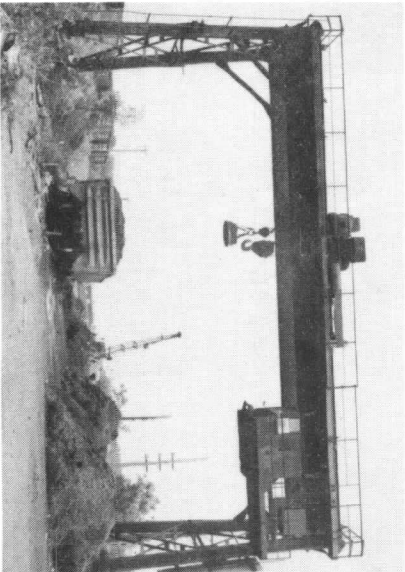


When the railroads were in their heyday, and the modern gravity hump yard was just a new device for switching cars,one could find many little flat yards all over the country. In these yards there had to be a means of removing heavy loads from gondolas or flats so that trucks could haul the products to their final destination. A wooden ramp, or a pillar crane sufficed for some loads, but heavy loads required the services of a gantry crane. This unit straddled several tracks, ran back and forth on its own rails, and had a winch house that could run crosswise with the tracks to load or unload from car to car or car to truck. Some of these units can still be found as shown in the small photo. (This crane is still used to



unload and load scrap metal at Worcester, Mass.). So, even the modern pike can make use of this model and it will only require a 10" x 12" area.

CONSTRUCTION

Assembly is relatively simple and only regular modeling tools will be required. A little time, patience, and care will result in a very satisfactory crane you will be proud to place upon your pike.

Before starting assembly,sort and identify the parts, visualizing their use and where they belong on the model. Most wood parts have been cut to size for you, others will have to be cut by using the plan for dimensions. Changes in temperature and humidity sometimes cause swelling or shrinkage. Some wood parts cannot be obtained in the exact size called for by the prototype and the nearest size available has been used. If the precut wood parts do not fit the plan exactly, work from the center, splitting the difference.

There are three major points to follow in building this structure. First, use the S plans as actual guides for cutting, fitting, and cementing. (A piece of wax paper placed over the plan will prevent the job from sticking to the paper). Second, build the various assemblies separately, then combine them into a complete unit. Third, paint the assemblies as you go, otherwise you will have a difficult job ahead of you. We recommend Floquil grimy black.

Your sub-assemblies will be: (1) two A shaped legs for each side of the structure; (2) the main overhead girder assembly; (3) two girder carriages with wheels that support the legs; (4) the traveling winch house; (5) the operator's shanty and platform:

(1) "A" SHAPED LEGS - Place the gusset plate card over another piece of card stock. By using a ball point pen or other pointed

tool, make rivet impressions by pressing the point at each dot. You can ignore this step if you desire, but the result is worth the extra effort. After the impressions are formed, cut out the 8 gussets needed for each leg. Check with the plan. Working upside down, position the gussets over the plan, and glue, and lay the precut ¼" channels in place. Being reversed, you will be able to cut the 1/16" sq. cross braces and glue them in place over the gussets. REMEMBER: rivet impressions should face downward. One cross brace can be cut to fit between channels, the other will have to be made in two pieces. Use ample glue to provide good strong joints.

When dry, turn the leg assembly over, cut two 1/16" angles 2 3/16" long and glue them across the outside of the center gussets as shown. Paint this assembly.

(2) MAIN GIRDER - The main girders must be glued together. They each consist of one 1/16" x 3/4" x 9 3/8" web and two 1/16" x ¼" x 9 3/8" flanges. When dry, place these two girders directly over the Fig. 3 portion of the plan and glue the precut 3/32" sq. x 2 1/16" strips across and flush with the ends to act as stops for the winch house. When dry, carefully raise the girders and slip the two 3/32" sq. x 2 1/4" braces beneath where shown on each end. Glue firmly.

Cut the code .082 rail furnished to fit between the stop strips and glue them to the tween these rails should be 2 3/4" exactly. If not,adjust accordingly before glue dries.

Using Fig. 1, glue the 1/16" x 1/2" x 5/8" end plates to the ends of the girders. Check Fig. 2 and 3 to ascertain their position. Then cut out the large card stock gussets and glue them over these plates. Keep rivet impressions outwards. Cut the two 1/16" sq. end cross braces and glue them in place. Notice that they lie aside of each other. A piece of 1/16" angle is then cut and fitted behind these plates up against the 3/32" sq. winch house stops.

Glue the precut 3/16" channel (two different lengths) across the bottom of the girders beneath the large end plates. Check the various views to make sure the long one extends outward on the corner that will support the operator's shanty.

Turn the entire girder assembly upside down. Glue the precut 1/16" sq. x 1" walkway supports to the bottom of the proper girder (opposite the operator's shanty) as shown in Fig. 3. Then space and glue the walk planking to these supports spacing as shown. Each support should extend about 1/16" beyond the outmost plank.

Form the end railing from .025 piano wire as shown in Fig. 1. Drill lead holes in the big end plates and insert the railing. Secure it with a bit of glue. Using the brass pins furnished, cut them to 3/4" lengths after removing the heads. After drilling #70 holes in the ends of all the walk supports, insert these pins along with a small dab of glue to form the railing posts. Keep them as upright as possible. All drilling should be done with a hand held pin vise. Now cut two 1¼" pieces of .025 piano wire and bend and form the railings. About 1/16" of each end will insert into the wood end blocks on each end of the girder. The most rigid railing job will result by soldering the piano wire railings to the brass pin posts. Glue could be used, but it takes longer and will not serve as well. At any rate, regardless of how you decide to fasten your railings, clamp type wooden clothes pins are handy to hold the wire to the posts while soldering. Clamp one post ahead of the one you wish to solder. When the job is finished, a very

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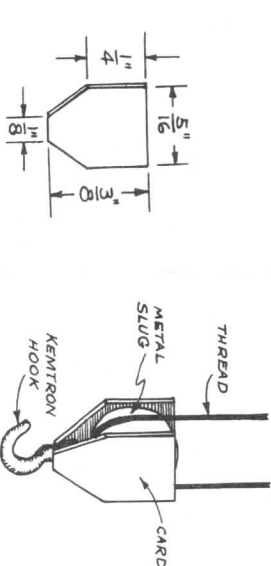
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rugged railing is the result. Paint this unit.

(3) CARRIAGES - There should be four pre-cut ¼" channels left to fabricate two carriages as shown in Fig. 4. First, glue the 1/16" x 3/16" x 3/4" precut wood pieces inside each end of each channel keeping them flush with the outer edges. These serve as reinforcements for the wheel axles. Then, using the plan, mark the axle centers on the outside of these channels. By using a hand pin vise, carefully drill the axle holes using a 3/32" or #42 drill. Be sure to keep them straight and at 90°.

Using the plan (Fig. 4), glue the channels to the 1/32" x 1/2" x 3" bottom carriage plates to form two carriages. Check inner spacing where wheels will go, by inserting the 36" wheels to keep a loose fit. This will enable them to turn easily. Glue the two 1/16" x ¼" x ¼" leg plates to the upper side of the carriage channels where shown. Use the plan for location. Cut four 1/16" sq. end braces and glue them across the upper channel ends. Using 3/32" T lattice supplied, cut ten pieces 3/8" long and glue across the carriage channels where located on plan. Then carefully cut and glue the diagonal braces between these braces. Cut four ¼" long axles from the 3/32" rod supplied. An X-acto or jeweler's saw



will make a nice clean cut. File the ends to remove roughness and burrs. By using a small round rat tail file, enlarge the holes in the 36" HO plastic wheels so they will turn easily on the 3/32" rod axles. Now you can insert your wheels and axles into the carriages. If there is any bind, remove and file where necessary. Paint.

(4) WINCH HOUSE - You will find that all the 3/16" sq. framing parts for the winch house are precut and it should be a simple matter to stack and glue them as shown on the plan. Using Fig. 5 to locate the axle holes, mark and drill the axle holes with a 3/32" or #42 drill. Cut four 5/8" long axles, file 33" HO plastic wheel holes for a loose fit and insert the wheels and axles into the winch house frame.

The corrugated covering pieces are precut with the exception of the ends which must be located over the plan, marked, and cut for the roof slopes. After this has been done, glue the sides to the framework and glue the 3/16" sq. reinforcing pieces along the top and flush with its edge. Then add the ends, and finally the roof section. This piece will have to be scored down its center so that it will fold down to each roof slope.

Using scrap pieces from the gusset plate card, cut out two pieces to the dimensions shown in the sketch to form the large pulley. Fabricate the pulley with the ¼" dia. metal slug and Kemtron hook glued between these card sides. The black thread furnished is threaded through the pulley thus formed and secured to the center crossframe piece inside the winch house. Use the same method to fasten the other simple hook to one of the side crossframe pieces. Paint this unit.

(5) OPERATOR'S SHANTY - Gather the parts that form the operator's shanty. These pieces have random scribing on one side and windows, doors, and roof lines already marked. Carefully cut out the doorway, both windows, and the roof slopes on each side piece. Using the 1/16" x 1 5/16" x 1 1/16" precut shanty floor platform as a base, assemble and glue the shanty together on the one corner of the platform. This will also keep it square. The shanty sides overlap the front and back pieces. Now glue the 1/32" x 5/16" x 1 1/8" scribed door in position, leaving it slightly open. Then fasten the roof in place. See Fig. 6.

Five straight pins, cut to proper length are inserted around the platform edge as shown and a 2 5/8" length of .025 wire is bent and soldered in place to form the railing. The one end can be anchored into the shanty side. Paint this unit.

(6) ASSEMBLY - Begin to assemble the various units to form the gantry crane. The A shaped legs are glued to the carriages, centering over the leg plates. Use plenty of glue for strong joints. By laying the carriages on their sides and supporting them and the legs with scrap bits of wood, this can be accomplished much easier than by holding them.

When these units are dry and firmly secured, attach both leg-carriage units to the main girder assembly. Again, use plenty of glue for a good strong joint. One leg can be attached to the main girder at a time by laying this upside down, (leg in air) and supporting the leg with books or anything handy to hold it in position. Check the legs for squareness. A common postcard can be used as a square. This is very important! Cut the four 5/32" H beam supports out carefully. These supports have complicated angles, so it pays to make them a little longer and then sand them to the proper

angle with an emery board. Glue these solidly in place.

Now we come to the shanty. First, cut the 3/32" channel supports for the shanty floor and the one from the main girder to the 3/16" overhanging channel at the one end of the main girder. By laying the crane on its "side", glue the shanty platform to the ¼" leg channel, supporting the back of the shanty with a scrap of wood to hold it in position until dry. When thoroughly dry, attach the 3/32" supporting channels. Don't forget the tiny triangular gusset on the lower support.

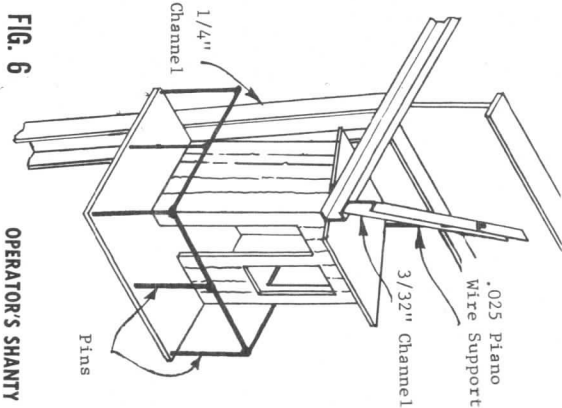


FIG. 6

OPERATOR'S SHANTY

By eyeballing, mark and drill where the .025 piano wire support goes through the upper 3/32" channel to support that corner of the shanty floor. This is touchy...so take your time. Add glue and insert wire.

Cut the brass HO ladder stock and glue it in place on the (shanty side) leg. Now paint any parts not covered and wherever glue shows. Your crane is now complete. Lay code 100 (HO rail) rail to fit the carriage gauge alongside your yard tracks and place the crane upon them. These rails can be glued directly to the earth as the ties are usually covered up in a yard. You now have another beautiful addition to your scenery and another destination for those flat and gondola cars. We hope you have enjoyed its construction.

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