CENTRAL LOCOMOTIVE WORKS

Instruction sheet EMD SD units Section 1 Page 1

Drawings: 1040-03, SD-04 and SD-05

Drills needed: 66, 63, 52, 50, 42 and 41

Tap needed: 2-56

HELPFUL SUGGESTIONS

A. These instructions are written to cover the assembly of our line of EMD SD units. Any special reference to a specific model that deviates from these instructions is covered in a supplement sheet furnished with that model but basic assembly is the same.

B. Read the instructions carefully before starting any assembly work. Drawings that are furnished show chassis parts "exploded". Note that the numbers shown on drawings give only the dash number rather than the full part number as shown on packing list.

C. It is suggested that considerable time be spent in acquainting yourself with the various parts, their proper location and use, so that when actual construction is begun, no time need be lost in identifying the parts, and, the work will proceed more smoothly.

D. Remove all "gates" from castings. Although this may seem to be a tedious chore to do all at once, you will find it much more pleasant to have this task done when you start assembly. Be sure to clean surfaces of castings where any soldering is to be done. These two steps are mentioned here so that they need not be refered to in each step of assembly. Take your time and FOLLOW THE INSTRUCTIONS!

E. The term "processing engravings" used in the instructions, means filing to line of contour of the engraved parts. Be extremely careful in working these parts as they can only be had in complete sets.

ASSEMBLY STEPS

1. Refering to drawing SD-05, note that the two center pairs of holes in chassis underframe (SD-40-4) are for the motor brackets (1035-45). The two outer pairs of holes are for the fuel tank end castings (SD-40-6). Between these two pairs of holes, at one end of frames only, is a single hole. This hole, which is for the long air tank end (1035-8), will designate the rear of the chassis. Using your #42 drill, countersink, ever so lightly, all the holes on OUTSIDE of each frame EXCEPT the two single holes - the one mentioned above and the other single hole between the two pair of double holes for motor brackets. Countersink these two holes, in each frame, on INSIDE of frames. The countersunk areas will provide better "anchor" space when you rivet and solder the parts to the frames. Before mounting any parts to frames, lay out and drill

the holes for the piping from air tanks to pass through the chassis frames. Dimensions and locations are shown on drawing -05. Use #66 drill for small wire and #52 for larger wire.

2. Mount the motor brackets (1035-45) first. Be sure to check the print for correct position. The angle goes downward. Put one of the castings in your vise with pins straight up. Put frame into position on pins and carefully peen ends of pins into the countersunk area around the holes. Be sure they are secure but don't hammer them so much that it will warp the frame! Repeat operation for other three motor brackets. (After you have all the parts riveted to frames and have frame assembly squared up, it will be best to flow a little solder over all the riveted surfaces.)

3. The body bolsters (SD-40-3A) have spot marks on the two tabs. Drill these spot marks with #42. The superstructure will be secured with screws at these four locations. Refer to drawing to be sure you install the bolsters right side up! Rivet one side of bolster to one frame only but do not secure too tightly as you did with motor brackets. This applies also when fuel tank ends (SD-40-6) are installed which you can now do in the same, one frame only. With the two bolsters and two fuel tank ends mounted to the one frame, place the other frame over the respective pins and rivet in place. Turn the assembled frame upside down on very flat surface to check for flatness and being square. When it is, secure all joints with solder. Cut off excess length of frames that extend beyond ends of body bolsters.

4. Fit air tank tubing (1035-11) to air tank end castings (1035-8 and 1035-9). Put tanks in place, again making sure the correct end goes toward front of chassis. After checking for proper fit, the pins can be riveted over and secured with solder. The tubing may also be soldered to tank end castings.

5. Install the rubber grommets (1013) in the holes in the motor brackets. Now fit the body bolster inserts. The top one (1035-3T) needs very little fitting -- mostly in rounding the corners a bit. Fit carefully and snugly or it will throw the trucks off center. Put bottom body bolster insert (1035-3B) in place, carefully fitting it between the two small "pads" on casting. The holes in the bolster inserts are for a 3/16" diameter kingpin. The inserts may be held in place with cement if they have been fitted too loosely but be sure the holes line up perfectly before so doing.

6. Take the fuel tank wrapper (SD-40-41) and carefully form it to contour of the shoulder on the fuel tank end castings. Put the large radius in first by bending it around a piece of round shaft about ½" in diameter. Take your time and make it a good fit. Do not solder in place at this time. Form and install piping for air tanks.

7. Trucks can now be assembled using drawing SD-04 and separate instruction sheet furnished.

8. Install the universal joints (UN-4) on each end of motor coupling shaft (SD-40-49) aligning the holes in shaft and universal so that the 1/16" diameter cotter pins can be inserted. Spread ends of cotter pins over so they will not fly out when running. Before installing the universals on motor shafts, file away any small burr from drilling that may be around hole in shafts. Now place universal joints on motor shafts, again using the cotter pins. Place motor in between motor brackets and install the four 6-32 screws through grommets into motor mounting plates. IMPORTANT: run heads of screws in until they just touch the face of grommets. The friction of the rubber will keep screws from backing out. Do NOT tighten so as to compress grommets or you will lose the "cushioning" effect. Also, be sure screws do not touch brushes or brush holders.

9. One end gearbox (SD-40-1), one center gearbox (SD-40-3) and one intermediate gearbox (SD-40-2) are used in each truck. Be sure you identify the -2 gearbox from the -3 gearbox as they are very similar. The -3 gearbox has the longer wormshaft. You can double-check yourself on this by comparing the insulated side of these two gearboxes with that of the end gearbox. If reversed, insulated wheels will not match up. Place another universal joint on the shaft of the -1 gearbox and secure with one of the groove pins. The pin will be a light press-fit into the holes. Put the other end of universal joint on corresponding end of -3 gearbox, securing with another groove pin. After putting a drop or two of oil inside the truck coupling sleeve (SD-40-48) and also on the flats of the two wormshafts, put sleeve over end of one of the wormshafts and insert respective shaft of other gearbox into the sleeve so that flats will match within the sleeve. Repeat operation for other three gearboxes. After putting a couple of drops of oil on all bearing surfaces, install gearboxes into sideframes as per Step 6 of truck assembly instructions.

10. With truck assembly on your bench, lift one end of chassis frame and slip universal joint onto end of the wormshaft of the intermediate gearbox (-2). Then drop chassis down over kingpin on truck bolster and secure with one of the 6-32 nuts. Insert cotter pin through universal and shaft, and spread ends of pin as before. Repeat operation for other truck assembly. Cut motor leads to length, stripping off insulation at both ends. Insert one end of wire into terminal lug (1014) and crimp in vise and solder. Install lug on kingpin and secure with a second 6-32 nut. Tighten firmly but NOT so much as to strip the cast threads! Solder other end of wire to motor brush holder making sure you allow a bit of slack in each wire so it can move freely when trucks are on curves and not pull on brush holders.

After oiling motor bearings, axle bearings, etc, your chassis is ready for operation. With proper maintainance, as with all mechanical items, it will give you years of service.

This completes Section 1.

CENTRAL LOCOMOTIVE WORKS

DIESEL DIRECT DRIVE CHASSIS KIT

PACKING LIST

2	1000-4	Chassis underframe
2	1035-3	Body bolster
2	1035-3B	Body bolster insert - bottom
2	1035-3T	Body bolster insert - top
4	1035-45	Motor bracket
2	1000-48	Coupling sleeve - truck
2	1000-49	Coupling shaft - motor
4	UN-4	Universal joint - self-telescoping
4	1013	Grommet - motor bracket
2	1014	Electrical terminal lug
2	1042	Gearbox assembly - intermediate
~~2~~ 1	1043	Gearbox assembly - end
1	2100	DC motor - double shaft
1	1044	TRANSFER GEARBOX

SCREWS

4	6-32 x 5/16	Round head
4	6-32	Nuts (with CENTRAL trucks only)
8	1/16 x 1/2	Cotter pins

DRAWING

1000-03	Chassis assembly

HELPFUL SUGGESTIONS

A. Read the instructions carefully before starting any assembly work. Drawing shows all parts of chassis in "exploded" view. Note that the numbers shown on the drawing give only the dash number, where applicable, rather than the full part number as shown on packing list.

B. It is suggested that considerable time be spent in acquainting yourself with the various parts, their proper location and use, so that when actual construction is begun, no time need be lost in identifying the parts and the work will proceed more smoothly.

C. Remove all "gates" from castings. Although this may seem a tedious chore to do all at once, you will find it much more pleasant to have this task behind you as you proceed with assembly. Be sure to clean surfaces of castings where any soldering is to be done. These two steps are mentioned here so that they need not be refered to in each of the assembly steps. Take your time and follow instructions!

ASSEMBLY STEPS

1. The chassis underframes (1000-4) are symmetrical. Take your #42 drill and countersink, ever so slighly, all the holes on OUTSIDE of each frame. The countersunk area will provide better anchore space when you rivet and solder the parts to the frame. The holes for mounting the body bolsters, which locate the truck centers, are punched into frames for the exact model you have ordered.

2. Mount the motor brackets (1035-45) first. Be sure to check the print for correct position. The angle goes downward. Put one of the castings in your vise with pins straight up. Put frame into position on pins and carefully peen ends of pins into the countersunk area around the holes. Be sure they are secure but don't hammer them so much that it will warp the frame! Repeat operation for other three motor brackets. (After you have all the parts riveted to frames and have frame assembly squared up, it will be best to flow a little solder over all the riveted surfaces.)

3. The body bolsters (1035-3) have spot marks on the two tabs. Drill these spot marks with #42. The superstructure will be secured with screws at these four locations. Refer to drawing to make sure you install the body bolsters right side up! Rivet one side of bolster to one frame only but do not secure too tightly as you did with motor brackets. With the two bolster mounted to the one frame, place the other frame over the respective pins and rivet in place. Turn the assembled frame upside down on a very flat surface and secure all joints with solder, making sure the frame remains flat and square. You can now cut off excess lenth of frames that extend beyond ends of body bolsters.

4. Install the rubber grommets (1013) in the holes in the motor

brackets. Now fit body bolster inserts. The top one (1035-3T) needs very little fitting -- mostly in rounding the corners slightly. Fit carefully and snugly or it will throw the trucks off center. Put bottom body bolster insert (1035-3B) into seat on bottom of bolster casting. The holes in the bolster inserts are for a 3/16" diameter kingpin. The inserts may be held in place with cement if they have been fitted too loosely but be sure the holes line up perfectly before so doing.

5. Before installing the universal joints (UN-4) on the motor shafts, file down any burr from drilling that may be around hole in motor shafts. Press a universal joint on each end of motor shaft, lining up the holes properly and secure to shaft with a 1/16" cotterpin as furnished in kit. Bend ends of cotterpin so that they are tightly against surface of universal joing. Place motor in between motor brackets and install the four 6-32 screws through grommets into motor plates. IMPORTANT: run heads of screws down until they just touch face of the grommets. The friction of the rubber will keep screws from backing out. Do NOT tighten so as to compress the grommets or you will lose the "cushioning" effect. ALSO: be sure the screws do not touch the brushes or brush holders.

6. The trucks can now be assembled if you are using CENTRAL'S END 4 wheel trucks. Refer to drawing 1035-04. (If you are using our Alco 4 wheel trucks, instructions are included with drawing 1061-31K.) Insert the split pins on the truck swing hanger (1035-54) in respective holes in truck sideframe (1035-50). Spread the pins over and peen very carefully. They may also be soldered although really not necessary. The journals (1035-53) have spot marks for drilling axle hole. Using a #41 drill, drill 3/16" deep minimum, making sure you hold them square with your drill or they will bind on axles in final assembly. Fit journals very carefully into slots in truck sideframes. The journals must slide freely, but not sloppy, or they will bind instead of "floating" properly when springs are in place. It is best to polish the sliding surfaces of both the journals and sideframes. Fit the pedestal binder and brakeshoe castings (1035-55R and 1035-55L) noting that there is a right and left. Check drawing -04 to identify properly. The small pin at top of brakeshore hanger fits into the hole in the hanger support arm at each end of sideframe. When fitted properly, insert the journal in slot and tack the retainer with solder. Check journal for free and proper movement in slot. Repeat operation for rest of journals and sideframes. Insert split pin on brake cylinder casting (1035-52R and 1035-52L) noting that there is a right and left, again refering to drawing to identify correctly. Springs (1035-56) can now be installed. These springs are furnished a bit on the "strong" side in event you want to add extra weight to your model. You will have to determine if springs need to be shortened by how much extra weight you want to use. For realistic action, the journals should be about 1/64" from bottom of slot when finished model is on rails. Fit bolster (1035-51) over post on rear of sideframe. NOTE: bolster should be bearing-fit on post of sideframe or it will tip and bind if too sloppy a fit. When bolster is properly fitted, assemble one sideframe to bolster using snap ring (1035-57).

7. One end gearbox assembly (1043) and one intermediate gearbox assembly (1042) are used in each truck. These gearboxes are designed and made for lubrication-free operation. It is recommended that a drop of oil be placed on each axle and worm shaft now, and peroidically, to keep exposed surfaces from rusting. (Oil and grease will not hurt nor affect the material used in gearbox housing so if you are a stickler for using grease in gearboxes, you can drill our the eyelets used in our assembly and put grease in the gearboxes and use 2-56 screws and nuts for reassembly. However, if eyelets are removed, warrenty becomes void.) Take the other two universal joints and install coupling shaft (-49) using 1/16 cotterpins. THe place other end of universal joint on end of intermediate gearbox worm shaft that has hole in it, securing with cotterpin. After putting a couple drops on oil inside coupling sleeve (-48), put sleeve over end of shaft with flat on it and insert respective shaft of end gearbox into sleeve, first aligning it so flats will match within sleeve. Place sideframes on axles and assemble trucks. With a truck assembly on your bench, lift one end of chassis frame and slip the connecting shaft into the universal joint on motor shaft. THen drop chassis down over kingpin and secure with brass nut on threaded end of truck bolster. Repeat operation with other truck assembly. Cut motor lead wires to length, stripping off insulation at both ends. Insert one end of wire into terminal lug (1014) and crimp in vise or solder. Install lug on kingpin and secure with second 6-32 nut. Tighten firmly but NOT so much as to strip the cast threads! Solder other end or wire to brush holder making sure you have a bit of slack in each wire so it can move freely when trucks are on curves and not pull on the brush holders.

After oiling motor bearings, axle bearings, etc, your chassis is ready for operation.

CENTRAL LOCOMOTIVE WORKS

Instruction supplement for installing can motors -- ~~GP series~~

Revised Packing List (Changed items only)

2	1013	Grommet - standard
2	1013-S	Grommet - small
2	1014	Electrical terminal lug - standard
2	1014-P	Electrical terminal lug - push-on
~~2~~	~~UN-4~~	~~Universal joint - 3/16 x 3/16~~
2	UN-~~X~~7	Universal joint - 5/32 x 3/16
2	6-32 x 5/16	Round head
2	4-40 x 3/8	Round head

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A. After completing all the operations as outlined in Assembly Step 1, refer to Step 2 and drawing 1005PLM. Note that the one-piece motor brackets (1005-PL) replace the four individual motor brackets (1035-45) shown on drawing 1035-03. Drawing 1005-PLM shows only the one-piece motor brackets and their immediately related parts for clarity.

For the sake of reference, let's put the end of the motor with the two terminal posts toward rear of chassis (although this is not critical as long as you keep corresponding parts in proper places). However, reference to front or rear of motor is based on the above. Front plate of motor has four mounting holes tapped 6-32 and rear plate has three holes tapped 4-40. Only two holes of each are used for mounting.

B. After you have completed Step 4, install the two grommets with the small hole (1013-S) in REAR motor bracket and the standard grommet with larger hole (1013) in FRONT motor bracket. Slide the rear grommets to top of slot in motor bracket and front grommets to bottom of slot. Continue with Step 5.

C. Again refering to revised packing list, two of the universal joints (UN-4) have the standard 3/16" bore in each end. The other two (UN-5) have a 3/16" bore in one end and 5/32" bore in other end. The smaller bore mounts on ends of motor shaft. Continue with Step 8 and balance of instructions installing the 6-32 screws in front motor bracket and the 4-40 screws in rear bracket.

D. Two small push-on type electrical terminal lugs (1014-P) are also furnished as shown on drawing 1005-PLM. These eliminate the need to solder pick-up wire to motor terminal posts which is to be strictly avoided as any heat on these posts will melt the insulation around them. They may be easily disconnected if necessary.

CENTRAL LOCOMOTIVE WORKS

Instruction revisions for one-piece long hood for GP and SD units

Refering to AssemblyStep #9, you will note that the upper corners of rear end nose casting (-21) will have to be filed away slightly to allow the casting to fit snugly into the one-piece hood. Fit carefully so that no gaps will be present.When fitted, put the long hood top, rear, engraving (-20C) in place checking to see that it fits the flange on the casting properly. Process this engraving so that it seats flatly on top of hood and that its edges line up with edge of radius of hood. The front edge is to line up with the etched line on hood. When you are satisfied with the fit, put top piece aside until later.

Continue with Step 10.

In Step 11, disregard the 4th sentence as the etched lines on floor for cab rear are somewhat wrong but this will not affect assembly.

Continue through Step 14.

Disregard the first section of Step 15 where it mentions the roof radius frames as they are no longer used.

In second paragraph of Step 15, after drilling holes as stated, solder -20C in place. This is best done by tinning with solder, both the under surface of -20C and top surface of long hood in area that -20C mounts. Then clamp -20C in place in perfect alignment and heat accordingly. The center top plate (-20B) is now part of the one-piece long hood so drill holes as specified. Transfer holes in -20C through hood.

Continue with Step 16 after processing engraving -20A so that edges are flush with long hood sides. Solder in place, also filling the small notches with solder and blend to shape.

Continue with remaining instructions.

CENTRAL LOCOMOTIVE WORKS

Packing List

E.M.D. SD-40-2 Diesel Locomotive Section 2 Page 1

1	SD-40-2-1	Mainframe floor
1	SD-40-2-2R	Mainframe side - right
1	SD-40-2-2L	Mainframe side - left
1	SD-40-2-2A	Air duct top plate
1	1035-2B	Battery box - right
1	1035-2C	Battery box - left
2	1035-5R	Pilot steps - right
2	1035-5L	Pilot steps - left
2	1035-7	End sill
2	1035-7A	End sill bracket
2	1035-7B	End sill footboard
1	1035-12R	Low hood - right
1	1035-12L	Low hood - left
1	1035-13	Handbrake housing
1	1035-14	Handbrake mechanism
1	1035-15	Cab front
1	1035-16	Cab headlight box
1	1035-17	Cab rear
2	1035-18	Cab side
1	1035-19	Cab roof
1	SD-40-2-20	Long hood - one-piece formed
1	SD-40-2-20A	Long hood top plate - front
1	SD-40-2-20C	Long hood top plate - rear
2	1045-20D	Air inlet grill
1	1038-20E	Electrical cabinet door
1	1040-20H	Dust bin blower cover
1	1035-21	Long hood end
1	1038-22	Air duct
2	1040-23	Radiator inlet grill
2	1035-24	Sandbox filler cap
4	1035-25	Classification light
2	1035-26	Walkway light
2	1035-27	Coverplate - round
8	1035-28	Hinge
5	1035-29	Lifting hook
1	1045-30	Exhaust stack
1	1045-30A	Vent
1	1040-30P	Exhaust stack baseplate
1	1035-31	Airhorn assembly
8	1035-32	Handrail stanchion - long
24	1035-33	Handrail stanchion - medium
4	1035-34	Handrail stanchion - platform
5	1035-36	Cooling fan guard - large
12	1035-37	Lifting ring
2	1035-38	Cab window visor
1	1045-39R	Dynamic brake housing - right
1	1045-39L	Dynamic brake housing - left
2	1045-39D	Dynamic brake housing access door
1	1038-40	Electrical cabinet air filter box
2	1035-46	Hinged footplate

(continued on Page 2 - over)

CENTRAL LOCOMOTIVE WORKS

Packing List

SCREWS

5	1-72 x 5/16	Round head
2	2-56 x 3/16	Fillister head
4	2-56 x 1/4	Fillister head
14	2-56	Nuts

WIRE

5 ft.	1/32"	Brass

DRAWINGS

1035-01	Frame assembly
1035-02	Body assembly
1045-38	Detail mounting

2

CENTRAL LOCOMOTIVE WORKS

Instructions supplement for E.M.D. SD-40-2

1. Refer also to instruction revision sheet for one-piece long hood.

2. Along with Assembly Step 15 -- on top of the one-piece long hood, in what would be area of -20B (shown as separate piece on Drawing 1035-02), there are three etched spot marks along the center line of hood. The rear one is to be drilled with #42. The vent casting (-30A) is mounted here witha 2-56 x 3/16 screw. There is a spot mark on underside of casting. Drill #50 but do not go all the way through. Tap 2-56 and mount vent with screw furnished. Tighten FIRMLY. The other two spot marks are drilled with #47. The fan guards (-36) are to be mounted in these locations with 1-72 x 5/16 screws. There are also four etched spot marks near edges of hood where lifting rings (-37) are to be mounted. Refer to second paragraph of Step 15 for these.

3. Along with Step 16 -- there is an etched locating spot mark approximatelyin center of -20A. Drill with #42. The dust bin blower cover (-20H) is mounted here using a 2-56 nut.

4. On top of long hood, at forward end, there are four small etched corner angles. These locate the small rectangular etching (-20P) which is the exhaust stack base plate. In its center, there is an etched locating spot. Drill with #42. Solder base plate in place making sure it is properly located. Then transfer hole of same size through top of hood. The exhaust stack is mounted here with a 2-56 x 3/16 screw. The stack casting has a spot mark on the underside -- drill#50 and tap 2-56. With blower cover mounted in place, -20A can now be soldered in place.

5. After completing Step 16, the dynamic brake housing castings (-39R & -39L) may be installed. Refer to drawing 1045-38 for proper location. Fit very carefully so that no gaps show. You will note small hole "cast in" just ahead of fins. Run a #42 drill through it and mount the dynamic brake access door (-39D) with a 2-56 nut. Note that small hinges on door go on the bottom. It is recommended that these doors be secured with solder also.

Solder dynamic brake housing castings in place, again making sure the section with the fins goes towards REAR of locomotive.

6. Continue with Step 17 of instrcutions.

CENTRAL LOCOMOTIVE WORKS
PACKING LIST AND INSTRUCTIONS FOR ASSEMBLY OF EMD 4 WHEEL TRUCKS

4	1035-50	EMD truck sideframe -- 4 wheel
2	1035-51	Truck bolster
4	1035-52R	Truck brake cylinder - right
4	1035-52L	Truck brake cylinder - left
8	1035-53	Truck journal - bronze
4	1035-54	Truck swing hanger
4	1035-55R	Pedestal binder & brakeshoe - right
4	1035-55L	Pedestal binder & brakeshoe - left
16	1035-56	Journal spring
4	1035-57	Snap ring

Insert the split pins on the truck swing hanger (1035-54) in respective holes in truck sideframe (1035-50). Spread pins over and peen very carefully. They may also be soldered. The journals(1035-53) have spot marks for drilling axle hole. Using #41, drill 3/16" deep minimum, making sure you hold them square with your drill or they will bind on axles in assembly. Fit journals into slots in truck sideframes very carefully. The journals must slide freely, but not sloppy, or they will bind instead of "floating" properly when springs are in place. It is best to polish the sliding surfaces of both the journals and sideframes. Fit the pedestal binder and brakeshoe casting (1035-55R and -55L). Note these are right and left. The small pin at top of brakeshoe hanger fits into hole in the hanger support are at each end of sideframe. When fitted properly, insert journal in slot and tack the retainer with solder. Check journal for free and proper movement in slot. Repeat operation for rest of journals and sideframes.

Insert split pin on brake cylinder casting (1035-52R and -52L) noting there is a right and left. Check drawing to identify properly. Springs (1035-56) can now be installed. These springs are furnished a bit on the "strong" side in event you want to add extra weight to the finished model. You will have to determine if springs need to be shortened by how much weight you may want to use. Fit bolster (1035-51) over post on rear of sideframe. NOTE: bolster should be a bearing-fit on post or sideframe will possibly tip and bind if too sloppy a fit.
When bolster is properly fitted, secure in place with snap ring (1035-57). Trucks are now ready for gearboxes or wheels for completing the model.

DRAWING

1035-04 Truck assembly

If the bolster tends to have a slight "rock" on sideframe post, four thin delrin washers are provided to compensate for this. The washer should fit between the bolster and the snap ring. File inner face of bolster slightly so that washer will fit properly allowing the bolster to pivot freely.

CENTRAL LOCOMOTIVE WORKS

E.M.D. GP-35 Diesel Section 2

PACKING LIST

1	1035-1	Mainframe - floor
1	1035-2R	Mainframe side - right
1	1035-2L	Mainframe side - left
1	1035-2A	Air duct top plate
1	1035-2B	Battery box - right
1	1035-2C	Battery box - left
2	1035-5R	Pilot steps - right
2	1035-5L	Pilot steps - left
2	1035-7	End sill
2	1035-7A	End sill bracket
2	1035-7B	End sill footboard
2	1035-10	Roof radius frame
1	1035-12R	Low hood - right
1	1035-12L	Low hood - left
1	1035-13	Handbrake housing
1	1035-14	Handbrake mechanism
1	1035-15	Cab front
1	1035-16	Cab headlight box
1	1035-17	Cab rear
2	1035-18	Cab side
1	1035-19	Cab roof
1	1035-20R	Long hood side - right
1	1035-20L	Long hood side - left
1	1035-20A	Long hood top - front
1	1035-20B	Long hood top - center
1	1035-20C	Long hood top - rear
2	1035-20D	Air inlet screen
1	1035-21	Long hood end
1	1035-22	Air duct
2	1035-23	Radiator inlet grill
2	1035-24	Sand box filler cap
4	1035-25	Classification light
2	1035-26	Walkway light
2	1035-27	Cover plate - round
8	1035-28	Hinge
5	1035-29	Lifting hook

Continued on Page 2

CENTRAL LOCOMOTIVE WORKS

E.M.D. GP-35 Diesel Section 2

Packing list

1	1035-30	Exhaust stack
1	1035-31	Airhorn assembly
9	1035-32	Handrail stanchion - long
15	1035-33	Handrail stanchion - medium
4	1035-34	Handrail stanchion - platform
1	1035-35	Cooling fan guard - small
2	1035-36	Cooling fan guard - large
11	1035-37	Lift ring
2	1035-38	Cab window visor
2	1035-46	Hinged foot plate
2	C-2	Magnetic coupler
2	C-2	Coupler centering spring

SCREWS

3	1-72 x 5/16	Round head
4	2-56 x 3/16	Fillister head
2	2-56 x 1/4	Fillister head
2	2-56 x 3/8	Fillister head
4	2-56	Nuts

DRAWINGS

1035-01	Frame assembly
1035-02	Body assembly

CENTRAL LOCOMOTIVE WORKS

Instruction sheet - E.M.D. GP-35 Section 2 Page 1

Drawings: 1035-01 & 1035-02

Drills needed: 22,31,36,42,46,47,50,53,55, 57,60,61, &66

Taps needed: 1-72 & 2-56

HELPFUL SUGGESTIONS

A. Read the instructions carefully before starting any assembly work. Drawings that are furnished show superstructure parts "exploded". Note that the numbers shown on drawings give only the dash number rather than the full part number as shown on the packing list.

B. It is suggested that considerable time be spent in acquainting yourself with the various parts, their proper location and use, so that when actual construction is begun, no time need be lost in identifying the parts and the work will proceed more smoothly.

C. Remove all "gates" from castings. Although this may seem to be a tedious chore to do all at once, you will find it much more pleasant to have this task done when you start assembly. Be sure to clean surfaces of castings where any soldering is to be done. These two steps are mentioned here so that they need not be refered to in each of the assembly steps. Take your time and follow the instructions!!!

D. The term"Processing engravings" used in the instructions, means filing to blue lines of contour of the engraved parts. Be extremely careful in working these parts as they can only be had in complete sets.

ASSEMBLY STEPS

1. There are three spot marks on the endsill bracket (1035-7A) that locate it on the three corresponding pins on back of endsill casting (1035-7). Using a #60 drill, clean out these holes so that they fit over the pins and so that the faces of each casting meet and are flush. Before soldering together, lay out the coupler mounting hole on center of bottom surface of coupler pocket on endsill. Drill through the bottom of coupler pocket and part way through top of the pocket, being careful not to break through the angular surface of the top side. Tap 2-56. Now fit the endsill footboardcastings (1035-7B) to endsills. These will be almost a "snap fit" unless some flash prevents it from fitting into place. Be sure they fit all the way back on the two vertical braces. You will need a clearance hole in center area to remove coupler mounting screw at time of painting. Locate accurately and drill with #36 to clear head of screw. It is suggested the head of screw be filed down in diameter to clear this #36 hole rather than have any larger hole.

The small brackets for coupler lift bar are cast on the endsill and are spot marked for drilling. Be very careful to have the endsillabsolutly square with your #66 drill or you will break out the edge of the hole. After you have drilled the outer bracket, pass drill right on through it to drill the inner bracket. Flip the endsill and repeat operation for the other two brackets.

Right above the two center lift bar brackets are two more cast-on brackets to which the hinged foot plate (1035-46) will mount. These are also spot marked for drilling. Again using #66, drill very carefully so as not to break through the hole. The foot plate is best mounted later. There are eight spot marks on face of endsill where air and steam lines mount. If you are going to add these details, which are optional, check parts you will use and drill to size accordingly. These details can be added later.

On the face of endsill, near the top, are two pair of spot marks where the handrail stanchions (1035-33) will be mounted. Using #61, drill the bottom spot mark only of each pair. (The top location is not used.) Now solder the endsill bracket (1035-7A) to endsill and then the footboard (1035-7B) first making sure they are square and even.

2. Take the mainframe floor etching (1035-1)and very carefully trim away all excess metal up to edge of safety tread. Note that there is a small angle at rear edge of step location. The contour is of utmost importance to appearance of your model so proceed cautiously, checking every few strokes of file so as not to file away too much. At each end of floor you will note two small squares with plain surface within the etched safety tread area. These spots are where the center pair of handrail stanchions (1035-34) will be located later. A small section of floor between these squares will have to be filed away to clear top edge of endsill casting at the hinged foot plate mounting. Again, fit very carefully so no gaps are left between casting and floor. The endsill is to fit back against small flats of safety treadat front edge of step castings (1035-5R and 1035-5L). FIT CAREFULLY! Do not solder endsill to floor at this time.

3. The coupler lift bars can now be made. It is suggested that they be made in three pieces. Form the handle section as on any other type of lift bar. Allow the straight section that passes through the brackets to extend to center of endsill. Form the loop section and solder in place. The slight overlap will not be noticed as it is covered somewhat by the hinged foot plate. To install the foot plate (1035-46), very carefully bend the cast-on brackets on endsill casting slightly outward so that the foot plate will fit between the brackets in a vertical position. T e bend the brackets back over the small pivot pins cast in the footplate. Do not force or you will only damage bracket. Fit carefully and these foot plates will pivot up and stay in place when not used in M.U. operation.

4. On top surface of mainframe floor (1035-1), at the ends of center cut-out section, you will find four small etched circles. These are where the chassis will be fastened to the mainframe floor. With a sharp pointed center punch, locate the exact center of each circle. Drill #50 and tap 2-56. Be very critical with this operation so the chassis will line up properly with superstructure.

5. Before soldering endsill assembly to floor, put them in place and check fit and alignment of step castings (1035-5R and 1035-5L). When satisfied with fit, solder endsill assemblies to mainframe floor being careful to see that they are in proper place and at right angles to floor. On the vertical wall of step castings, you will note a small spot mark beside a raised flange detail. Drill spot mark with #66. This is where bottom of handrail is anchored later. Step castings should require but very little fitting. They can now be soldered in place.

6. The two mainframe sides (1035-2R and 1035-2L) are to be fitted. Very carefullyfile away excess metal down to raised blue line. Keep all edges straight or it will be very obvious on finished model. Put in place on edge of floor between step castings. Trim off excess length at rear end only, first making sure the front edges have fitted correctly. The sides should fit snugly between step castings. Do not solder in place. You will note there are ten locations for handrail stanchions on each side. Measure up 1/32" from bottom edge of these raised stanchion locations. Also scribe a fine vertical line exactly in center of locations. Be extremely accurate in laying out these holes for the stanchions or your handrails will look as if they go over hill and dale rather than perfectly straight! After center punching these hole locations, drill #61. Remove all burrs from holes on rear of frames so they will lie flat against the floor edge. Tack with solder at each end and in center. Check to make sure you have them properly aligned. When satisfi4d, finish soldering.

7. Fit the pair of low hood castings (1035-12R & 1035-12L) so that they are square all the way around. Do not solder together. The handbrake housing (1035-13) has small hole cast in. Run #50 drill through this hole. Insert the split pin on the handbrake mechanism (1035-14) in this hole. Press in firmly and spread the split pin to hold it while soldering. On inner wall of left low hood casting (1035-12L) are two pins cast on each side of open slot. These are to locate the handbrake housing when soldering in place.

Those who wish to model some prototype other than this basic GP-35 locomotive, can modify the nose castings, etc, for other headlights, etc. These instructions are concerned with the basic locomotive.

The two nose castings may now be soldered together. If you prefer, you can solder the handbrake housing in place before assembling nose castings. There are two spot marks for grab-

iron on side of right nose casting; also two on top surface. There are also spot marks for grabirons on front face of each nose casting. Drill these eight spots with #66. Refer to drawing 1035-02 for these and following locations and parts. (The same parts are mounted on rear nose casting (1035-21) so you might as well drill this casting at same time. Details 1035-28, hinge, and lifting hook, 1035-29, are cast as a group and left that waywhen packed in kit to avoid losing these small parts. Refer to upper right hand corner of drawing 1035-02 for enlarged view of these details. Drill spot marks #55 for hinge (1035-28) and lifting hook (1035-29). Note that two of -29 are on front faces of low hood casting and one on each side of castings as mentioned on drawing.

The sandbox filler cap (1035-24), classification lights (1035-25) and walkway light (1035-26) are also cast in a group. Carefully separate them leaving about 1/8" stem on each. Drill #46for filler caps and classification light. Then redrill the classification light holes ONLY with #22. Be sure to use correct spot marks for respective parts. The two round cover plates (1035-27) are used only on rear nose casting (1035-21) as shown on drawing. Drill #42. After installing all details and grabirons, put completed low hood and rear nose castings aside until later.

8. The cab sides (1035-18) are identical castings. To make a right and left side, file away one marker light bracket on each sideso that remaining bracket is at front end of each side. Just above center, at front and rear of cab sides, are two spot marks. Drill #66. The handrails will terminate in these holes. Note that the front and rear edges of cab sides are notched to mate with similar notches in cab front (1035-15) and cab rear (1035-17). Clean up these notches, if necessary, with small file so that when cab is assembled, you will have a flush, square corner. The headlight box (1035-16) is cast open so that you may add working lights, etc. It is recommended that you arrange for headlight mounting at this time. Drill the spot mark on top surface of headlight box with #57 where airhorn assembly (1035-31) will be mounted later. The headlight box may now be soldered in place on cab front. Make certain you do not install it upside down! Wide border is at top. Top surface should be flush with top of cab roof (1035-19). Check this before soldering.

9. Before doing any of cab assembly work, process the long hood sides (1035-20R & 1035-20L). Again, be very critical when filing to the line so that all the edges are straight and square. Note the step in the top edge of each side at the cab end. The top edge must be .020 HIGHER than the rear cab casting (1035-17). This is thickness of cab roof so put the cab roof in place on casting when checking for height. You will note two small flanges on cab rear casting which locate the hood sides in assembly. Be sure the right hood side fits snugly against face of cab casting between flange and door handle. Fit the rear end nose casting (1035-21) to hood sides.

Make sure the sides fit into the flanges so no gaps are present. While working with this end casting, check the long hood top, rear, engraving (1035-20C) to see that it fits the flange properly, first processing the engraving. After you are satisfied with the fit, put top piece aside until later.

10. Now the radiator inlet grills (1035- 23) may be mounted to the long hood sides as shown on drawing -02. You will note a rectangular panel is engraved on the hood side where these castings are to be located. Locate the holes, for the threaded studs which are on back of grill castings, 3/4" in from the OUTSIDE line at end of panel and 7/32" up from INSIDE bottom line of panel. Centerpunch and drill #42. Note that the casting has a wider and longer flange at TOP edge as shown on drawing. Hold the castings in place with the 2-56 nuts that are furnished. Tighten firmly but being careful not to strip the threads. You can also solder in addition.

11. Final assembly of body to floor can now be done. Place cab rear (1035-17) at proper location so that face of outside edge of cab rear wall is flush with vertical edge of mainframe side (1035-2L). Refer to note on drawing 1035-01. If you have fitted mainframe sides properly, the cab rear will line up with lines engraved on top surface of mainframe floor. IMPORTANT: make sure the car rear is exactly square- both vertically and horizontally- and then just tack with small amount of solder on one edge only. Check for squareness again and then solder other edge. Place the two cab sides and cab front on top edge of mainframe sides. If you have some soft wire available, you can hold these three castings in place while soldering. Tack lightly at first, checking each time to make sure cab is square. If it isn't, it will affect all the rest of assembly.

12. Process the two battery box covers (1035-2B & 1035-20C. On underside of each, lay out very accurately, a line exactly under the engraved bend line on top side. File a Vee notch on this line on underside about half metal thickness deep. This will give a sharp accurate bend. (On 1035-2C, are two engraved spots on what will be vertical end of this battery box. Centerpunch and drill #66 for grabiron.) Put in vise and bend 90 degrees as shown on drawing 1035-01. Put low hood assembly in place on mainframe floor. Fit the two battery boxes between nose casting and mainframes sides. Make these a snug fit and they will stay in place when soldering the nose and boxes to floor. Before soldering, install grabiron on 1035-2C and the small step, which can be made for a piece of scrap brass, on 1035-2B. It is not necessary to flow solder along entire edge of nose when soldering to floor. Make sure top surfaces of battery boxes remain flush with top edges of mainframe sides.

13. Process air duct top plate (1035-2A). Layout bend line and notch as you did on the battery boxes. With long hood sides (1035-20R & 20L) and rear nose casting (1035-21) in

place on mainframe floor, fit air duct top plate in place as shown on drawing -02. Make sure hood sides are parallel with edges of floor. While parts are in place, check to see if they all fit snugly against floor. Correct any twist or misfit before doing any soldering. To help keep 1035-2A level with top edge of mainframe side, you can make a little spacer from scrap brass and solder to underside of -2A near cab end, to support it. Before doing any soldering, refer to drawing -02 for location of air duct (1035-22). There is a panel engraved on 1035-20L where the air duct is to be mounted. Scribe a line 3/4" up from bottom line of panel. Locate center of width of panel. Centerpunch and drill #31. Note this casting has a split pin for mounting which should not be done at this time. Put aside. Process the two air inlet screens (1035-20D) and solder in resepctive panel on 1035-20R and -20L.

14. With rear nose casting again in place with long hood sides, Tack each side to casting. Check for squareness and alignment. When true, tack casting to floor. Check again and when satisfied with alignment, finish soldering sides to nose casting and to cab rear casting. Again, it is not necessary to flow solder along each inch of joins. Work first one end, then the orher, to prevent too much heat from warping the sides or floor. Use your own good judgement as to how much of the joins you care to solder.

The small step at rear cab door on right side can be made and mounted as you did the one on the battery box. Solder 1035-2A in place carefully and install 1035-22. Make sure it fits snugly against all edges.

15. Put one of the roof radius frames (1035-10) in place at rear end of long hood sides as shown on drawing -02. Squarre up ends of casting so they fit squarely against end casting with no gaps. T e second frame casting will have to be cut to fit between the one in place and the step on the hood sides. Fit carefully so no gaps are present. With both radius frames in place, solder carefully to hood sides from inside. Fit long hood top -rear-(1035-20C) to seat on flange of radius frames.You will note that the rear top is slightly thicker metal than the long hood top- center-(1035-20 B) and long hood top-front-(1035-20A). This is due to design of prototype.

Down center of -20C you will find five spot marks which are centers for the cooling fan guards (1035-35 and 1035-36). If you are building this kit as a GP-35, use the center and two very end spots for centers. If you are following a GP-28 prototype, use the center and the inner one of each outer pair of spot marks. If you prefer to mount the fan guards with screws, drill #53 in center of each fan guard and tap 1-72. Drill #47 at the three respective locations on 1035-20C. Before mounting the fan guards with the 1-72 screws furnished, drill the four spot marks in the corner of -20C for the lifting eyes (1035-37),as shown on drawing -02, with #60. Also drill spot marks for lifting eyes (or rings) ---two on -20B and five on -20A. Do not install lift rings at this time. Mount the

four fan guards and solder -20C in place. After fitting -20B, solder in place also.

16. The cab roof (1035-19) should require very little fitting if any at all. Just be sure it fits against all edges so gaps are present. The tab fits between the two long hood sides. Top of roof should be flush with top edge of sides. Carefully solder in place. After fitting -20A, solder in place. The tab on cab roof serves as support and soldering surface for -20A. Locate exhaust stack (1035-30) on -20A using small etched crossmark as center. Solder in place. Mount airhorn (1035-31) and lifting rings (1035-37) in their respective holes and secure with solder.

17. Handrail stanchions may now be mounted. Note there are three different sizes. The four 1035-34 are mounted on front and rear decks, one each side of hinged foot plate. The longer ones (1035-32) are mounted as shown on drawing -02 as are the medium length (1035-33). Note that 1035-33 are also used on front and rear decks as shown on drawing. The upper end of the stanchion has a semi-formed loop. Using small flat nosed pliers, carefully bend the loop to a more closed position, leaving loop open just enough to insert the 1/32" wire. Be extremely careful when soldering -34 so no solder runs into the pivots of the hinged foot plates. When all soldered in place, form all the handrails with wire furnished in kit. After checking to see if all stanchions hold wire in leverl position, bend the loops to close over the wire. Secure wire to each stanchion with minimum amount of solder.

18. A pair of C-2 magnetic automatic couplers are furnished in kit. Trim off open portion at rear of shank so that small so that small hole at approximate center of shank is now the end of the shank. Locate in coupler pocket so that top of uncoupling pin is 5/32" from rounded face of coupler pocket. Drill mounting hole in shank using #42. Mount in place using a 2-56 x 1/4 screw. Slip loop of C-2 centering spring through small hole in end of shank. With body mounted on chassis, locate a spot for centering screw--2-56 x 3/8--to which other end of spring mounts, just so the screw will clear the gearboxes when pivoting on curves. You may have to remove a few coils from spring in order to have enough tension on it to pull coupler back to center position when it is moved off center. This is very important for remote coupling. The window visors may now be mounted (1035-38).

Your finished GP-35 is now ready for painting. Be sure all excess solder is cleaned away before painting. You have a well-engineered model so give it the good paint job it deserves. With proper servicing, as with all mechanical items, it will give you many years of service.

This completes Section 2.

CENTRAL LOCOMOTIVE WORKS

PACKING LIST

E.M.D. GP-35 Diesel Section 1

2	1035-3	Body bolster
2	1035-3B	Body bolster insert- bottom
2	1035-3T	Body bolster insert- top
2	1035-4	Chassis underframe
2	1035-6	Fuel tank end
2	1035-8	Air tank end- long
2	1035-9	Air tank end- short
2	1035-11	Air tank tubing
1	1035-41	Fuel tank wrapper
4	1035-45	Motor bracket
2	1035-48	Coupling sleeve- truck
2	1035-49	Coupling sleeve- motor
4	1035-50	EMD truck sideframe- 4 wheel
2	1035-51	Truck bolster
4	1035-52R	Truck brake cylinder- right
4	1035-52L	Truck brake cylinder- left
8	1035-53	Truck journal
4	1035-54	Truck swing hanger
4	1035-55R	Pedestal binder & brakeshoes- right
4	1035-55L	Pedestal binder & brakeshoes- left
16	1035-56	Journal spring
4	1035-57	Snap ring
2	1035-58	Gearbox assembly- end
2	1035-59	Gearbox assembly- intermediate
1	1035-60	Motor
4	1013	Grommet
2	1014	Electrical terminal lug
12 inches		Hookup wire

Screws

4	5-40 ~~6-40~~ x 5/16	Fillister head
4	6-32	Nuts

Drawings

1035-03	Chassis assembly
1035-04	Truck assembly

CENTRAL LOCOMOTIVE WORKS

Instruction sheet - E.M.D. GP-35 Section 1 Page 1

Drawings: 1035-03 & 1035-04

Drills needed: 41, 42, 52 and 66

Taps needed: None

HELPFUL SUGGESTIONS

A. Read the instructions carefully before starting any assembly work. Drawings that are furnished show all the parts of the chassis and trucks "exploded". Note that the numbers shown on drawings give only the dash number rather than the full part number as shown on packing list.

B. It is suggested that considerable time be spent in acquainting yourself with the various parts, their proper location and use, so that when actual construction is begun, no time need be lost in identifying the parts and the work will proceed more smoothly.

C. Remove all "gates" from castings. Although this may seem a tedious chore to do all at once, you will find it much more pleasant to have this task behind when you start assembly. Be sure to clean surfaces of castings where any soldering is to be done. These two stept are mentioned here so that they need not be refered to in each of the assembly steps. Take your time and follow the instructions!!!

ASSEMBLY STEPS

1. Refering to drawing 1035-03, note that the chassis underframe (1035-4) has two different dimensions from the end to the first hole. The 1-3/4" dimension is the front end as noted on the drawing. It is recommended that you mark this end in some manner so they will not be reversed during assembly. Take your #42 drill and countersink, ever so lightly, all the holes on the OUTSIDE of each frame EXCEPT the two very center holes which are for the air tanks. Countersink this pair on INSIDE of frames. The countersunk area will provide better "anchor" space when you rivet and solder the parts to the frames. Before mounting any of parts to frames, lay out and drill the holes for the piping that pass through the frame. Dimensions and locations are shown on drawing -03. Use #66 drill for small wire and #52 for larger wire.

2. Mount the motor brackets (1035-45) first. Be sure to check print for correct position. Put the casting in your vise with pins straight up. Put frame in position and carefully peen the pins into the countersunk area around the hole. Be sure they are secure. Repeat operation for other three motor brackets. (After you have all the parts riveted to frames and have frames squared up, it will be best to flow a little solder over all the riveted surfaces.)

3. The body bolsters (1035-3) have spot marks on the two tabs. Drill these spot marks with #42. The superstructure will be secured with screws at these four locations. Refer to drawing-03 to make sure you install the sody bolsters right side up! Rivert one side of bolster to one frame only but do not secure too tightly as you did with motor brackets. This applies also when fuel tank ends (1035-6) are installed which you can now do in the same, one frame only. With the two bolsters and two fuel tank ends mounted to the one frame, place the other frame over the respective pins and rivet in place. Turn the assembled frame upside down on a very flat plate and secure all joints with solder, making sure the frame remains flat and square.

4. Fit air tank tubing (1035-11) to the air tank end castings (1035-8 and 1035-9). Put tanks in place, again making sure the correct end goes toward the front of chassis. After checking for proper fit, the pins can be riveted over and secured with solder. The tubing may also be soldered to the tank end castings.

5. Install the rubber grommets (1013) in the four motor brackets. Take the fuel tank wrapper (1035-41) and carefully form it to the contour of the shoulder on the tank end castings. Put the large radius in first by bending it around a piece of round stock about $\frac{1}{2}$" diameter. Take you time and make it a good fit. Do not solder in place at this time. Form and install the piping for the air tanks.

6. The trucks can now be assembled using drawing 1035-04. Insert the split pins on the truck swing hanger (1035-54) in respective holes in truck sideframe (1035-50). Spread the pins over and peen very carefully. They also may be soldered although not necessary. The journals (1035-53) have spot mark location for drilling on axle holes. Using #41, drill 3/16" deep minimum, making sure you are holding them square with your drill or they will bind on axles in assembly. Fit the journals very carefully into the slots in the truck sideframe. The journals must slide freely but not be sloppy or they will bind instead of "floating" properly when springs are in place. It is best to polish the sliding surfaces of both the journals and sideframes. Fit the pedestal binder and brakeshoe casting (1035-55R and 1035-55L). Note these are a right and left. The small pin at top of brakeshoe hanger fits into the hole in the hanger support arm at each end of sideframe. When fitted properly, insert the journal in slot and tack the retainer with solder. Check journal for free and proper movement with slot. Repeat operation for rest of journals and sideframes. Insert split pin on brake cylinder casting (1035-52R and 1035-52L) noting there is a right and left casting. Check drawing -04 to identify properly.

Springs (1035-56) can now be inserted. These springs are made somewhat on "strong" side in event you want to add extra weight to your finished model. You will have to deter-

mine if springs need be shortened by how much weight you may want to use. Fit bolster (1035-51) over post on rear of sideframe. NOTE: bolster should be bearing fit on post or sideframe will possibly tip and bind if you make it a sloppy fit. When bolsters properly fitted, assemble one sideframe to bolster using snap ring (1035-57).

7. The individual enclosed gearboxes are assembled and filled with grease at the factory. Check each gearbox for free turning in event they might have been subject to rough handling during shipping. One end gearbox (1035-58) and one intermediate gearbox (1035-59) are used in each truck. Place the coupling sleeve (1035-48) over the hex driver on each worm shaft. Make sure the sleeve does not bind on the hex driver which can keep the gearboxes from equalizing properly on track. Place sideframes on axles and assemble other sideframe using snap ring. Repeat assembly for other truck.

8. Fittop body bolster insert (1035-3T) into seat cast in top of body bolster (1035-3). Fit snugly or it will be offcenter. Put bottom body bolster insert (1035-3B) into seat on bottom of bolster casting. Install truck bolster kingpin through both inserts and check for alignment and freedom of movement. The inserts may be held in place with cement if they have been fitted too loosely. Do not install trucks at this time.

9. Before mounting motor (1035-60), check fitting of motor coupling sleeve (1035-49) on the hex drivers on motor shaft and worm shaft of intermediate gearbox. This fit should not be too tight nor too loose as the hex drivers will "seat" themselves after some " break-in running". Mount motor to motor brackets using four 6-40 x 5/16" screws. IMPORTANT: run heads of screws down until they just touch the face of the grommets. The friction of the rubber will keep screws from backing out. Do NOT tighten so as to compress the grommets. If you compress the grommetsm you will lose the cushioning effect. ALSO: be sure the screws do not touch the brushes or bruch holders! Now put coupling sleeve (1035-49) on motor shaft and put truck in place through bolster. Put one 6-32 nut on threaded end of bolster and tighten against shoulder of kingpin. Don't tighten so much that you strip the threads! Cut the motor lead wires to fit from kinpin to brush holder. place terminal lug (1014) on one end of lead wires and solder. Insatll lug on bolster kingpin and hold in place with second 6-32 nut. After soldering wires to brush holders, your chassis is now ready for operation. Before any amount of running, be sure to oil all bearing surfaces. With proper care and lubrication, this drive will give you years of trouble free operation. The gearboxes have removable plugs for adding grease when necessary. The fuel tank wrapper can now be installed and soldered to tank end castings.

This completes Section 1.

CENTRAL LOCOMOTIVE WORKS

E.M.D. GP-40 Diesel Section 2 Page 1

PACKING LIST

1	1040-1	Mainframe - floor
1	1040-2R	Mainframe side - right
1	1040-2L	Mainframe side - left
1	1040-2A	Air duct top plate
1	1035-2B	Battery box - right
1	1035-2C	Battery box - left
2	1035-5R	Pilot steps - right
2	1035-5L	Pilot steps - left
2	1035-7	End sill
2	1035-7A	End sill bracket
2	1035-7B	End sill footboard
2	1040-10	Roof radius frame ?
1	1035-12R	Low hood - right
1	1035-12L	Low hood - left
1	1035-13	Handbrake housing
1	1035-14	Handbrake mechanism
1	1035-15	Cab front
1	1035-16	Cab headlight box
1	1035-17	Cab rear
2	1035-18	Cab side
1	1035-19	Cab roof
1	1040-20R	Long hood side - right
~~1~~	~~1040-20L~~	~~Long hood side - left~~
1	1040-20A	Long hood top - front
~~1~~	~~1040-20B~~	~~Long hood top - center~~
1	1040-20C	Long hood top - rear
2	1040-20D	Air inlet grill
1	1035-21	Long hood end
1	1035-22	Air duct
2	1040-23	Radiator inlet grill
2	1035-24	Sand box filler cap
4	1035-25	Classification light
2	1035-26	Walkway light
2	1035-27	Coverplate - round
8	1035-28	Hinge
5	1035-29	Lifting hook
1	1040-02H	Dust bin blower cover
1	1035-30	Exhaust stack
1	1035-31	Airhorn assembly
9	1035-32	Handrail stanchion - long
17	1035-33	Handrail stanchion - medium
4	1035-34	Handrail stanchion - platform
4	1035-36	Cooling fan guard - large
11	1035-37	Lift ring
2	1035-38	Cab window visor
1	1035-39R	Dynamic brake housing - right
1	1035-39L	Dynamic brake housing - left
2	1035-46	Hinged footplate

Continued on page 2

PACKING LIST

SCREWS

4	1-72 x 5/16	Round head
4	2-56 x 3/16	Fillister head
2	2-56 x 1/4	Fillister head
8	2-56	Nuts

WIRE

4ft.	1/32	Brass

DRAWINGS

1035-01	Frame assembly
1035-02	Body assembly
1049-39	Dynamic brake housing mounting
	Supplement instruction sheet

CENTRAL LOCOMOTIVE WORKS

PACKING LIST

E.M.D. GP-40 Diesel Section 1

2	1035-3	Body bolster
2	1035-3B	Body bolster insert - bottom
2	1035-3T	Body bolster insert - top
2	1040-4	Chassis underframe
2	1040-6	Fuel tank end
2	1035-8	Air tank end - long
2	1035-9	Air tank end - short
2	1035-11	Air tank tubing
1	1040-41	Fuel tank wrapper
4	1035-45	Motor bracket
2	1035-48	Coupling sleeve - truck
2	1040-49	Coupling shaft - motor ?
4	1035-50	EMD truck sideframe - 4 wheel
2	1035-51	Truck bolster
4	1035-52R	Truck brake cylinder - right
4	1035-52L	Truck brake cylinder - left
8	1035-53	Truck journal - bronze
4	1035-54	Truck swing hanger
4	1035-55R	Pedestal binder & brakeshoe - right
4	1035-55L	Pedestal binder & brakeshoe - left
16	1035-36	Journal spring
4	1035-57	Snap ring
2	1042	Intermediate gearbox assembly
2	1043	End gearbox assembly
1	2100	DC motor - double shaft
4	1013	Grommet - motor bracket
2	1014	Electrical terminal lug
4	UN-4	Universal joint - self-telescoping

SCREWS

4	6-32 x 5/16	Round head
4	6-32	Nuts
8	1/16	Cotter pins

WIRE

10 in.	1/16"	Diameter
6 in.	3/64"	Diameter

DRAWINGS

1035-03	Chassis assembly
1035-04	Truck assembly

CENTRAL LOCOMOTIVE WORKS

Instructions supplement for EMD GP-40

1. In Section 2, Step 10, disregard the sentence that mentions that the casting (-23) has a wider and longer flange at top edge. This refers only to the casting that is used on the GP-35 and SD-35. The casting for the GP-40 is symmetrical.

2. After completing Step 16, Section 2, the dynamic brake housings (1035-39R and -39L) can be installed. At each end of these castings there is a small "pad" on the mounting surfaces. These are necessary for casting purposes. File away each pad until it is flush with rest of mounting surface. Fit very carefully to long hood sides and locate as shown on drawing 1040-39. When soldering, be sure that section with fins goes toward rear of locomotive.

3. Locate a point centered over area with the fins. Drill hole and mount fan guard (1035-36) as you did with the other three fan guards.

4. Now locate a spot 25/32" back from rear edge of cab roof and centered in width of 1035-20A. Centerpunch and drill #42. Put the dust bin blower cover (1040-02H) in place and secure with 2-56 nut. The beveled edge of the casting goes toward front of locomotive.

5. Continue with Step 17 of instructions.

Drawings: 1035-03 & 1075-04

Drills needed: 41, 42, 52 and 66

Taps needed: None

HELPFUL SUGGESTIONS

A. Read the instructions carefully before starting any assembly work. Drawings that are furnished show all parts of the chassis and trucks "ex loded". Note that the numbers shown on the drawings give only the dash number rather than the full part number as shown on packing list.

B. It is suggested that considerable time be spent in acquainting yourself with the various parts, their proper location and use, so that when actual construction is begun, no time need be lost in identifying the parts and the work will proceed more smoothly.

C. Remove all "gates" from castings. Although this may seem a tedious chore to do all at once, you will find it much more pleasant to have this task behind you when you start assembly. Be sure to clean surfaces of castings where any soldering is to be done. These two steps are mentioned here so that they need not be repeated in each of the assembly steps. Take your time and follow the instructions!!!

ASSEMBLY STEPS

1. ~~Refering to drawing 1035-03, note that the chassis underframe (1035-4) has two different dimensions from the end to the first hole. The 1 3/4" dimension is the front end as noted on drawing. It is recommended that you mark this end in some manner so they will not be reversed during assembly.~~ CHANGED Take your #42 drill and countersink, ever so lightly, all the holes on the OUTSIDE of each frame EXCEPT the two very center holes which are for the air tanks. Countersink this pair on INSIDE of frames. The countersunk area will provide better "anchor" space when you rivet and solder the parts to the frames. Before mounting any parts to frames, lay out and drill the holes for the piping to pass through the frames. Dimensions and locations are shown on drawing -03. Use #66 drill for small wire and #52 for larger wire.

2. Mount the motor brackets (1035-45) first. Be sure to check the print for correct position. The angle goes downward. Put one of the castings in your vise with pins straight up. Put frame into position on pins and carefully peen ends of pins into the countersunk area around the holes. Be sure they are secure but don't hammer them so much that it will warp the frame! Repeat operation for other three motor brackets. (After you have all the parts riveted to frames and have frame assembly squared up, it will be best to

flow a little solder over all the riveted surfaces.)

3. The body bolsters (1035-3) have spot marks on the two tabs. Drill these spot marks with #42. The superstructure will be secured with screws at these four locations. Refer to drawing to make sure you install the body bolsters right side up! Rivet one side of bolster to one frame only but do not secure too tightly as you did with motor brackets. This applies also when fuel tank ends (1035-6) are installed which you can now do in the same, one frame only. With the two bolsters and two fuel tank ends mounted to the one frame, place the other frame over the respective pins and rivet in place. Turn the assembled frame upside down on very flat surface to check for flatness and being square. When it is, secure all joints with solder. Cut off excess length of frames that extend beyond ends of body bolsters.

4. Fit air tank tubing (1035-11) to the air tank end castings (1035-8 and 1035-9). Put tanks in place, again making sure the correct end goes toward front of chassis. After checking for proper fit, the pins can be riveted over and secured with solder. The tubing may also be soldered to tank end castings.

5. Install the rubber grommets (1013) in the holes in the motor brackets. Now fit the body bolster inserts. The top one (1035-3T) needs very little fitting -- mostly in rounding the corners a bit. Fit carefully and snugly or it will throw the trucks off center. Put bottom body bolster insert (1035-3B) into seat on bottom of bolster casting. The holes in the bolster inserts are for a 3/16" diameter kingpin. The inserts may be held in place with cement if they have been fitted too loosely but be sure the holes line up perfectly before so doing.

6. Take the fuel tank wrapper (1035-41) and carefully form it to contour of the shoulder on the tank end castings. Put the large radius in first by bending it around a piece of round stock about ½" diameter. Take your time and make it a good fit. Do not solder in place at this time. Form and install piping for air tanks.

7. Trucks can now be assembled using drawing 1035-04 and separate instruction sheet furnished.

8. Install the universal joints (UN-4) on each end of motor coupling shaft (1035-49) aligning the holes in shaft and universal so that the 1/16" diameter cotter pins can be inserted. Spread ends of cotter pins so they will not fly out when running. Before installing the universal joints on motor shafts, file away any small burr from drilling that may be around hole in shafts. Place universal joints on motor shafts, again using the cotter pins. Place motor in between motor brackets and install the four 6-32 screws through grommets into motor plates. IMPORTANT: run heads of screws in until they just touch face of grommets. The friction of the rubber will keep screws from backing out. Do NOT tighten so as to

compress grommets or you will lose the "cushioning" effect. Also, be sure screws do not touch brushes or brush holders.

9. One end gearbox assembly (1043) and one intermediate gearbox assembly (1042) are used in each truck. These gearboxes are designed and made for lubrication-free operation. It is recommended that a drop of oil be placed on each axle and wormshaft now, and periodically, to keep exposed steel surfaces from rusting. (Oil and grease will not hurt nor affect the material used in gearbox housing so if you are a stickler for using grease in gearboxes, you can drill out the eyelets used in our assembly and put grease in gearboxes and use 2-56 screws and nut for reassembly. However, if eyelets are removed at any time, warrenty becomes VOID.)

After putting a couple drops of oil inside truck coupling sleeve (1035-48), put sleeve over end of wormshaft with flat on it and insert respective shaft of other gearbox into sleeve, first aligning it so flats will match within the sleeve. Place sideframes on axles and assemble trucks. With truck assembly on your bench, lift one end of chassis frame and slip universal joint onto end of the wormshaft of the intermediate gearbox assembly (1042). Then drop chassis down over kingpin on truck bolster and secure with brass 6-32 nut. Insert cotter pin through universal joint and shaft, and spread ends of pin as before. Repeat operation with other truck assembly. Cut motor lead wires to length, stripping off insulation at both ends. Insert one end of wire into terminal lug (1014) and crimp in vise or solder. Install lug on kingpin and secure with a second 6-32 nut. Tighten firmly but NOT so much as to strip the cast thread! Solder other end of wire to motor bruch holder making sure you allow a bit of slack in each wire so it can move freely when trucks are on curves and not pull on the brush holders.

After oiling motor bearings, axle bearings, etc, your chassis is ready for operation.

This completes Section 1.

CENTRAL LOCOMOTIVE WORKS
PACKING LIST AND INSTRUCTIONS FOR ASSEMBLY OF EMD 4 WHEEL TRUCKS

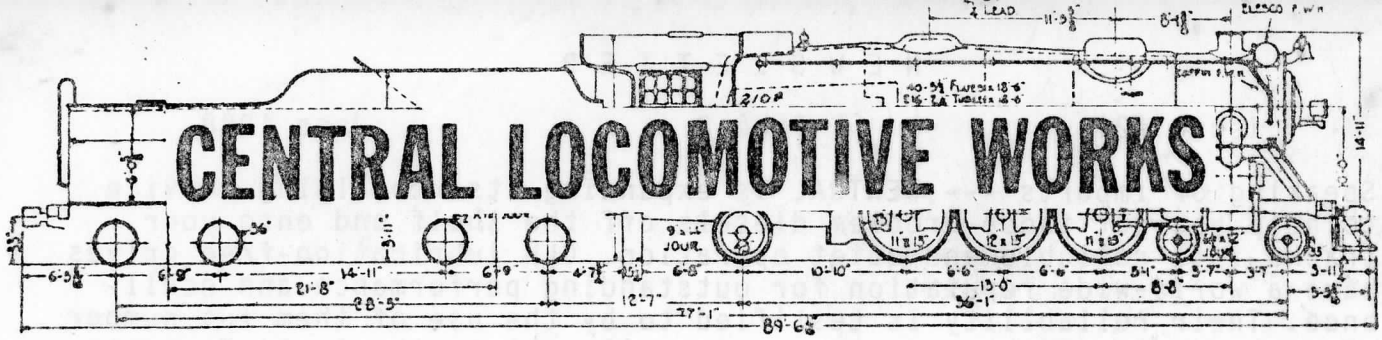
4 ✓	1035-50	EMD truck sideframe - 4 wheel
2 ✓	1035-51	Truck bolster
4 ✓	1035-52R	Truck brake cylinder - right
4 ✓	1035-52L	Truck brake cylinder - left
8 ✓	1035-53	Truck journal - bronze
4 ✓	1035-54	Truck swing hanger
5 — 4	1035-55R	Pedestal binder & brakeshoe - right
3 — 4	1035-55L	Pedestal binder & brakeshoe - left
16 ✓	1035-56	Journal spring
4 ✓	1035-57	Snap ring

Insert the split pins on the truck swing hanger (1035-54) in respective holes in truck sideframe (1035-50). Spread pins over and peen very carefully. They may also be soldered. The journals(1035-53) have spot marks for drilling axle hole. Using #41, drill 3/16" deep minimum, making sure you hold them square with your drill or they will bind on axles in assembly. Fit journals into slots in truck sideframes very carefully. The journals must slide freely, but not sloppy, or they will bind instead of "floating" properly when springs are in place. It is best to polish the sliding surfaces of both the journals and sideframes. Fit the pedestal binder and brakeshoe casting (1035-55R and -55L). Note these are right and left. The small pin at top of brakeshoe hanger fits into hole in the hanger support are at each end of sideframe. When fitted properly, insert journal in slot and tack the retainer with solder. Check journal for free and proper movement in slot. Repeat operation for rest of journals and sideframes.

Insert split pin on brake cylinder casting (1035-52R and -52L) noting there is a right and left. Check drawing to identify properly. Springs (1035-56) can now be installed. These springs are furnished a bit on the "strong" side in event you want to add extra weight to the finished model. You will have to determine if springs need to be shortened by how much weight you may want to use. Fit bolster (1035-51) over post on rear of sideframe. NOTE: bolster should be a bearing-fit on post or sideframe will possibly tip and bind if too sloppy a fit.
When bolster is properly fitted, secure in place with snap ring (1035-57). Trucks are now ready for gearboxes or wheels for completing the model.

DRAWING

1035-04 Truck assembly



CENTRAL LOCOMOTIVE WORKS

N E W S L E T T E R

Issue #21 June 1988

Although we are well into our 41st year of manufacturing O scale locomotives and parts, it looks like 1988 will be a year of decision. About a year ago, we embarked on a massive program for our kit production and withh all the time-consuming work involved, it's the basic reason this issue is so late. (You will recall that even when issues are late, this does not affect your subscription.) Being at the mercy of vendors does not make it any easier to get things done on any kind of schedule. Quotations for new tooling that we cannot make ourselves also cause numerous delays. Then when all the costs were in and totaled, we are seriously wondering if it's all worth it!!! The months ahead will tell the story!

As most of you know, we have 14 EMD diesels on our roster of locomotive kits. And --- we have tried hard to keep a reasonable inventory of these kits for your enjoyment. We'll list them for those of you who may not be aware of our product line:

GP-35	SD-35	SD-45-2	F-3 Phase I and II
GP-38-2	SD-40	SD-40T-2	F-7
GP-40	SD-40-2	SD-45T-2	E.7

Also in process are the E-8 and E-9 which should be ready in the fairly near future. These had been tabled temporarily while we were investigating those new procedures. Respective B units also are made.

In the Alco line, we made hundreds and hundreds of the PA's and FA's along with their respective b units. The PA's were our very first kit and were introduced back in January of 1947! We have dropped production of these kits as the market seems to be pretty well saturated with them.

We probably will phase out some of the EMD kits due to high cost of keeping them in inventory.

You probably have read the several articles in some of the model magazines decrying the lack of kit builders in the hobby these days. It is regretable that some of this is true because kit assembly will bring out and develop the basic skills in all of us and even if any skill is not top-notch, getting to work at it and doing it will perfect any and all abilities to produce finished models that anyone can proudly say, "I built it!".

One of our customers put it quite well when he stated that these days it appears that the attitude is "who has the money to be the first to purchase the newest import and set it on the track to <u>look</u> at!".

Speaking of imports --- CENTRAL is expanding its rebuilding service to help you get those problem diesels off the shelf and onto your tracks into reliable and quiet operation. CLW lubrication-free drives have a world-wide reputation for outstanding performance and ecellence. Their reliability is testified to by the use of them ina number of museum operations where they are really put to the test! To quote an old Lobaugh slogan, they have become the"Standard of the World in O Gauge." So--- send in your "problem child" and have it come back to you as a real operating unit rather than just a shelf-display unit.

One of the popular conversions we have been doing a lot of is the making Weaver RS units into the RS-4/5 with our 6 wheel SPRUNG lost wax brass and powering ALL 6 axles. (The slightly lower priced kit available elsewhere only powers 4 axles and trucks are rigid.) Best part is that the truck kingpins locate in the same bolster holes in the floor where the regular 4 wheel trucks mount so there is no layout and drilling work to do on the rather delicate floor molding. We also furnish a new bottom transfer shaft and our universal joints so that all can be assembled or disassembled without having to pry apart any of the knurled assemblies. This also provides quieter operation. There is no need for the transfer gearbox which we understand they are now using.

We have also increased the scope of our universal joints -- they can now be furnished in 3 bore sizes --3/16, 5/32 and 1/8. They may be had in any combination at the still low price of $1.25 each. The "double" type of universal joint are $1.50 each with any of the above combinations.

We're going to deviate from locomotives for a moment and ask a favor of ALL our subscribers. How many of you still subscribe to, or buy O Scale Railroading? THis is the magazine that Vane Jones quite some years ago and was to be all for O gauge. As most of you will recall, we used the back ouside cover to bring our ads to you right from the start and we took this spot in order to help support the magazine. Due to ill health, Vane was forced to give up publishing it some time before it was purchased by someone else. The comments and complaints that we have been receiving from O gaugers about OSR having so much tinplate content, prompts us to question our subscribers as to whether or not they are still reading this magazine or wether we are wasting our advertising dollars! Not that we are against tinplate because like most everyone else, we started our modeling with tinplate.During WW-2, we converted right around 200 Lionel engines to run on scale 2-rail track when scale equipment was unavailable.

We even enquired of OSR for information on tinplate wheels as we were considering being able to provide those operators with our drives. The editor did mention our intentions in one of the issues and -- would you believe -- we received a grand total of THREE inquiries! You can readily see that our interest in doing those type wheels went right out the window. So --- <u>please</u> tell us what you are reading these days!

Speaking of magazines --- 48/Ft. O Scale News was really getting to be a first class magazine when Dan Henon became incapacitated and the magazine became dormant. He made a gallant effort to revive it after about a year but with internal problems, he finally sold out to a

well-known modeler --- Larry Kotula. He tells us that the magazine will be strictly O gauge and to be published bi-monthly after it gets rolling. First issue is due very soon. Let's all get behind Larry and support him every way possible with articles, photos, etc. A magazine is only as good as its contributors!

We have been shipping the Ps4 kits right along now but still rather slowly. due to assembling the boilers, cab and tender bodies. We are trying different appraoches in order to expidite deliveries even faster so bear with us a bit longer. Many of the fellows that have received their kits are very happy with them and have told us that the wait was well worth it. They are also happy with the credit that they have accumulated on their deposit. We issue this credit memo at the time the kit is shipped.

(We're going to take "time out" to attend the O Scale Convention in San Antonio.)

****

Running slow after the convention!!! It was a good one but it certainly should have been better attended. The San Antonio fellows handled everthing extremely well and we offer them a vote of thanks for all their help. This was the third time that we have visited Lorell Joiner's railroad and each time we marveled beyond words. It's something that every O gauger should see!

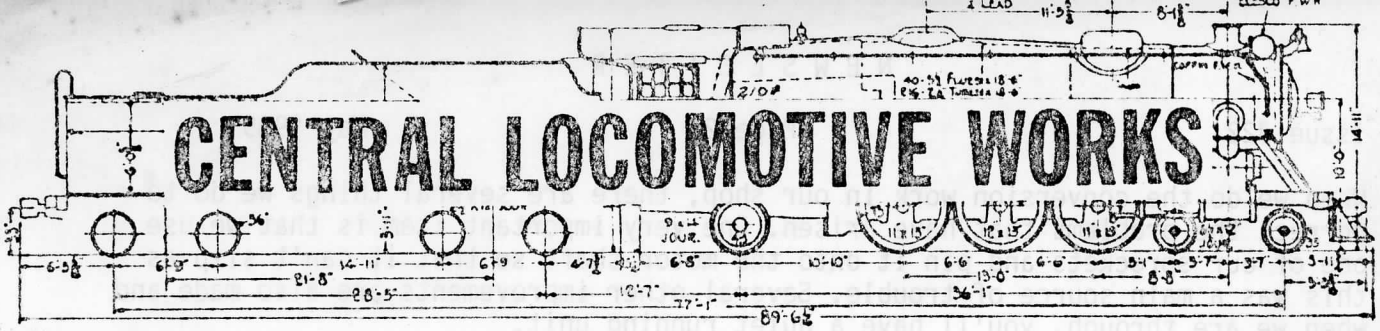
Larry Kotula passed out the first issues of 48/Ft. O Scale News at the convention and if it is indicative of things to come, every O gauger should subscribe to it. If we all want a strictly O scale magazine, and we're sure that we all do, then we had better support it so send in your subscription NOW!!!

We believe we have some very good news for Ps4 production. We have just located a commercial firm that claims they can handle the assembly work on a full time basis. We have just received 2 sets of assemblies and outside of a couple minor errors, they are very acceptable. We have already sent them a batch of formed etchings to see what they can do on production assembly. We should have them back in 3 or 4 weeks. If all is well, Ps4 kits will be rolling out at a good rate. It's about time!

As we are still having some delays with our new program, we're just going to go ahead and send this out so you know we're still around. We did just receive some very encouraging news about it but seeing that it will take a bit more time before all can be finalized and also that we have to close for vacation, we should know a lot more by the time we get back and things should be underway. As soon as it's firmed up, we'll get another issue out even if it's only one page!

If there's a pink sheet herewith, it's time for renewal as we have sent out an extra issue or two to those who are due to renew.

We always appreciate your letter and 'phone calls. By the way, we have a new Area Code number: 407-848-8937.



CENTRAL LOCOMOTIVE WORKS

NEWSLETTER

Issue 22 May 1989

Yes, we agree with you -- it's high time we put out another Newsletter so here goes!

All this past delay was mainly due to wanting to tell you all about our new GP-38-2 kit. We have already been producing this kit for several years but when they ran out of stock the last time, we decided to put into practice some of the ideas we had been entertaining for making kit assembly much easier and more pleasant to do. Not only that, we are trying three level etching for added detail of etched surfaces.

Our kits did require considerable filing to etched guide lines and although most fellows didn't really object to this, we felt that by eliminating practically ALL the filing, it would make for more pleasant model building. All parts are chemically milled to exact size. The floor ends are contoured to shape of the steps where they mount. The steps are now one-piece etchings so that the safety tread could be reproduced as "seethrough". They have scored lines where they are bent to shape very simply and easily. They're really sharp!!!

The cab is also a one-piece etching -- again, easily formed by hand. The join is on the cab rear so no seam will be seen on finished model.It eliminates the previous assembly of four castings. The side panels that mount to edges of the floor are chemically milled to exact size. Best of all, they have all the holes in them for mounting the handrail stanchions so all the layout work and drilling is eliminated too. The air duct cover is integral with the left side panel which eliminates more fitting and soldering. Of course, the one-piece long hood is already formed in kit and we've added some third dimensional detail at the radiator air intakes. You'll have the option of four different front nose etchings ---the82" with handbrake lever, the88" with either the handbrake lever or handbrake wheel and the high hood version.

Obviously, new assembly drawing have to be made as well as new instructions written, which we are doing now. When these are all completed, kit will be ready for delivery. Now on to other things!

Our new Blomberg Trucks are just about ready. They too, are awaiting new assembly drawings and instructions. Most of the castings are made using dies rather than the conventional rubber mold process. These castings have much sharper detail and assembly is much easier. These are also available as the Type M trucks that are widely used on the -2 series. These are the ones having a cushioned "pad" instead of the leaf springs. Either way, the springs or the "pad" are cast onto the plank as one-piece.

We have been figuratively "snowed under" (even in Florida) with conversion work on the Weaver units, either to convert them to RS 4/5 with our 6 wheel sprung trucks or just replace the RS 3 with our sprung trucks. We note Weaver has gone to the transfer gearbox arrangement apparently to eliminate the noise in the center sprocket system. Our method keeps the center drive by correcting the source of the noise and not having to purchase a separate transfer gearbox.

When we do the conversion work in our shop, there are several things we do to correct the problems that have arisen. One very important item is that we use one of our sprockets and pin it onto the motor shaft so that it can't slip as this was a main source of trouble. Several other improvements are also made and when we are through, you'll have a quiet running unit.

We have been shipping Ps4 kits right along now as fast as superstructures and tender bodies can be assembled. There have been a few fellows that have not sent their checks when we sent them notice that it was their turn in the reservation line. So, after the time period passes that we allow for reply, we put them at the end of the line and if there are no kits left when we get to that point, they will be out of luck!

After we ran our last Newsletter, we noticed that we had not mentioned anything about P:48. For those interested in P:48, we can equip our diesels and drive kits with either 36" or 40" wheels at a slight extra charge of $1.00 per gearbox.

The first SD model to be produced in the new design will be the SD-40-2 which has been the most popular SD unit with modelers as with the prototype railroads. It should be ready very shortly as we're just about ready to run sample etchings. It will feature all the improvements mentioned for the GP-38-2.

As mentioned several letters back, we've had a number of requests to repower those Pi-Polars that came out a few years back. They are good looking models but their drive train left something to be desired. After experimenting with different approaches, we've decidedto go the route of new chassis units that will be sprung. One of our customer friends has the first version of this and he claims it will pull the kitchen sink off the wall so we feel this approach is the way to go. Ironically though, it requires considerable pattern work but if we're going to do it, we are going all the way or not at all.All axles will be sprung except the lead wheels and all axles powered with same exception. Several of you have already sent us a standing order for a conversion unit for the Bi-Polar, and if more are interested, please drop us a line to that effectas we'd like to know how many to count on. No deposit required but we'd appreciate an honest commitment.

Every so often we are saddened to hear that one of the "old timers" in O gauge has made his last run. This time it was Ken Henry of Baltimore, who was so well known for his traveling with the large B & O layout when it toured the country. He was a well-liked modeler and answered thousnads of questions for the people who viewed the layout in all the various cities that it visited. Ken was also a custom builder of beautifully running locomotives. We used to make most of the castings that he used on his models. Those of us who knew him, will miss him!

We are enclosing a flyer-registration form for the O gauge convention in Stamford CT in July. Be sure to attend as it promises to be a great meet. We are planning to be there too so come by and get acquainted. Last but not least many thanks to all of you that wrote or phoned your answers to our questions about advertising in OSR. The responses were all interesting to say the least -- even to the point that we were asked to make some of our models available for tinplate operation.

We had hoped to be able to enclose the new GP-38 brochure but with the delays on the etchings, we just could not get one assembled and photographed in time. But -- just look at a photo of the prototype and you'll see what our reproduction is like! In case you don't have our new Area Code number: 407-848-8937. We always enjoy your calls and letters.

Pink slip enclosed? Time to renew if so.

CENTRAL LOCOMOTIVE WORKS

EMD E-7 2000 HP Diesel Locomotive

On the E-7's way to becoming the best-selling U.S. passenger diesel of that period (429 cabs and 82 boosters), it out-sold all of its A1A-A1A competition put together -- all the PA's, Erie-builts, Sharks, everything! With two V-12 engines producing 2000 HP, the crews really liked them for their fine, smooth, surefooted ride at all speeds. E-7's were everywhere -- from Washington state to Florida and from California to New England.

Kit may be purchased complete or in two sections. Both A and B units are available.

SECTION 1 contains complete chassis and trucks, which, like the prototype have the correct equalizer bars for springing and are well detailed. Formed double fuel and water tanks give the unit a nice, close-to-rails appearance. Journals are the correct type too for the E-7. CENTRAL'S exclusive, lubrication-free, enclosed gearboxes powered by a powerful American-made can motor, provide smooth, high traction operation. It may be had with all axles powered or just like the prototype with four axles powered. It is also available with no power.

SECTION 2 contains complete superstructure. Nose is one-piece lost wax casting. Body is a beautifully detailed, pre-formed etching with all the locations for louvres, air intake screens and window frames are etched openings so no cutting out is required and fitting of the detail castings is kept to a minimum for easy assembly. Detail castings are all mounted with either screws or nuts which simplfies construction and eliminates excess soldering. Well detailed drawings keyed to step by step instructions complete this kit of one of EMD's most famous locomotives.

Although the soldering of the nose and end castings to the engraved body is not too difficult, still a small torch must be used. For those who prefer to have this operation factory-assembled, the labor charge is $6.50 for the "A" unit and 5.00 for the "B" unit.

"A" UNIT	Complete kit, all axles powered	$355.50
	Complete kit, 4 axles powered	343.50
	Complete kit, no power	305.75
	Section 1, all axles powered	170.00
	Section 1, 4 axles powered	158.00
	Section 1, no power	120.25
	Section 2	195.75
"B" UNIT	Complete kit, all axles powered	$348.50
	Complete kit, 4 axles powered	336.50
	Complete kit, no power	298.75
	Section 1, all axles powered	170.00
	Section 1, 4 axles powered	158.00
	Section 1, no power	120.25
	Section 2	188.75

NOTE: Flush type (passenger) pilot will be sent unless rounded type (freight) is specified.

All orders are postpaid in U.S. and Canada.

Nov. 86

CENTRAL LOCOMOTIVE WORKS

EMD F-7 1500 H.P. Diesel Locomotive

The F-7 appeared in 1949 and quickly proved itself the best-selling streamlined cab unit in history. Higher capacity electrical equipment boosted the F-7's tonnage ratings approximately 30% but the stainless steel grilles which run the length of the unit are the outstanding identifiable characteristics of these famous units.

Authenticity is one of the proud possessions of this latest model in CENTRAL'S ever-expanding roster of quality kits.

Kit may be purchased complete or in two sections.

SECTION 1 contains complete chassis and lost wax brass sprung trucks which are faithful reproductions of EMD's Blomberg design. It is powered by CENTRAL'S exclusive lubrication-free, enclosed gearboxes which are the acme of quietness and driven with a powerful Pittman DC can motor. Motor is cushioned in rubber and insulated from the frame and trucks. All axles are powered.

SECTION 2 contains the complete superstructure. Nose is a one-piece lost wax brass casting with correct contour. Superstructure is a one-piece preformed brass etching. All castings are lost wax brass and beautifully detailed. All openings in body are to exact size for mounting the detail castings. The grilles are real stainless steel and are chemically milled to exact size. These grilles may be purchased separately. Prices are listed below.

Well detailed drawings with all parts keyed to instructions make this a fascinating construction project but one that quickly goes together.

Although the soldering of the nose and end castings to the engraved body is not too difficult, still a small torch must be used. For those who prefer to have this operation factory-assembled, the labor charge is $6.50 for the "A" unit and 5.50 for the "B" unit.

"A" UNIT	
Complete kit, dual power	$284.50
Complete kit, no power	246.50
Section 1, dual power	126.50
Section 1, no power	88.50
Section 2	167.00
"B" UNIT	
Complete kit, dual power	279.50
Complete kit, no power	241.50
Section 1, dual power	126.50
Section 1, no power	88.50
Section 2	162.00
Stainless steel grille, "A" unit	1.60 each
Stainless steel grille, "B" unit	1.80 each

NOTE: If only grilles are ordered, please allow $3.00 UPS and handling charge for orders under $15.00.

Nov- 86

CENTRAL LOCOMOTIVE WORKS

EMD F-3 1500 H.P. Diesel Locomotive

Phase I and Phase II

Between 1946 and 1949, EMD turned out some 1800 F-3 units in both A and B types. They were equipped to serve successfully as either a heavy duty fast passenger or heavy duty freight locomotive or, in some cases, a combination of both. Without a question, the F-3 carried its share of the load in the evolution of modern diesel power.

CENTRAL'S creed for producing kits of excellence is again imaged forth in this authentic replica of this well known locomotive.

Kit may be purchased complete or in two sections.

SECTION 1 contains complete chassis and lost wax brass sprung trucks which are faithful reproduction of EMD's Blomberg design. It is powered by CENTRAL'S exclusive lubrication-free, enclosed gearboxes which are the acme of quietness and driven with a powerful Pittman DC can motor. Motor is cushioned in rubber and insulated from frame and trucks. All axles are powered.

SECTION 2 contains the complete superstructure.Nose is a one-piece lost wax brass casting with correct contour. The superstructure is a one-piece preformed brass etching with all screening integral with body. All castings are lost wax brass and beautifully detailed. All openings in body are to exact size for mounting the detail castings. The high type 36" fan guards are made in a die to produce the fine details on them. Both Phase I and Phase II are available.

Well detailed drawings with all parts keyed to instructions will make this one of the easiest kits that you have ever built.

Although the soldering of the nose and end castings to the engraved body is not too difficult, still a small torch must be used. For those who prefer to have this operation factory-assembled, the labor charge is $6.50 for the "A" unit and 5.50 for the "B" unit.

"A" UNIT	Phase I	
	Complete kit, dual power	$279.50
	Complete kit, no power	246.50
	Section 1, dual power	126.50
	Section 1, no power	88.50
	Section 2	162.00
	Phase II	
	Complete kit, dual power	282.50
	Complete kit, no power	249.50
	Section 1, dual power	126.50
	Section 1, no power	88.50
	Section 2	165.00
"B" UNIT	Complete kit, dual power	274.50
	Complete kit, no power	241.50
	Section 1, dual power	126.50
	Section 1, no power	88.50
	Section 2	157.00

All orders postpaid in U.S. and Canada.