and let dry.
- Lay the tower flat on your work surface. Align the numbers and letters vertically on the tower to make sure they fit ok in the red band you select, using the picture to the right as a guide.
- Apply a dab of glue to the back of each letter and replace them on the tower face in the same manner you dry fitted them in the last step and let the dry before standing the tower back up right.

