Bob Harpe's GP35 Build!

Let's get started on our next SOUTHERNmodeler group project, the GP-35 2715F.

I trust that most, if not all of you, have purchased the necessary detail parts that were posted a few weeks ago. If you're still having problems finding certain parts, let me know and I'll see if I can direct you to a place where they are in stock.

Let's walk out to the shop and see what we can do to get started on this old girl.

STEP 1

I have posted two scans of the PH1C shell showing the factory details that will be replaced on my model. Let me say that these parts on the Kato shell are nice in their appearance all by themselves and will suffice for some of you as they are.

Personally, I like using Cannon & Co. detail parts and I use them whenever I have the opportunity. Removing these parts in the two scans is up to you and if you decide to bypass these steps, that's fine too. Your call.

I will be scanning the shell without these parts in the next step.

Good luck,

Bob

Scan 1

Scan 1A

STEP 2

This step is optional.

Scan 2

Please refer to step 02 in the files section of SOU GP-35 2715F group project. In this step we want to remove the fans and fan guards on the radiators and dynamic brake blister.

Using several different size drill bits, carefully drill into the three radiator fans and the one D/B fans until they are 1/8" thick. Now, using your Dremel tool and emery wheels, VERY carefully remove the existing fan guards. I would suggest a speed of no more than four (4) on the Dremel to prevent melting the surrounding plastic.

Scan 2A-1

Follow the instructions on the Cannon sheets to find the correct hole sizes. Please work slowly and be careful when approaching the measurements given on the instruction sheet. Sand once, fit twice is a good way to prevent an oversized hole. (ask me how I know).

Scan 2A-2

DO NOT glue the new fan guards in place in this step. We will do all of the plastic removal on factory detail parts before we add any new detail parts. Please take your time and concentrate on what you are doing. This is just the first step in building our GP-35 and you don't want to be making mistakes this early in the game.

Scan 2B

Step 02A) Drill several small holes approx. 3/16" from the four edges of the inertial filter hatch and then connect the holes using a sharp # 11 X-ACTO

blade. Remove all existence of the factory hatch and sand smooth. Square the inside of the hatch as shown in the scan.

The second 02A scan shows the hatch removed and sanded smooth.

Step 02B) Remove the D/B blister and use the same methods to remove the existing turbo hatch from the D/B blister. Carefully sand smooth and set aside. Do not add the new Cannon parts at this point.

STEP 3

Scan 3

Please refer to scans 03B and 03B1 as reference to the next steps.

Step 03B) After removal of low nose, carefully file the two "fingers" so that they are both even and smooth. These two areas are critical for a good fit of the new Cannon high hood.

Scan 3A

Step 03B1) Using the Kato sub-base as a guide, make sure the two "fingers" are even with the top of the sub-base. Sand carefully until a good fit has been achieved.

Do not glue any joints yet.

Scan 3B

Scan 3B-1

STEP 4

The following steps are optional

Step 04) Carefully remove the Kato long hood end following the parting lines noted in the scan. Sand smooth and test fit often so as to achieve a good, close fit of the new long hood end.

Scan 4

Step 04A) Cut a .040 X hood width brace and spot glue approx. 1/4" from long hood end. This brace will allow us to use rubber bands to secure the Cannon long hood end and preventing the hood from bowing and distorting it's shape. I suggest using Cyanopoxy to spot glue this part as we will want to remove it when the long hood end is secured in place.

Scan 4A

Step 04B) This is the Cannon long hood end built per Cannon instructions. I installed the .020 X .125 inserts as number boards and secured them with laquer thinner. I strongly suggest that you drill all grab iron holes before attaching to the long hood. Allow to dry thoroughly.

Scan 4B

Step 04C) Glue the Cannon long hood end in place using your favorite plastic cement and use two medium length rubber bands to hold in place until completely dried. Make sure your rubber bands aren't too tight so as to cause distortion of the long hood. The new Cannon part should fit evenly with both sides of the Kato shell.

Scan 4C

Step 04D) Completed end assembly.

There are a couple of reasons why I decided to change the Kato long hood end to the Cannon end. First, I wanted some of the lesser experienced modelers to see how it's done, that it's really not that difficult to do and maybe entice them to try this modification for themselves.

Scan 4D

The second reason is simply because it's there. Kinda like why mountain climbers climb mountains.....because it's there. ;-). Seriously, I like Cannon parts and by replacing the long hood end, both ends will wind up looking alike.

STEP 5

Step 05) Let's begin the building process and add some of the new detail parts that we've removed in previous steps. Glue the Kato sub base to the two fingers that supported the low nose making sure that the top of each finger is level with the tops of the sub base.

Scan 5

The reason for this is that the two fingers will be the base for the high hood and we want to achieve a tight fit between these two parts. Allow to dry completely.

STEP 6

Step 06) One of the main peeves that I've heard about the Kato shells is the fact the turbo charger housing doesn't reach the top of the walkway when the shell rests in place. Scan 06 shows us a very simple solution to this problem. Cut the plastic to fit and glue in place.

Also shown in this scan you can see where the centers of the four locking tabs have been removed. In a following step we will glue the shell and walkway together and these pins will not be needed to hold the model together.

Scan 6

STEP 7

Step 07) On the short hood end of the Kato shell you will find cab location guides on both sides of the shell.

These guides need to be removed along with all of the plastic inside the entrance to the cab so that the new Cannon cab will fit flush with the shell. Sand smooth.

Scan 7

STEP 8

Step 08) Let's move to the Cannon cab assembly so it will have had time to dry thoroughly when it comes time to install the cab. Follow the Cannon instructions per their instruction sheet for assembly of the 35 series cab. Make sure you remove any flashing from all the kit parts before you attempt any assembly.

I would emphasize two items here to prevent problems later. First, make sure you drill the four (4) holes for the W/S wipers before you do any assembly. I suggest that you use a # 78 drill bit for these holes.

Second, if you plan to close the two cab doors, I would suggest gluing them in place before you assemble the four (4) cab sides. If you decide to leave them open, glue them on later.

Scan 8

STEP 9

Step 09) Remove the four (4) corners from the two pilots using the inside of the bottom holes and the bottom of the outside holes. See scan to make sure we're talking about the same holes.

Removal of this square will make room for the cut lever bars to be installed later. **DO NOT** attempt this step unless you are sure you understand the instructions.

Drill the four (4) existing cut lever holes with a # 72 (.025) drill bit. These holes will be filled on step 09A. Remove the foot boards and all MU hose details from pilots.

Step 09A) Using Evergreen plastic rods, fill the six holes in both pilots. These holes support the Kato coupler lift bars and the Kato handrails, but we will be replacing these details in a future step.

Scan 9

Q: *A question about the corner notches to be made on the end pilot (reference your step 9). In viewing the various prototype photos in the files section posted by Warren Calloway (thanks Warren), my observations are that these notches did not appear until almost 1980, in order to accommodate the change in cut levers.*

Also the pilot footsteps are still on these same units. Looks as if these modifications were done at the same time. So these details would appear to be "time specific". Any comments from the group on this? ***(Walter Rieger Covington, La)***

A: *You make a very valid point. In response, I would tell everyone to please refer to photographs when modeling a certain model if you are modeling a certain time period. In fact, it would always be good to refer to photographs when modeling any piece of equipment just to prove to yourself that your model did exist in a certain condition at some period of it's lifetime.*

I would suggest that everyone look thru Warren's photographs or look thru their own photo collections and find a GP-35 number and model that

Scan 9A

particular locomotive using the details found in the photograph ***(Bob Harpe, Savannah, GA).***

Additional Remarks:

Bob & Walter are correct. Photos from your specific modeling time period are essential. The notches in the pilot plate corners are for the modification made to the cut lever to allow a man riding in the step well to uncouple the locomotive without stepping off in front of the unit. This was a FRA-mandated change that is concurrent with the appearance of the FRA ride-on step on new power of the era, the banning of footboards, and the extending of the cut lever to be accessed from behind the pilot.

The time frame of the change was the early 1970's (I want to say 1972, but am not certain of the date) for new-ordered locomotives with a grace period and final compliance date in the mid-1970's for locomotives built prior to the ruling.

As an example, Southern's 1st U23B order (3900-04) blt in 1972 came with footboards; the second order (3905-14) blt in 1973 came without. Stepwell widths on EMD's increased, with the pilot plate moving outward, during the same time frame.

A further note of caution on photo use is when using detail photos on restored locomotives available in the current time, care must be exercised to be certain that details found currently on a locomotive are in fact appropriate for the time period you are modeling.

In the case of our GP35, Southern (S&A) 2715 provides a good resource and Bob knows the specifics he's looking for versus what would be inappropriate (an NS knuckle box on the walkway, for instance, is an NS-era detail that Southern units did not have prior to the 1982 merger. But everyone needs to be aware that a historically correct paint job does not always hide historically inaccurate details (unless it is a painstakingly done full restoration).

Bob Graham

Scan 9B

Step 09B) Trim all plastic rods and sand smooth. Trim the corner squares on both pilots (on post 1980 models). Next, drill new # 80 holes on both pilots for the cut lever bars and drill # 70 holes for the MU and train line hoses.

STEP 10

Please refer to scans 10 thru 10C as reference to the following steps.

Please use part number 13 in the Cannon HH kit instead of part 14. This part is the HH side on the fireman's side of the high hood and has the cutout for the brake ratchet. The cutout for the GP-35 is not as tall as the cutout for later models or those on SD locomotives.

Scan 10

Step 10) Using the measurements supplied, drill for and install the Overland walkway light. The instructions on the Cannon HH kit for the chain guard are not very clear for the GP-35 series locomotives, but there is not a chain guard on these locomotives.

Scan 10A

Step 10A) Drill all of the holes for the grab irons using a # 80 drill bit. Install the plastic number boards.

Scan 10B

Step 10B) This step is optional and should be used only if your model is built to be used post 1980. Using the measurements on the scan, cut the correct size hole for the toilet water fill and cement in place. Fill area around the part if necessary and sand smooth.

Scan 10C

Step 10C) After the HH kit has been built, install the .030 X .250 temporary brace inside the high hood as shown. This brace is used to prevent the sides of the HH kit from bowing in or out when the rubber bands are used in the installation of the HH kit. This brace will be removed in a later step.

STEP 11

Please refer to scan 11 as reference to this step.

This step is optional, but will add to the appearance of your model.

Step 11) Using the instructions for the Cannon steps, install all four sets of steps. I deviated in one aspect of this installation and left the Kato kick plates in place. This adds strength to the steps and walkway, but does not interfere with the proper installation of the steps.

One word of caution: Do not attempt to work too quickly on this step. Please take your time bending the steps and concentrate on each bend that you make.

STEP 12

Please refer to scans 12, 12.2, 12A and 13 as reference to these steps.

These steps will begin to bring our GP-35 to life and you'll feel as if we're making progress. ;-)

Step 12) Glue the entire shell to the walkway making sure not to allow glue to seep to the outside of the shell. Work slowly and add glue carefully.

Scan 12

Step 12.2) After you have achieved a good tight fit of the high hood in all locations where it meets the cab and battery boxes, use rubber bands to hold in place while you glue in place. **NOTE: After the rubber bands have been installed, hold the model up to a strong light and examine for any light that might be seen where the HH meets the other parts. Do not glue until all light sources have been filed or sanded.**

Scan 12cab/hood

Step 12A) This is how the cab and high hood should appear after the glue has set.

In my haste to finish the last steps, I forgot to mention a very important item to you. Looking at scan 12cab/hood, notice the point where it says "do not glue here." Do not allow glue to reach the front (short hood end) of the cab. We will need the flexibility of the front of the cab when it comes time to glue the cab and high hood together.

Scan 12A

STEP 13

Step 13) Install the inertial filter hatch and turbo hatch using the measurements on the scan. NOTE: These measurements were taken directly from the original GP-35 # 2715F.

STEP 14

Please refer to the prototype scans 14, 14A and 14B for actual measurements and visual aids for modeling steps 14 thru 14B.

Step 14) The horn, with three chimes toward the short hood, is centered from side to side on the short hood and is located 3 1/2" from the front of the weld line toward the short hood end. Drill the appropriate size hole and secure with Cyanopoxy or your favorite ACC type adhesive.

Step 14A) Refer to prototype scan 14A for the proper location of the antenna. The measurements you see on the scan were taken from the grab iron bolt to the center of the antenna base. Drill the correct size hole and secure.

Step 14B) The bell I chose to use is DW 135. Notice on the prototype scan how the bell bracket is open and not solid as the detail part is. I used a sharp set of diagonal pliers and an old #11 X-ACTO blade to remove the solid part. Carefully file the sides once the solid part has been removed. You will need to add two small triangle braces on both sides of the bell bracket and for this I used .015 plastic. Secure with Cyanopoxy and allow to dry. The air line was

formed, following the scan, using .010 brass wire and securing both ends with Cyanopoxy.

STEP 15/16

Please refer to prototype scans 16, 16.2 and 16.3 and model scans 15, 16 and 16A as visual aides to your GP-35.

Step 15) Install all of the DA grab irons shown on the model scan. Use the .030 X .125 plastic strip to insure that all grabs are straight and are at the correct depth. Glue from the inside, being careful not to get adhesive on the plastic strip, and allow to dry. Cut the wire ends from the inside when dry. Complete both the long hood and short hood ends the same way.

Step 16) This step shows the Cannon D/B and radiator fans installed. Please refer to the Cannon instructions for the assembly of these parts and PLEASE remember that these parts are extremely delicate and will distort if care is not taken in the removal from the gates and in the construction of each assembly. I would suggest that you DO NOT built the fan assemblies on the model, but rather as separate assemblies on a flat surface. This way, if you do bend a fan guard or break a piece of the fan housing, you won't have to try and remove the part that has already been glued on. Also, be sure to test fit each piece before gluing the assembly together. If you will notice, I have used a 36" fan from a P2K SD-9 instead of the Precision fan. I felt that the P2K fan better suited my needs, but you can still use the Precision fan if you desire.

STEP 17

Please refer to step 17 for the scan.

Step 17) Drill the correct size holes in the locations shown and install the two walkway lights as shown. Notice that one light is located directly between the two radiator grills and the other is locater approx. 1/8" in front of the D/B access door. Please refer to step 10 for the location of the light on the short hood end of the fireman's side

This step is optional, but will enhance the looks of your GP-35 model.

STEP 18

Please refer to step 18 in the files section as reference to this step.

Step 18) Carefully remove the molded on air tanks from both sides of the Kato tank. Please work slowly so as to prevent cutting yourself. (ask me how I know) File and sand any marks left on the tank surface with 400 W/D

sandpaper, used wet. Now glue the two halves together with your favorite adhesive and set aside to dry. When completely dry, sand the two fuel sight glasses from the tank and use filler to cover the hole that is left. Sand with 400 W/D sandpaper, used wet.

Cut two pieces of the .020 X .156 styrene strip the same length of the tank and glue in a vertical position along the top of the tank. (these pieces of styrene will help support the new air tanks to be added later.)

Next, cut two pieces of .010 X .100 styrene strip and glue to the top of the tank. (these pieces represent the welded section of the tank top.)

Next, lay the tank end on a sheet of .015 plastic and trace the tank section. Glue these two pieces to the tank ends so as to represent the welded ends on the EMD tank. When dry, sand this plastic until there is just a very small ridge all the way around the tank. Set aside to dry completely. We will add the new air tanks later.

STEP 19

Please refer to step 19 scan as reference to this step.

Step 19) Glue the .030 X .040 plastic strip to the bottom of the existing fuel filler guard and allow to dry completely. When dry, file these strips to the same angles as the existing Kato filler guard.

Now your filler guard has the longer, triangular shape that more resembles the SOU. filler guard. Next, sand the two filler guard details smooth and fill with putty. DO NOT fill the circular hole as noted on the scan. This detail will be replaced in another step.

Scan 19

Please refer to scans 19A and GP-35 fuel filler scan as reference to step 19A.

Step 19A) Drill existing filler neck ring to the outer ring area. Next, cut a square piece of .020 plastic strip and glue to the back of the drilled hole. Allow to dry completely. Drill the correct size hole and add the DA 3102 filler cap.

Next, select four (4) fuel gauges from the DA 3102 detail kits. Cut the gauges away from the mounting bracket and file smooth. These gauges need to be as thin as possible as the prototype gauges were flush mounted. Very carefully glue the gauges in place according to the prototype scan and allow to dry. Now glue the smallest MU cover from the DA 1507 kit using the prototype scan as a guide.

Scan 19A

Step 19A) Drill the Kato fuel filler out completely and add a square of .020 X .020 plastic to the back of the filler guard and allow dry. Next, drill the center if this plastic to accept the DA 3102 fuel filler neck and allow to dry. Next, remove the fuel gauges from the DA 3102 parts spru and sand smooth on all sides and rear. The gauges on the prototype are flush, so sand as thin as possible. Next, glue the gauges and mu cover in their correct places on the filler guard.

STEP 20/21/22

Tonight we will cover a lot of territory dealing mostly with the GP-35 fuel tank and air filter. I will tell you that I have taken liberties in modeling the tank on this model.

This was done mainly to prevent you from having to cut, file or otherwise remove enough tank mount metal to construct a tank that is the actual length of the SOU. GP-35. If you should decide to model the correct length tank, please email me off list and I'll supply you with the correct dimensions for this tank. Please refer to the corresponding scans for each step.

Step 20) Using the DA 3201 GP-35 air reservoirs, drill both ends to accept the DA 242 detail parts and the .020 brass rod. Next, install the DA 242 parts and allow to dry. Now, cut the 4x4 plastic strip and glue in place. Drill three holes to accept the NBW castings and allow to dry. Paying close attention to the air tanks (there are two wide rings on each tank and two thin ones. One wide ring is further from the tank end that the other), glue the tanks to the fuel tank making sure you mount the tanks with the end ring at the very end of the fuel tank. Please refer to the scan before you glue anything in place.

Step 20A) Cut a piece of .020 brass rod and glue into the engineer's side end of the tank. This wire should extend a scale 36" from the end of the tank. Step 20B) Drill the correct size hole for the .028 brass wire vent and the DA 305 and install both in place.

Step 21) Remove the trucks and motor from the Kato frame. Next, remove the nine scale inches from the tall frame weight. This is absolutely necessary for the high hood to sit on the chassis. File smooth and test fit the shell for clearance.

Step 21A) Remove the metal shown in scan 22. This will allow us to install the air filter which is so prominent on the GP-35's. Now reinstall the trucks and motor to the frame.

Step 22) Please note where the air filter is located on the model before you attempt to install it. Step 22A) Remove the mounting pin and and brace from the air filter and smooth the area behind it. Next, ream one end of the 1/8" tubing to accept the top of the filter. Glue the two together with Cyanopoxy and allow to dry. Next, glue the assembly to the underneath of the walkway and allow to dry. Test fit for clearance on the frame.

Step 22B) Cut the .015 X .100 and glue to the front of the air filter as shown in the scan. Next, cut a triangular piece for the brace and glue in place. Next, glue the .030 X .080 X 24 scale inches and glue in place for the walkway light mounting pad. Guys, we've covered a lot of details in these steps. Please don't feel as if you have to complete them in one day or one night. Take your time

and do it right as we go. If you don't understand a step or think I did something incorrectly, please let me know and I'll explain what I did or I'll attempt to correct my mistake.

STEP 23/24/25/26

These are the final four steps of construction on the shell of our GP-35. Please refer to the corresponding scans as reference for these steps.

Step 23) Remove the Kato brace that bridges the battery boxes on the GP-35 shell.

Step 24) Install the HiTech cab shades being careful to line up with equal space on both ends. Allow to dry completely.

Step 25) Install the two Overland mu stands, part no. 9353. Be sure to line the corner of the mu stands with the outer corners of the anti-climbers.

Step 26) The scan for this step shows the final detail parts that we will install on our SOU. GP-35 and covers the ones listed in the previous three steps. The next scan you see of this model will be black.

Decaling STEP 27 A-K

Gentlemen, Please refer to scans numbered 27 thru 27K as reference to these steps. I have always thought that decals are as important as any detail you might place or install on any model you build and I hope to assist you in doing a great job of applying the decals to your GP-35. I have a preference for Microscale decals when modeling the SOUTHERN Rwy. These decals seem to have the correct shaped letters and the colors are what I consider to be correct. I suggest that you use set 87-540 for the Imitation Aluminum stripes and either set 87-32 for the Bronze Gold or set 87-539 for the Dulux Gold letters and numbers.

The GP-35's were delivered in the Bronze Gold, but many were later repainted and lettered in the Dulux Gold. This color choice is left up to the individual modeler, but the instructions for applying the decals will be the same.

There are several decal setting solutions that may be purchased from most any good hobby shop and if you have one that works for you and gives you the results you desire, please continue to use it. I will give you the formula for the solution that I use and if used correctly, will give very good results. This too, is left up to the individual modeler. The mix that I have found to give good results is as follows: Using a three (3) oz. jar, mix one (1) oz. of Walther's

Solvaset with one (1) oz. of distilled water. To this mix, add one to two tablespoons of 70% rubbing alcohol. The distilled water will prevent the unwanted water spots we sometimes get when using a city water supply and will also cut the strength of the Solvaset so as to allow us time to move the decals into their proper place on the model. The alcohol prevents the water/Solvaset from dispersing on the shiny, slick surface we have prepared for the decal placement. Always cut the decal as close as possible to the number or letter being used. There is no need for any extra film other than having it be in our way.

If you will look closely at the Microscale sheets mentioned above, you will notice that each word or stripe is a separate decal. This is good and prevents us from having to cut so close on each decal. One suggestion as we begin, remove the clear film on the bottoms of three stripes so they will set down against the top of the walkway and the bottoms of the doors of the long hood.

Step 27

Step 27) Remove the film from the bottom of the decal stripe and drop in a bowl of distilled water. After approximately two minutes, the decal will begin to separate from it's backing. When it does, remove the decal from the water and lay on a clean paper towel to remove the excess water. Now, using a soft, long haired brush, flood the area where the stripe will rest. (See scan 27 for the place to start.) Now pull the decal from it's backing and slide into place using a blunt instrument to do so. I normally use the same brush that I use to apply the setting solution to slide the decal off it's backing. Now, remove any excess solution using the corner of a good paper towel and move the decal into it's proper location watching for the corners of the turbo hatch (if you began where I did). Be sure to measure (don't eyeball) at the end of the stripe and make sure the end is the same height as the stripe at the end of the walkway ducting. This will be a critical point of your decal process. Allow to dry completely before moving to the next step.

Step 27A

Step 27A) When the first stripe is dry and set in place, you may add the second stripe making sure not to overlap the first stripe more than 1/32nd". If you overlap more than this, you will get a darker stripe at this location.

Step 27B

Step 27C

Step 27B) Take the time to measure the second stripe at several locations to make sure that it is the same height as the first stripe. Allow to dry completely.

Step 27D

Step 27E

Step 27C) Measure from the end of the second stripe to the rear of the cab and cut a decal stripe that same length making sure to notch the decal for the step. Apply decal using the solution and move into place. Allow to dry completely.

Step 27D) Refer to scan 27D. Cut one piece of decal the length of the step guard, cab and battery box plus a little extra. This length of decal should be around 13 1/2' scale feet long. NOW, remove 4 1/2' feet of gold stripe along with the same amount of the Imitation Aluminum, the same width as the gold stripe. The section of decal cut will be directly under the battery box and will allow approx. 6" to wrap around the battery box. Apply the solution to the model and slide the decal into place. Allow to dry completely.

Step 27F

Step 27G

Step 27E) Now flip the model and repeat the process for the Fireman's side ma king sure to cut the decal long enough to meet the end of the first decal stripe. (see scan 27E for reference) Allow time for decal to dry completely.

Step 27F) Measure the distance between the end of the battery box on the Engineer's side and the brake ratchet recess and cut a decal this length. Use plenty of solution as this decal has to pass over several details in this section. Measure both ends and the middle of this decal to make sure it lines up with the stripes on the cab sides and is the same height as the stripe on the long hood. Allow to dry.

Step 27G) Measure the distance between the end of this last decal and the front of the cab and cut a piece of decal to fit. This thin stripe should be twice the width as the gold stripe if we measured correctly. Be sure to push this stripe into the corner of the cab and high hood. DO NOT apply the setting solution to this thin stripe at this time. Allow it to dry first, then apply the solution. Allow to dry. Repeat for the Fireman's side.

Step 27H

Step 27I

Step 27H) Use photos to see where the name goes on the long hood. Be sure to use plenty of solution so as to seat the letters over the details. Repeat on both sides and allow to dry.

Step 27I) Apply the unit number, computer check letter and any sub-lettering you have chosen for your model. Use the solution and allow to dry.

Step 27J) Pilot stripes, or scare stripes as they are sometimes called, have scared many modelers into submission, but with a little patience and time they are relatively simple to apply. Refer to scan 27J and see the guide I made from the measurements on the Kato pilot. Simply transfer the measurements to the 3 x 5 card and cut out using a sharp X-ACTO blade. Now, trace these this guide onto one of the Microscale pilot stripes and cut with a very sharp X-ACTO blade. Stand the model on end and slide the entire, one piece decal onto the pilot, making sure you use plenty of solution. Remove any excess and slide the decal into place. Allow to dry.

Step 27J

Step 27K

Step 27K) Add the number board numbers from the ShellScale set, the SR herald, the "F" on the short hood frame, the safety stripe on the Fireman's side walkway and any other small decals you see on the prototype photos you are working from.

Our last installment of instructions dealt with decaling the GP-35.

Today, I'd like to talk to you about protecting the decals that you've placed on your model and flat coating the paint that you've applied. Dullcoating the model, like paint, is a subject where everyone has his or her own opinion as to what to apply and how the dullcoat should be applied.

Over the years I have tried several methods of dulling the paint and hiding the decal edges on my models and I have come to a point where the method I will describe to you works for me and it's the same one I use on all my SOUTHERN locomotives. Many of you may have used acrylic paint to decorate your model and that's your choice. If it works, stick with it. I just spoke with Jim Six and he tells me that he's been using Dullcoat and lacquer thinner on his models painted with Modelflex and is very satisfied with the results he's getting. If you used a lacquer based paint, then you'll have no problem with my mix. You may want to try it and see if it works for you too.

Using a one oz. bottle, mix two parts Floquil Glaze to one part Testor's Dullcoat and thin approximately 50%. If you build as many models as I do, you'll use this much flat coat in a short while so don't worry about the paint going bad on you. After all the decals are set, wash the model in warm water using a mild dish washing liquid and scrub with an old, soft tooth brush. Be sure to wash well around the D/B area as this is probably the place where you handled the model the most. Be sure to remove all the hand oils and any dust that may have accumulated on the model.

Now dry the model with a hair dryer being sure you remove all water from the model. I like to spray the cab numbers, gold stripe and the word "SOUTHERN" with a light coat before I spray any other parts of the model. Now move to the top of the model and work from end to end making sure you get a smooth coat applied here.

Now move to the cab corners, both ends of the model and the sides of the short hood. Spray the walkways and then spray both sides of the model making sure to cover the cab numbers and the word "SOUTHERN" with a smooth coat of flat paint.

Set the model aside under some sort of cover and allow to dry completely. Your model should be a semi-flat black and all the decals should be sealed and ready for weathering.

STEP 28

The SOUTHERN Rwy. owned a total of 76 GP-35's. Of this number, five (210-214) came from the Central of Georgia and eleven came by way of the Savannah and Atlanta Rwy (2705-2715). There were also two hybrids, 2526H and 2641X, which came to the GP-35 roster as results of these two units being wrecked and then rebuilt with GP-35 carbodies after EMD had ceased the GP-30 building program. Units 2645-2702 and units 2705-2715 all rode on traded in trucks from retired SOU. RS-3's. Units 210-214 (later renumbered 240-244), 2703 and 2704 came equipped with standard EMD Blomberg trucks.

If you choose to model one of the units equipped with the EMD sideframes, all you need to do is detail the Kato sideframes to your standards. However, if you choose to model any of

the other unit numbers, you'll need to replace the sideframes with parts from Stewart AS-16/ RS-12 models. These parts can be purchased directly from Stewart as these are wonderful folks to deal with. The part numbers you need are: PN0176 for the sideframes and PN0191 for the brake cylinders.

Step 28) You will notice that each bearing face on the Stewart sideframes has been removed and replaced with Hyatt roller bearings. Carefully remove the Stewart bearing using a sharp knife. Drill the correct sized hole in each sideframe and glue the new bearings in place. Remember to drill the lead bearing on the Fireman's side for the speed recorder. Drill the correct sized holes in each sideframe for the sanding lines. I now use wire purchased from Michael's Craft Stores. This wire comes in an easy to bend, black color, 24guage, and a perfect size for sand lines. Drill a no. 75 hole, install the wire and glue in place with your favorite ACC type adhesive. Drill each brake cylinder with a no. 79 drill bit and using .012 brass wire, bend two air lines for each sideframe. Glue in place. Paint these sideframes with your favorite shade of black and allow to dry. In step 29, I'll demonstrate how to remove the Kato sideframes in a safe and civil manner (you didn't know such existed.....did you??)

Step 28

STEP 29

I've heard many comments concerning the removal of the bottom plate from Kato trucks and several contained some four letter words which are not fit to print here. In the following steps I will attempt to show you how I handle this problem and I think you'll find it's not quite as difficult as it seems. ***** Please use appropriate safety eye wear while attempting these steps.

Steps 29-29D) Looking at the bottom of your Kato truck, you will see four hold down tabs, one behind each wheel. These tabs must be lifted from its holding pin before the bottom can be removed and the new sideframes installed.

Step 29

CAREFULLY, using an old broken # 11 blade, pry the lead tab from its pin and immediately insert a flat tooth pick between the bottom of the truck and the gear case. Next, move to the other tab on the same side as the one just removed. Now, move to the other side and loosen the other two tabs. This should free the four hold down tabs and the bottom should pull away without any effort at all. You should now be able to install your new Stewart sideframes into the same holes provided for the Kato sideframes.

Step 29A

Holding the sideframes in place with one hand, reinsert the bottom of the truck back into it place. Walk in the park!! Set your model's chassis on a flat surface and rotate each truck to make sure there are no binds or that the sand lines or air lines do not rub on the bottom of the chassis.

Step 29B

Step 29E) After the truck sideframes are detailed and are installed on the trucks, place GP-35 shell on the chassis and rotate both trucks. Check to be sure the trucks do not bind on the steps or on the tank details as the area under the chassis tight. I had to push my sanding lines in toward the sideframes to prevent them from rubbing on the steps.

Step 29C

Step 29D

Step 29E

STEP 30

Step 30B) This scan shows some of the smaller and final detail parts that we need to add to our model. Be sure to add all four W/S wipers and all the grab irons to the front and rear of the unit.

Step 30

STEP 31

Please refer to scans 31A thru 31E as reference to these next steps. Also please look at each scan before attempting these steps.

******These steps are not absolutely necessary for completion of your GP-35 project, but I do feel the replacement of the delrin rails with .016 brass rails will enhance the appearance of your completed model. The handrails supplied with your Kato GP-35 are out of scale and will appear grossly oversized when applied. I suggest you use .016 brass wire to replace the rails, but retain the delrin stanchions.

Step 31A

You may think the stanchions are also out of scale and oversized, but you've got to stop somewhere and this is my somewhere. Using a new # 11 X-ACTO blade, carefully remove each stanchion from the delrin rails. Be sure to work slowly and attempt to make clean cuts on each part. Now, using a needle or some sharp object, mark the center of each stanchion (post).

Step 31B

Next, drill each post with a #80 drill bit. Continue on with the next sized bits until each post has been drilled with a # 77 bit. This # 77 bit measures .018 and will allow slop for easier movement of the posts and will make room for the adhesive we will use to secure each post. NOTE: Do not remove the two posts beside the Kato drop steps. We will retain these parts as one piece as they will act as anchors for the new end railings. Refer to scan 31E and notice the measurements on the scan. You will need to drill four (4) holes in you cab, two on each side, using a #79 bit. These holes should be 36" from the bottom of the cab and 6" -

8" from the cab ends and will be for the ends of the handrails. Drill slowly so as not to scratch the cab sides and ruin your paint job. I suggest making the proper bends on one end of each new rail and then slide the correct stanchions on the rail and set each one in it's place. Now make the bends for the other end.

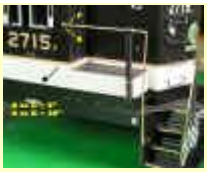
Repeat this step until all new railings are in place. You will see that each post will move from right to left. Slide the post to one side or the other and apply your favorite adhesive to the area where the post should sit and then pull the post into it's proper, upright position. Continue this procedure until all posts are cemented in place.

NOTE: I suggest you squeeze a small amount of adhesive on a glass area and then use a piece of .012 brass wire to apply the adhesive. A little bit goes a long ways here and too much glue will look sloppy and be unnecessary. When these steps are complete, I suggest painting the rails with ModelFlex engine black.

The ends of each rail should be painted with Reefer yellow and allowed to dry. ModelFlex paint will adhere to the brass better than the solvent based paints you may have on hand. I realize these steps may appear overwhelming to complete, but with a little patience, time and understanding, you will find that they are not that difficult. Give them a try.

Step 31C

Step 31D



Step 31E

STEP 32

Please refer to scans 32, 32A and 32B as reference to these next steps.

These steps represent the completed model. You will need to add any of the smaller details that you desire to add to your model at this time. Details such as class lights, coupler lift bars, mu hoses or W/S wipers should be all you need to add to complete the building process.

You will see in steps 32 thru 32B that weathering has been added also. I used Floquil colors of Rail Brown mixed in different proportions with Engine Black on the truck sideframes, grills, chassis and roof and I also used Floquil Grime on the walkways and roof to represent the effects that sun and heat have on the horizontal surfaces of dark colored locomotives. All weathering colors were thinned 80% for application. Streaking can be achieved by using Q-tips dipped in Champ decal setting solution. I would suggest that you begin to remove any undesired weathering color within 10 - 15 minutes of the time you begin weathering as the paint will begin to set and more time just makes the removal of paint that much more difficult.

Apply a flat coat of your choice to seal the weathering colors. Scalecoat Flat Glaze, thinned 80%, will give you a drop dead flat finish for the horizontal surfaces and a mix of Floquil Glaze and Testor's Dullcoat, thinned 80%, will give you a semi-gloss finish for the vertical areas such as the long and short hood sides and ends.

This concludes the SOU. GP-35 group project. I sincerely hope that everyone building this model has had as much fun as I have presenting it to you.

Step 32

Step 32A

Step 32B