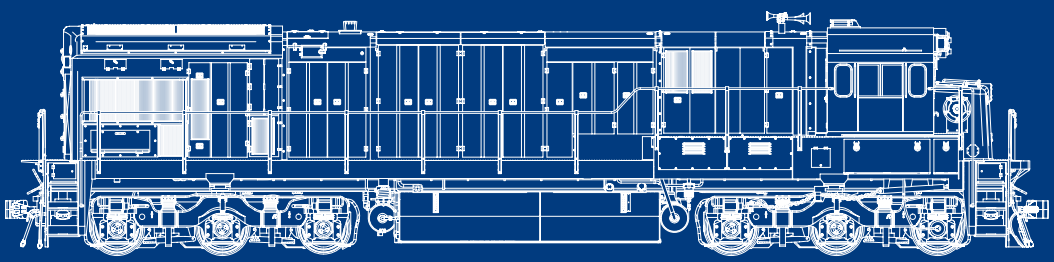
RTI-2430-7

Locomotive Service Manual

Running Maintenance and Trouble-Shooting for C30-7 Road Locomotives



GENERAL ELECTRIC

RAPIDO TRAINS INCORPORATED
MARKHAM • ONTARIO • CANADA

GE C30-7 LOCO PRODUCT GUIDELINES

Thank you for purchasing a model of the best-selling General Electric Dash 7 locomotive, the C30-7.

If this is your first Rapido locomotive, we must ask – why is this your first Rapido locomotive? No, seriously, we've been around now for 20 years now and we're not just a Canadian company, eh? We've produced an imperial ton of US products, like the U25B, FA-1, B36-7, GP38, F40PH, E8A, SP Dome, Comet car, RTL TurboLiner, F30 flatcar, X-3 tank, etc. So just for that, we're going to make sure you LOVE your GE C30-7. And then you'll say to yourself, "What have we missed out on all these years? We need to find and buy every Rapido model that has ever been released, in every scale! Especially the UK ones!"

If you are a returning customer, welcome back! Just put your engine on the track. All we ask is you don't intentionally set it on fire, don't try to put real diesel fuel in it, and don't MU it to anything with pizza cutter flanges. Oh, and REALLY keep it away from cheap DC "train set" controllers. Poor-quality power packs can quickly and easily give any Rapido loco a melted makeover.

If this is your first Rapido Manual, we should warn you up front – there's usually a good amount of humor through these manuals. Well, at least we think so. We have gotten some comments from people that don't agree, but we suspect that they have had their sense of humor surgically removed (we think it's near the spleen). After all, model railroading is supposed to be fun!

As always, if there is anything amiss with your C30-7, please do not hesitate to contact us. We stand by our products 100%. The best way to contact us is through email (service@rapidotrains.com) but you can also try to reach us by phone, the postal service, or subspace transmitter (you must provide the krellide power cell). Our contact info is near the back of this manual.

However, PLEASE do not send a faulty model back to us without first getting authorization. You wouldn't believe how many times we get a delivery of a broken locomotive with only a name inside (sometimes only the FIRST name), meaning we have no idea what's wrong with it! (Hey Rick – your package of pantographs is still sitting on the shelf in our bathroom.) If the issue with your model is something simple – like a loose grab iron – then we'll likely tell you how to fix it yourself. While we generally will support repairs to your C30-7 for a considerable length of time, please realize that eventually the parts supply will run out. That, or the Earth will be overrun by tribbles and all humans will become their pets, whichever comes first. Unfortunately, that will dictate when we can no longer help you. Again, please make sure you contact us first so we can tell you whether there's enough parts (or quadrotriticale) left to do your repair.

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PROTOTYPE HISTORY

The C30-7 was General Electric's improvement of the U30C locomotive, featuring a 16-cylinder 3,000 horsepower 7FDL-16 diesel engine. Built between September 1976 and May 1986, over 1100 units were produced for many of the Class I railroads across the United States for use primarily in heavy-haul freight. A fair number would go on to have extended careers with both short/regional lines and private industrial railroads, owing to the locomotives reliability and pulling power.

BREAK-IN

Just so we're clear, that doesn't mean break into anyone's layout room to steal their C30-7. And don't break into a hobby shop either because that is really frowned upon. Just buy more for yourself. But this isn't about that kind of break-in.

Every locomotive needs a break-in period. Your C30-7 has been tested at our factory for about two minutes…maybe…just to make sure everything functions as it should. That is certainly not enough time to get the gears to mesh nicely or to even out any jerky operation in a new motor. We suggest that, after reading this manual, you put your C30-7 on a test loop and just let it run in each direction for an hour or two. Fast and slow. Don't have it pulling anything either while you're breaking it in.

There already should be enough lubrication in the gearbox so you don't need to add any. Just let the thing run. If you are running this thing on track on the carpet, please vacuum first. You have no idea how many models come back to us with gearboxes full of carpet fluff and pet fur. Our models are not cat-proof.

HOW TO HOLD YOUR LOCOMOTIVE

Hold your C30-7 gently, and with much love, care, and attention. Your model has numerous delicate parts, especially on the roof and underframe. If you want to back date it to be the quality of a model produced in the 1970s, then rip all the parts off and handle it while wearing Bauer 15" hockey gloves. We're assuming you don't want to do that, so the model should be picked up carefully. It is best to pick it up with your fingers along the bottom edge of the C30-7 fuel tank (but avoid the stanchions and piping!). That way you won't leave greasy fingerprints on the sides and you also won't stress any of the delicate parts. Always make sure your hands are free of shmutz before touching your engine, otherwise you'll shmutz up your loco. Hey – if your hands have enough oil on them that could be realistic weathering.

If you are taking your C30-7 to the club all the time and regularly handling it, stuff will likely break off. Sorry. The little bits are made of plastic and metal and attached with glue, which is all a bit fragile. We wanted to make the small parts out of

unobtainium and use Steady-State Micro Welding to install them. Unfortunately, with the current global supply crisis, unobtainium has become unobtainable.

We suggest wrapping your C30-7 in a plastic bag before placing it in the packaging or in your loco holder so you can catch bits that fall off. White glue is the recommended adhesive for reattaching the bits, although you are welcome to use CA but only if you are very careful or very brave. Remember to apply the CA to just the part and not the model (don't ask us how we know this).

CHECKING AND ADJUSTING YOUR LOCOMOTIVE

We try and make sure that every locomotive is perfectly up to spec before it leaves the factory, but if it was a Monday morning and our factory workers were up late the night before placing bets on the big Mahjong game between engineer Xiao Hong and Zhang San from accounting, there may be a couple of bugs. Doing a quick pre-service check will solve most operational glitches.

- Check to see that all wheelsets are correctly in gauge using an NMRA RP-2 Standards Gauge. Should any of the wheelsets be out of gauge, then remove the affected wheelset from the truck by prying off the bottom lid of the gearbox with a small flat screwdriver and then spreading apart the sideframes. The wheelset can be regauged by grabbing each wheel and twisting. Reverse the steps to replace the wheelset and ensure the gearbox cover is snapped into place before placing it on the track.

- Check that all underbody piping and appliances are firmly installed and clear of the track. Of particular note are the air hoses on the ends of the locomotive and both coupler trip pins. Bend up any low coupler trip pins so they don't interfere with your switches and crossings. We recommend using Kadee part #237 (Trip Pin Pliers) or Micro-Mark part #80600 (Trip Pin Bending Plier). If your track transitions from flat to a 12% grade in three inches, you might also want to cut off the pilot and the fuel tank as they will foul the rails.

- Make sure that the trucks swivel freely and without binding. If they catch on anything, check to ensure that the sides of the trucks don't bind against the steps. If they do, see that everything is firmly installed.

MISSING OR DAMAGED PARTS

If you open your C30-7 box and discover that something has obviously been bumped in transit and is damaged, please contact us. We know that some of you don't like the idea of human beings touching your models, but if it is a matter of gluing an exhaust stack back on you can do it yourself in less than a minute with a drop of white glue. If you really want to send your model back to us for us to install that, we

John Lassahn photo, Jeff Lassahn collection.

would be happy to. But if you do send it back for us to put that one part back on and other stuff falls off when we send it back to you, then tough tooties. We're not fixing it again.

We try to make our models courier- and mail-proof, but there really is no way to protect a model from damage when it is used in a game of football at the UPS or FedEx distribution center. Model trains generally don't survive well after being "spiked" because Billy scored a touchdown near the warehouse receiving doors.

If you see some grab irons are missing and they are not floating around the packaging, let us know and we will send you replacements. More information about our warranty can be found toward the end of this manual.

REMOVING THE SHELL

If you need to open your C30-7 to install a crew or a decoder, things should be pretty straightforward. To get inside your C30-7, you will need to follow these steps:

- To remove the shell, you first have to remove the screws from the coupler boxes and pull them out of the pilots. Then you have to remove the pairs of screws up under the frame just forward and aft of the air tanks mounted on either end of the fuel tank. At this point, just carefully pull the body shell and walkway assembly off the chassis. If you are working in a zero-gravity environment, then the chassis will slowly drift away from the shell. On the other hand, if you are not in a zero-gravity environment, remember – gravity sucks. If you hold your loco upright by the body, the chassis will now plummet to the nearest solid object. You may want to do this carefully over a workbench with some foam underneath.

- If you wish to install a crew inside your C30-7, you have to remove the cab from the body. **NOTE**: You must remove the glued-on handbrake wheel on the side of the nose to lift the cab clear. Next, remove the handrail ends from the cab sides. The cab is held in place to the walkway by four clips, one under each cab end wall (one is offset foreward). With a small flat screwdriver, gently push each of the four cab clips towards the centerline of the cab to unlatch them. With a little manipulation, the cab should come free and lift straight up. After the cab is separated, the cab floor can be removed from the cab using a small flat screwdriver. Patience will be key here as the clips are also the clear window material. Don't jam a tool in there too hard or you might scratch the glass (it will not buff out). Install your crew figures and install in reverse order.

- If you wish to change out the decoder, then just follow the previous steps about removing the shell. It will expose all the wonders that lie within.

At this point you should have the entire shell off the frame, as long as you followed our super simple instructions. We don't know how to put it back together, so from here you're on your own. Just read the instructions backwards and you should be OK. If you find a cryptic message while reading backwards, *it's not our fault!*

Any requests for replacement bodies because you broke the little clips will be met with laughter, followed by sadness, then laughter again, and then a very polite suggestion that you should model a locomotive rebuilder and use your recently broken body as scenery. We did warn you after all. If we can assist, then all joking aside we'll make every effort to do so. But note that we don't have a warehouse full of shells and cabs to replace the broken ones.

OPERATION – DC (SILENT)

If your C30-7 locomotive is not equipped with a sound decoder, it should function like most other HO scale locomotives. Put it on the track. Give it some juice. Watch it go. In DC, the number boards are always on and the headlights are directional. All other lights – including class lights and beacons – are wired, but they will not work in DC.

If you are new to the hobby (or just like to occasionally "play trains") and you have a DC-powered train set, please contact us before operating your C30-7 as it may not be safe (for your engine and/or your wallet) for you to use your controller.

Some train set throttles put out a very high maximum voltage that is not suitable for scale model trains. The maximum recommended voltage is 15 volts DC. Similarly, controllers designed for large scale trains put out a much higher voltage than your C30-7 can handle. Please see the highlighted warning not too much further in this manual.

If you use a train set throttle or a throttle designed for large scale trains, your locomotive's circuitry may end up looking like a bag of popcorn forgotten in the microwave after you accidentally punched in an extra digit into the timer. In such situations, we'll try our best to fix it for you, but it may be beyond salvaging. Please note we may have to charge you for the replacement parts and/or the labor involved in restoring it to its former self. That's because you didn't read this bit of the manual. For those of you who are reading this, hi! How's it going, eh?

INSTALLING A DCC DECODER

The C30-7 contains a motherboard specially designed for our decoders. This is connected to the track, motor and lighting outputs. A blind plug is attached to the motherboard using a 21-pin connector. To install a decoder, remove the blind

Ft. Worth, Texas, April 22, 1978. Kevin Eudaly collection.

plug and install a 21-pin decoder. Your chosen decoder should have eight function outputs.

At the time of writing, we recommend only the following non-sound 21-pin decoders:

- ESU #59029 - LokPilot 5 Basic with 21MTC
- ESU #59629 - LokPilot 5 DCC with 21MTC

We feel the 21-pin connectors are superior because there are enough pins to ensure that all your lighting functions are connected. The necessary resistors are included on our motherboard so you don't have to futz around with resistors. Just plug in one of the recommended decoders and you have DCC. We know some of you prefer a different brand of decoder, but we honestly can't help you install it or map the functions.

We have made a C30-7 function map so that you can make the function buttons and motor controls exactly the same as our factory-released sound versions. This should be available for download from the Support section of our web site. If it isn't, bug us. We recommend an ESU LokProgrammer to write the function mapping to the ESU decoders. If you don't have a LokProgrammer, you can adjust CVs in the usual way but we hope you like lots of button pushing. If you have a fleet of C30-7s like everyone should, remapping multiple units on a LokProgrammer (after the first one) takes just one button click. Remapping using a throttle? Clicks. So. Many. Clicks.

We will be selling C30-7 sound decoders separately, if they aren't on our website by the time you read this, call our office, pick a random number between 1 and 75, divide by ¾, multiply by √π, and then take the second to last number. Call that extension and you'll be directed to someone whom you can yell at. Or just e-mail us.

If you want to install a decoder other than the one we suggest, it's more than just plugging in the decoder and then playing trains if you want everything to work. You will have to custom map all the functions. It's just how it is. We won't apologize for that. Sorry, eh?

OPERATION – DC (SOUND)

To operate your sound-equipped C30-7 locomotive on a DC layout, just give the throttle some juice. The engine will start up once sufficient voltage has been reached (around seven volts). See the note above (in Operation – DC (Silent)) about using train-set or large-scale throttles. With DC layouts, you have very little control over the sounds of your model.

— WARNING —

Rapido products are designed to operate safely between 0V and 16V. Voltages in excess of 16V - as well as irregular waveforms, voltage spikes or short circuits - may cause severe and sometimes irreversible damage to the product. "Train set" power packs are known to suffer from any one of these unexpected irregularities, whereas higher-end systems have safeguards in place to prevent this. Rapido always recommends using a power supply system that matches the quality of the models you are running. If you're reading this, you've obviously invested in top-of-the-line, museum-quality motive power and equipment, so we hope you've made the same investment with your model railroad power supply too.

While many power supply systems exist, some are known to have caused problems with model train circuitry in the past. If you have any one of the following systems, PLEASE DO NOT USE IT until you contact us for more information: MRC RailPower 1300/1370-series, Bachman Spectrum Magnum, Atlas 313 Universal Power Pack.

The DC lighting is limited. Some throttle manufacturers produce special gadget-like thingies which are meant to trigger the sounds in locomotives on DC layouts. As we have no involvement in the development of those gadget-like thingies, we have absolutely no idea how they will affect your C30-7, for good or for ill, for richer or poorer, in sickness and in…sorry, wrong transcript. As always, we'll try to help you fix your C30-7 if one of these gadget-like thingies turns your locomotive's circuitry into something akin to glowing magma, but we can't guarantee we'll be able to.

It is usually at this point in the manual that Jason inserts a gentle dig at his fellow modelers who won't switch from DC to DCC. The rest of the staff continue to repeatedly remind him what happened the last time he did that. Something about being chased down the county highway by a group of townsfolk wielding transformers and potentiometers. As long as we can keep reminding him of this event, he'll be nice to DC modelers. Not that *we're* calling DC modelers Luddites – No, sir, not us!

OPERATION – DCC (SOUND)

We go to extreme lengths for accuracy, in sounds as well as in looks. Our sound decoders are LokSound V5 decoders by ESU, with Full Throttle functionality. The sounds are about as bang-on accurate as we can make them. A C30-7 masses about 366,000 lbs. in working order. Therefore a certain amount of starting momentum

has been pre-programmed into the decoder to replicate that massive weight. If you want to eliminate the delay to speed up, program CV3=00, but when customers complain about their damaged cargo, don't blame us!

More detailed decoder instructions, including all sorts of weird CV settings we don't understand, can be found in the ESU LokSound V5 decoder manual. It is available for download directly from the ESU website.

LOCOMOTIVE ADDRESS

Your Rapido C30-7 comes from the factory with a decoder address of 3. We suggest if you are using DCC control that you first test that the locomotive responds on address 3 to all functions – motor, lights, sounds, everything. Once you have verified that the locomotive is responding, you should assign it a unique address (normally the road number of the unit) before going any further. This can be done either on your programming track (recommended) or on the main if your system supports programming on the main. Be aware however that if you do program the

— ESU PROGRAMMER USERS —

To successfully program your locomotive using an ESU LokProgrammer or an ESU ECoS DCC system, our onboard Rapido MoPower capacitors must be fully discharged. Until a software patch and/or a hardware fix is available, please allow your ESU-equipped loco to discharge a full five minutes before using an ESU programming track, or allow to discharge one minute before using the ESU Ops Mode (on-the-main programming).

The reason is due to the long duration of our MoPower capacitors that are built into each locomotive's motherboard. There can be a software conflict between a still-powered-up ESU decoder and the ESU LokProgrammer (or ECoS system) where they fight for control, resulting in a failed programming attempt. We expect a fix to be coming soon from ESU, but until then, please follow the suggestions above to successfully program using ESU programming systems. If it doesn't work, wait a little longer and try again.

While waiting around like an impatient Spaniard while a man in black freeclimbs the Cliffs of Insanity is kinda boring, we say take advantage of this newly found free time! Wrestle a giant, pour some wine, or tour a fire swamp (avoid the ROUSes). To speed-a-things up, try using your loco like a flashlight to read freight car numbers, look for that knuckle spring you lost last week, or search for the Pit of Despair...as you wish!

NOTE: This does not apply to *any* other DCC system or controller, just ESU.

locomotive on the main and you have any other locomotives assigned to address 3 (the normal default address for new locomotives) that ALL of them will also be changed to your new address! This is great if you want to simulate a bunch of kids getting into the engine shop, notching the controllers, and then heading for the hills before the railroad police arrive.

Note that some DCC systems get a little wonky when programming sound-equipped locomotives on the programming track because of the high current draw. If weird stuff happens (or nothing happens), try programming on the main or use a programming track booster.

TURN ON THE SOUND

Press F8 and you will hear the C30-7 startup sequence followed by the sound of it idling. You can adjust CVs to prevent the locomotive from moving until the startup sequence has played out. Most of us at Rapido are really impatient so we turned this feature off. Refer to a full ESU LokSound V5 decoder manual for more information. You can now download it from ESU's web site. The feature is called the "Prime Mover Startup Delay" and is Section 13.2 on Page 89 of the ESU LokSound V5 manual as of this writing.

If you press F8 when the locomotive is already moving, it will skip the startup and the sound will just turn on. Press F8 again to turn the sound off.

Note that if you are listening to your C30-7 idling nicely and then you select another engine, your locomotive still thinks F8 is pressed so it will keep idling along. However, if someone else selects your locomotive's number and F8 isn't pressed on their controller, the C30-7 will promptly shut down. They will need to press F8 again.

FUNCTIONS

F0 Directional Headlight
F1 Bell
F2 Horn
F3 Flange Squeal
F4 Dynamic Brake *(if equipped)*
F5 Doppler Horn
F6 Front Ditchlights *(if equipped)*
F7 Dim the Headlights
F8 Startup/Mute/Shutdown
F9 Drive Hold
F10 Independent Brake
F11 Directional Class Lights
F12 Switching Mode
F13 Rear Headlight
F14 Rotary Beacon *(if equipped)*
F15 Front Class Lights
F16 Beacon *(if equipped)*
F17 Rear Class Lights
F18 Step Lights
F19 Numberboards

FUNCTIONS: MORE INFORMATION

F0 Directional Headlight

By default, our C30-7 headlights are directional, which means that the headlight on the leading end of the loco will be turned on with F0. Hit reverse, and the headlights swap ends. This is useful if you frequently forget which way you left the reverser when you're switching.

F1 Bell

Probably one of the most difficult sounds to master is the bell because it's such a noticeable feature, and no matter what, chances are they all had their own unique tone to them. We have provided slightly different bell sounds so that you can add a little variety to your huge fleet of C30-7s. You DO have a huge fleet of GE C30-7s, don't you? You can choose between bells by changing CV164 to a number between 0 and 3.

F2 Horn

We love our horns. Like really! Seriously, who doesn't love a good sounding horn? So, we're now providing a wide range of horns for you to apply to your locomotive as appropriate or as you see fit (even if it's not appropriate). To get a short "toot" just tap F2 or your "HORN" button. If you hear a long tail-off, you are tapping for too long. Refer to the "Custom Sound Settings" section below for the CV163 options for the fourteen different horns we've included.

F3 Flange Squeal

Just as you're easing into a sharp curve on your layout, press F3 to hear the metal-on-metal squealing sound all trains are known for. It may also cause dogs to bark and children to cry, but those are the risks you take.

F4 Dynamic Brake *(if equipped)*

Press F4 to get dynamic brake sounds. Who does that? Well apparently a lot of people because once upon a time, we got flak for putting it in the higher tiers of functions on our old locomotives. So for that, we apologize and have brought it to the forefront of functions for your acoustic pleasure, provided you like the sounds of fans. If your unit does not have dynamic brakes, you can *think* about using F4, but that would be so wrong.

F5 Doppler Horn

You can play this when approaching level crossings or any other whistle post. The doppler is nicely timed for a moderately paced train blowing for a level grade crossing.

F6 Front Ditchlights *(if equipped)*

Ditchlights were invented in Canada and installed in the 1960s on road engines to illuminate right-of-way ditches for rockslides and other obstructions. They became mandatory in the USA by 1998. Most American ditchlights flash…but not always. It depends on the era and the railroad. Press F6 to light up the ditches!

F7 Dim the Headlights

When approaching an oncoming train, press F7 to dim your lights and turn off your ditch lights – you don't want to blind an oncoming train's engineer. It will also turn off any other potentially blinding lights you may be running. Not dimming your lights is a direct violation of what's commonly referred to as "Rule 17". The internet can answer all your questions about said rule.

F8 Startup/Mute/Shutdown

While your locomotive is stationary, pressing F8 will begin the startup sequence of the engine sounds. If your locomotive is silent but already in motion, pressing F8 will skip the startup sequence and simply turn on the sound. If the sound is already on, press F8 to mute the sounds. If your locomotive is stationary, then you will hear the engine shut down sequence before the sound turns off.

> *If you have a DCC system that only allows eight functions, you can remap the following functions following the guidelines in the ESU LokSound V5 manual, which can be downloaded from the support section of our web site. Or you can upgrade to a newer DCC system, which may be less stressful.*

F9 Drive Hold

ESU's "Full Throttle" feature allows you to play the prime mover of your C30-7 like a musical instrument. When you press F9, you turn on "drive hold." This keeps the speed of the engine constant at whatever speed step your throttle happens to be on. Then as you increase the throttle, you hear the prime mover revving up. This sounds awesome, especially when you're trying to shove a big string of cars.

"Full Throttle" is even neater when you throttle down, as it allows you to simulate "coasting" which is such an important part of running a real train. When you press F9 again you turn off "Full Throttle" and the engine will accelerate or decelerate to whatever speed step your throttle happens to be on. For realism it's a good idea to take note of what speed step your throttle was on when you turned on "Full Throttle" and be back at that speed step when you turn "Full Throttle" off. Otherwise, your C30-7 may fly off your layout and onto the floor.

F10 Independant Brake

F10 works just like the brakes on a real engine. Press F10, the brakes apply, and your engine will gradually come to a stop. Turn off F10, the brakes release, and

the engine gradually accelerates. ESU's Drive Hold feature has made the brake function more popular, so we've moved it up to F10. The default sound is based on composite brake shoes but if you hate your eardrums, you can change it to cast iron brake shoes and writhe in pain every time the train stops. Change CV165 from 0 to 1 to hear the glory that is a cast iron brake shoe. **Note***:* If your loco makes sounds but won't move, make sure F10 is off because it acts like a parking brake, too.

F11 Directional Class Lights

When you press F11 for non-Conrail units, the leading end white class lights will turn on. Hitting F11 a second time will turn them off. Reversing direction will swap the class lights to the opposite end. White Class lights were used to signify a train was running as an extra unscheduled train in train order territory. On Conrail units, pressing F11 turns on directional red "end of train" markers instead of white lights. A train isn't a train without markers.

F12 Switching Mode

Are you one of those folks who models a large yard or engine terminal, like, say Belen Yard in New Mexico or Selkirk Yard in N.Y.? Do you have lengthy light engine moves between engine storage and the arrival/departure yard? Then this function is for you! It turns on both front and rear headlights but only on dim so as not to blind your trainmen on the ground. It doesn't effect the speed of the loco, just the lights.

F13 Rear Headlight

A common misconception on diesel locos is that the light on the rear should be on whenever the engine is moving backwards. Actually, it's only on when the engineer wants it on, regardless of direction. Pressing F13 will simply toggle the rear light 'off' if so desired.

F14 Rotary Beacon *(if equipped)*

Some railroads equipped their C30-7 units with a rotary beacon, replicated on our model by using function F14. This light fixture moves a beam of light around in a circular pattern all around the loco. In addition to warning pedestrians and cars along the right of way, it also signals to ships at sea, low-flying aircraft, and possibly UFOs.

F15 Front Class Lights

If you want your loco to have the front class lights on no matter the direction you travel, press F15 (on non-Conrail units) and the front white class lights will turn on. Hitting F15 a second time will turn them off. On Conrail units, pressing F15 turns on the front red markers.

F16 Beacon *(if equipped)*

Some other railroads equipped their C30-7 units with a regular beacon, activated on our model by pressing F16. This light fixture flashes a light in a constant pattern. Potentially, it can be used to signal Morse Code: . .. .- .... -.. . .

F17 Rear Class Lights

When you press F17 for non-Conrail units, the rear white class lights will turn on without regard to direction. Hitting F17 a second time will turn them off. On Conrail units, pressing F17 turns on the rear red markers.

F18 Step Lights

Behind each corner step well, there is a light used to illuminate the bottom step. On the prototype, it's used to reduced crew injuries at night. On our model, it's just wicked cool. However, if you want to completely shut down your C30-7 in your engine terminal, press F18 to turn them off.

F19 Number Board Lights

The number boards are on all the time as a default. We hate having to turn number boards back on after a power failure. If you want to turn them off, just press F19.

John Lassahn photo, Jeff Lassahn collection.

CUSTOM SOUND SETTINGS

The default horn on your model is a Leslie S-3K-R. We have justified doing this because a huge number of C30-7s had a Leslie S-3K-R horn. But if you don't like the sound of the one we picked, you can change the default horn by changing the value of CV163. We've also chosen defaults in the remaining categories because someone had to make the important decisions. They can all be changed by adjusting the value of their respective CVs.

Horns

- CV163=0 Leslie S-3K-R *(default)*
- CV163=1 Leslie RS-3L-R
- CV163=2 Leslie S-5T-F
- CV163=3 Leslie S-5T-R
- CV163=4 Nathan K-3H
- CV163=5 Nathan K-3L
- CV163=6 Nathan K-3LA
- CV163=7 Nathan K-5H
- CV163=8 Nathan K-5LA
- CV163=9 Nathan K-5LA-R24
- CV163=10 Nathan M-3
- CV163=11 Nathan M-3H
- CV163=12 Nathan P-3
- CV163=13 Nathan P-5-R24

Bells

- CV 164=0 GE Steel Bell #1 *(default)*
- CV 164=1 GE Steel Bell #2
- CV 164=2 GE Steel Bell #3
- CV 164=3 GE Steel Bell #4

Brake Squeal

- CV 165=0 Composition Shoe *(default)*
- CV 165=1 Cast Iron Brake Shoe

Air Dryer

- CV 166=0 GE Air Dryer #1 *(default)*
- CV 166=1 GE Air Dryer #2
- CV 166=2 GE Air Dryer #3
- CV 166=3 GE Air Dryer #4

MoPower

This model is equipped with MoPower, our capacitor-based temporary energy storage system that lets a locomotive travel over dirty (or dead) rail spots without stopping. The length each loco can move without track power varies by condition of both track and model, your mileage my vary, long-distance rates may apply. **NOTE:** *You will not have control of the loco* when running on MoPower energy, and if you're used to a loco stopping when it shorts at a mis-aligned switch, forget it. Like the prototype, it's not going to stop just because the points are thrown against you (at least until the capacitors are drained). The lengths we go to for more realism!

SOUND VOLUME SETTINGS

The sound volumes on your decoder have been pre-set at the factory to levels that we found comfortable on our test tracks.

Sound levels are very much a matter of personal taste, and what sounds great in one layout environment may sound too loud or too soft in another. Fortunately, the sound levels can be easily adjusted to best suit your own requirements and we recommend that you experiment with different settings if you don't care for the default levels.

To set the volume levels go into the program mode on your DCC system (refer to your system's manual for instructions on how to do this as each system is slightly different), enter the desired CV number, then enter the desired levels. Note that this can be done either on a programming track or on the main (Ops mode) if your DCC system supports programming on the main.

We strongly recommend that you keep notes on which settings you have changed, and which values were used. If you ever need to do a reset on the decoder (see "Factory Reset" below) then having good notes will allow you to easily re-enter any changes that you wish to keep.

February, 1977. Harold Ziehr photo, Kevin Eudaly collection.

— VERY IMPORTANT —

Before you change any of the volume control CVs (except for the master volume), please make sure that CV 32 is set to 1. CV 32 is used as an index selection register and if you don't set it first then we are not responsible for your resulting rage and the fact that you will probably throw your model against the wall in frustration.

For example, to set the horn volume, first set CV32=01, then CV275=1–255.

GE C30-7 SOUND VOLUME SETTINGS

KEY	FUNCTION	SOUND SLOT	CV	RANGE	YOUR VALUE
	Master Volume		63	0-192	
F1	Bell	4	283	0-255	
F2	Horn	3	275	0-255	
F3	Flange Squeal	23	435	0-255	
F4	Dynamic Brake	6	299	0-255	
F5	Doppler Horn	5	291	0-255	
F8	Diesel	1	259	0-255	
F11	Independent Brake	11	339	0-255	
F19	Air Dryer On Shut Down	18	395	0-255	

FACTORY RESET

On your C30-7, you can perform a factory reset by entering a value of "8" into CV 8. Note that this will cause all of your new volume and motor settings to be lost, so you will need to reprogram any settings that you want to keep. What do you mean, you didn't take any notes? WE JUST TOLD YOU TAKE NOTES! If we had a band, you'd be kicked out of it. Again!

You can NOT lose all the pre-recorded sounds on your C30-7 decoder by doing a factory reset. However, after performing a factory reset, your C30-7 may begin to binge watch *Force Five* episodes or recite the lyrics from *Starblazers.* If that happens, you have probably lost your mind. But don't worry. Just sit back, grab some popcorn, and enjoy the show.

By the way, pay no attention to the person breaking into your layout room attempting to steal your Rapido C30-7 because they misread the instructions on Page 4.

MORE INFORMATION

While addressing the features that most modelers will need for normal operation, these instructions have covered just a small number of the many customizable features of your ESU LokSound decoder. For advanced users who want to more fully explore the capabilities of the decoder we suggest downloading the ESU LokSound V5 decoder manual from the manual section of ESU's website. For all the different exploded view drawings showing the stupendous number of detail parts for each version of this loco (along with their part numbers), see the Product Support section of our website. There's just too many parts and variations to get them all on one sheet of paper. By the time you read this, the drawings should be there.

LIMITED WARRANTY

We will do our best to solve any problems or issues that you may have with your C30-7 locomotive. If your locomotive has any defects that originate from the factory, we will repair your locomotive using new components or replace it outright should a repair not be possible. However, we can only replace your locomotive while we have additional ones in stock. While we would love to have an infinite supply of spare parts and do our best to keep as many on hand as possible, eventually these will run out too. In some cases, future productions of the same locomotive may result in a parts supply being restocked, but that is not always guaranteed. If you are like most of us and – after purchasing this locomotive – you put it on the collection shelf under the darkest corner of your layout and are now just discovering it 30 years later after your friend at the club ran theirs, then you are on your own if there are any issues. Jason is long retired and probably touring the country on our restored sleeping car, *Edmundston*. The rest of us have also retired but probably don't have the luxury of our own private rail car. And we're not bitter at all. Really. Not…at… all...

There are several things that this warranty cannot cover. If your C30-7 arrives with a couple of loose grab irons or underbody bits, there is a very good chance that you can affect a repair in less time and effort than it would take to contact us. Don't be afraid to do some model railroading! White glue works wonders for securing all sorts of parts and will not mar or damage your paint. However, if parts are missing that is another story – contact us directly through our website or give us a call and we'll send you some replacements.

Of course, damage caused by running your locomotive at full speed around a 15" radius curve along the edge of your 60" high layout, weathering it with canola oil,

or any other unique damage caused by you and that we haven't been able to cover here is not covered by the warranty. If catastrophe does strike – even as the result of your own actions (or possible inactions) – and your locomotive gets damaged, please give us a shout and we'll do our best to help you out if possible. Don't be shy.

ACKOWLEDGEMENTS

The GE C30-7 project was very much a labor of love as many of us on the Rapido team also love these locomotives. However, this project would not have been possible without the extensive help and expertise provided by the following folks:

Dave Abeles, Tony Cook, A. J. Shewan, James Taylor, Otto Vondrak, and Harry Wong.

2024

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Salt Lake City, Utah, November 27, 1979. Jim Aldridge photo, Kevin Eudaly collection.

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