

ENGLISH

OPERATING MANUAL



1600 HP FREIGHT-PASSENGER LOCOMOTIVE



**RAPIDO TRAINS INCORPORATED
MARKHAM, ONTARIO**

FA-2/FPA-2 LOCOMOTIVE PRODUCT GUIDELINES

Thank you for purchasing the first accurate models ever produced of ALCO and MLW's classic FA-2 and FPA-2 locomotives. This has been one of the most overlooked production locomotives from the 1950s. There have been countless models produced by numerous manufacturers but none to date have been based off a real 3D scan of the prototype and none has been given the museum-quality treatment typical of Rapido Trains Inc. With the great success of our FPA-4 and FPB-4 locomotives, it was only fitting we do justice to their older cousins with their throaty Alco 244 prime movers. We hope you will be pleased with the results.

As always, please do not hesitate to contact us should there be anything wrong with your model. Whether you have a warranty issue (missing parts, square wheels, engineer can't get into or out of the cab, etc.), a question ("Why won't my locomotive provide real steam heat for my coaches? What a ripoff!") or a comment ("The nose is wrong!") please give us a shout. More warranty information is available towards the back of this manual. If you think the nose is wrong, you can go argue with the people at Alco and MLW as we did a 3D scan of the real engine. If you invent a time machine in order to do this, we'll give you THREE free engines in exchange for the time machine. What a deal!

If you are unhappy at the fact that the noses of all of your other Alco cab units now look wrong compared to your Rapido FA-2/FPA-2, we have a solution for you. **BUY MORE RAPIDO MODELS.**

You can reach us by email: trains@rapidotrains.com, by phone (1-855-LRC-6917 or +1-905-474-3314) or by snail mail at the address below.

Please do not send any models back to us without first speaking to us to get authorization. You'd be amazed at how many models arrive at our location with no documentation whatsoever. And if models get sent to one of our old addresses, they might as well have been beamed into the mouth of a wormhole as we'll never see them.

If you've finally got around to opening this model after your retirement in the year 2103, we're afraid that Rapido has been sold a couple of times. First it was renamed Galactic Salvage and Insurance, specializing in accident and insurance claims involving sub-light and hyperspace starships. But Galactic has been out of business since 2096, and Rapido's intellectual property is now owned by the Sirius Conglomerate. All inquiries should be made to Trau Morgus on Androzani Major.

CONTACT US!

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FA-2/FPA-2 DCC FUNCTION QUICK REFERENCE

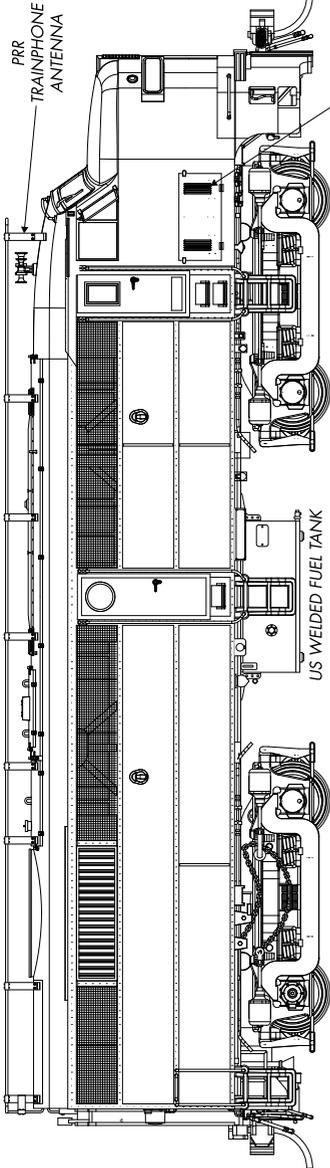
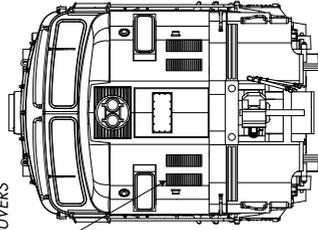
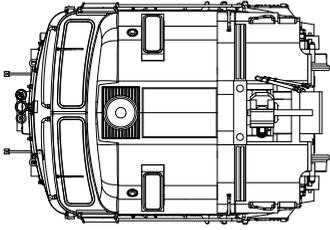
F0	HEADLIGHTS
F1	BELL
F2	HORN
F3	FULL THROTTLE
F4	DYNAMIC BRAKE
F5	DOPPLER HORN (SLOW)
F7	DIMMER

F8	STARTUP/MUTE/SHUTDOWN
F9	CLASS LIGHTS - WHITE
F10	CLASS LIGHTS – GREEN
F11	STEAM GENERATOR
F12	SWITCHING MODE
F14	BRAKE

BREAK-IN

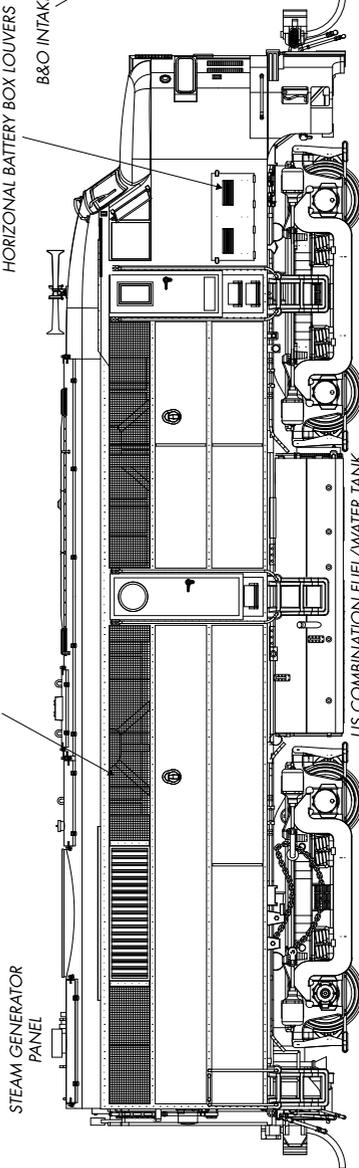
Every locomotive needs a break-in period. Your FA-2 or FPA-2 has been tested at the factory... for about 30 seconds. That is not enough time to get the gears to mesh nicely or to even out any jerky operation in a new motor. We suggest that, after reading this manual, DO NOT try to pull a 40-car freight extra over the Appalachians. Instead, put your FA-2 or FPA-2 model on a test loop and just let it run in each direction for an hour or two. Fast and slow.

There already should be enough grease in the gearbox so you don't need to add any. Just let the thing run.



Alco/GE DL-212 Locomotive (FA-2) - Phase Ia

VERTICAL BATTERY BOX LOUVERS



MESH "CHICKEN WIRE" GRILLES

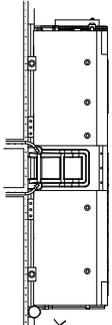
STEAM GENERATOR PANEL

HORIZONTAL BATTERY BOX LOUVERS

B&O INTAKE LOUVERS

US COMBINATION FUEL/WATER TANK

Alco/GE DL-212 Locomotive with Steam Generator (FPA-2) - Phase Ib



MILW COMBINATION FUEL/WATER TANK (CN/CP UNITS)

PROTOTYPE HISTORY

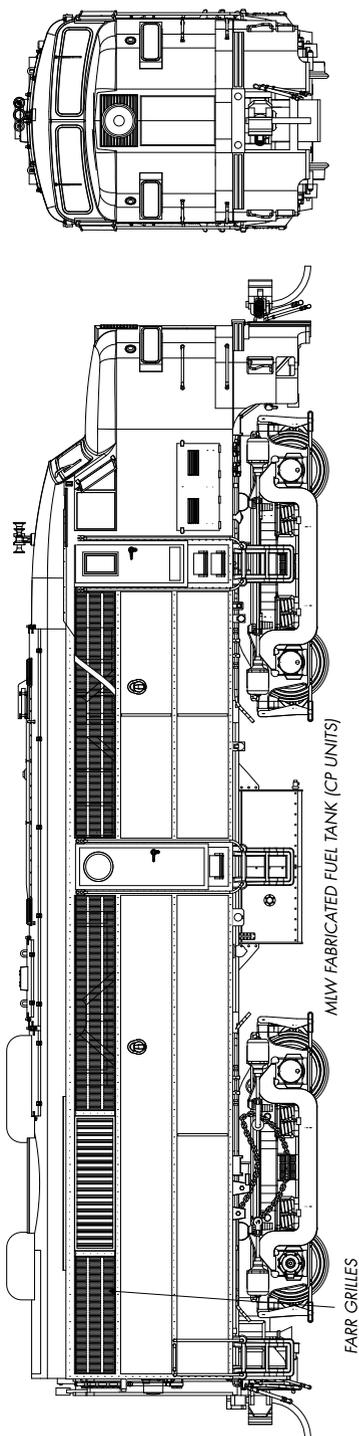
The DL-212 locomotive (FA-2 and FPA-2) along with the DL-213 B-units (FB-2 and FPB-2) were the evolution of the FA-1 and FB-1 developed by American Locomotive Company (Alco) at their Schenectady, NY facility. The new FA-2 and steam generator-fitted FPA-2 locomotives were launched at the end of 1950 in the form of two ABBA demonstrator sets. Units featured uprated 1,600hp 12-244D engines and were available with and without steam generators. To complicate matters, some roads chose not to name their steam-equipped units FPAs, leading to fleets of FA-2s both with and without steam generators. We believe this naming convention was done explicitly to confuse model railroaders 65 years later. The B-units were almost identical to their A-unit brothers with the exception of the lack of a cab and the position of the steam generator and battery compartments.

As with the original FA and switcher/roadswitcher designs, construction of the second generation FA units also took place north of the border for the Canadian market. Montreal Locomotive Works (MLW) was responsible for the manufacture of locomotives under license for Canadian National and Canadian Pacific as well as a batch for Ferrocarriles Nacionales de México.

In total, over 300 FA-2s and almost 200 FB-2s were constructed by Alco and MLW between 1950 and 1956. The New York Central was the largest supporter of the type with 80 FA-2s and 50 FB-2s, although it declined to purchase any units equipped with steam generators. Other big purchasers include the Baltimore & Ohio (57), Canadian National (52), Canadian Pacific (35), Ferrocarriles Nacionales de México (70), Louisville & Nashville (53), Missouri Pacific (102) and the Pennsylvania RR (36 in ABA formation). All except the PRR acquired both freight service FA-2s and dual-service FPA-2s.

CHECKING/ADJUSTING YOUR MODEL

We try and make sure that every locomotive is perfectly up to spec before it leaves the factory, but if the assembly workers danced the night away to the rockin' tunes of Wowkie Zhang the night before your model was put together, there may be a couple of bugs. Doing a quick pre-service check will solve most operational



MLW/Alco/GE DL-212 Locomotive (FA-2) - Phase II

glitches. By the way, the video to Wowkie Zhang's hit song, 倍兒爽, is a hoot. Find it on YouTube and dance all around your layout room like you are a happy Rapido factory employee.

- 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. The wheelset can be regauged by grabbing each wheel and twisting. Reverse the steps to replace the wheelset. Ensure the gearbox cover is snapped into place before placing 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).
- Make sure that the trucks swivel freely and without binding. If they catch on anything, check to ensure that the ends of the trucks don't bind against any underbody piping or conduit. If they do, see that everything is firmly installed.

MISSING OR DAMAGED PARTS

If you open your FA-2 or FPA-2 box and discover that something has obviously been bumped in transit and is damaged, please contact us. If a part has broken off, the easiest way to reattach it is with a drop of white glue. You can't ruin the paint finish with white glue. If you don't like to touch your model trains, you are welcome to send the engine back for us to glue that doodad back on with white glue. But if you do send it back to us 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 Tony scored a 2-point conversion to give the warehouse handlers the victory over the truck drivers. Although argued, there was no flag on the play.

Unlike Rapido's model of the General Motors FP9A and FL9, we can't use our unique "No-Warp Grilles" on the FA-2 and FPA-2. This is because the grilles on the real thing are inset behind very prominent batten strips. As a result, a grille may pop off if subjected to extreme variations in temperature. If this happens, you have a couple of options. Firstly, you can glue it back on with a bead of CA (super glue) along the edges, applied sparingly with a toothpick. Secondly – and this is the part you're not going to like – you need to keep your FA-2 or FPA-2 away from extreme variations in temperature. So don't leave it in the car!

If your layout is in an uninsulated garage, a poorly-insulated basement, or a spare room that gets a lot of sun, there is nothing we can do to prevent the grilles from popping out on occasion. Plastic and metal expand and contract at different rates. A bedroom that heats up to 30 degrees (86 Fahrenheit) on a summer afternoon and cools down to 20 degrees (68 Fahrenheit) every night is deadly for etched parts on models, and is also pretty deadly for track. You will find that a lot of your derailments go away if you properly insulate your layout room and keep the temperature and humidity as consistent as possible all year long.

This is a roundabout way of telling you that replacing grilles that pop out in your layout room (or because the engine was left in your car) is not covered by your warranty. If you replace a grille

yourself and you mess up, we will send you a free replacement grille. If you want us to replace a grille or two, we will for a fee. But please bear in mind there is no point in having us put the grille(s) back if your locomotive will continue to live in a room with high fluctuations in temperature or if you keep leaving it in the car. The grille(s) will just pop out again.

More information about our limited lifetime warranty can be found towards the end of this manual.

REMOVING THE SHELL

If you need to open up your FA-2 or FPA-2 it is actually quite easy to do. Just be sure to remember these important points:

- There is a perception filter built into the circuitry of your locomotive. Should anything pop off while you are attempting to remove or replace the shell, the perception filter is automatically activated. So the part is still in your layout room, but you will be unable to see it no matter how hard you try. Don't bother looking. It is completely hidden. We tried to turn off the perception filter but to do so requires a sonic screwdriver, and the sonic screwdriver at the Rapido factory was destroyed by a visiting fish-like alien ex-con with a keenly-developed taste for fine art and a predilection for destroying things.
- To that end, please make every effort to ensure nothing flies away. Work on a clean, white surface. In fact, paint all the walls, the floor and the ceiling white, wear white coveralls, and remove everything else from within a three-mile radius of your workbench, especially (but not limited to) vegetation, people and sounds.
- Turn the locomotive upside down in a foam cradle (painted white, of course) and remove the coupler screws. Pull the coupler boxes out of the ends and turn the loco right-way up. Now spread the shell and wiggle it off. Carefully. You may wish to slide business cards between the sides and the chassis to assist this process. Don't forget about the perception filter.
- That's it, really.
- No, really. It's that easy.

OPTIONAL DETAIL PARTS

Out of the box, the FA-2 and FPA-2 locomotives feature a large amount of customization to suit particular roadnames, more than any previous Rapido product! This is the first time that the major carbody phases have been produced in HO Scale on the FA-2 (note the side grilles and battery box louvers), while it's the first time that the FPA-2 has been released in ready-to-run plastic ever!

Our search for accuracy led us to producing four different fuel tanks to take into account the differences between locomotives built with and without steam generators, and between those built in the US and Canada by Alco and MLW respectively (with accompanying roof panels of course.) If you look closely we've also tooled US and Canadian versions of the classic Type B cast truck.

For PRR modelers we've provided the full Inductive Trainphone Antenna and unique rear markers, while the B&O locomotives feature the shop-modified louvers found on the these units from the mid-1950s. Future runs will be available with or without dynamic brakes, while we'll also be releasing locomotives with Gyalights and the headlight mounted in the nose door. We're particularly looking forward to making the unique pair of Chicago NorthWestern FA-2s which had a large red emergency light in the nose door!

The Rapido FA-2 and FPA-2 locomotives are provided with the correct details to match the units when first painted in their respective paint schemes. No two roadnames are alike with differences in grabs, horn, anticlimber, MU hoses, wind deflectors, winterization hatches, rear back up light and sill details.

Over the life of the units they often received modifications and we have provided some optional detail parts that you can install on your locomotive to accurately represent different time periods. We only have limited space in this manual to explain all of these parts so please rely on dated photos of your chosen locomotive for positioning of some items.

ATS Shoe and Generator

Many railroads employed intermittent inductive ATS (Automatic Train Stop) equipment on their main lines and all lead locomotives that ran on them were required to be fitted with a pick-up shoe. If the engineer passed a stop signal then the ATS system would kick into action and apply the brakes. Railroads that used ATS included the B&O, Erie, Lehigh Valley and New York Central.

The shoe was generally installed on the lead journal box on the right hand side of the locomotive. However, on NYC's FA locomotives this was located on the rear journal on the front truck. The small generator was mounted under the sill just behind the ATS shoe.

B&O Details

We have printed the classic Capitol Dome herald on the front of your locomotive. On the real thing this was a stylish casting. We have made a nice etched part that represents this detail but this kind of thing is almost impossible for us to install at the factory nice and straight without getting glue all over the front of your model. The best way to install this is to use a dab of varnish or white glue applied with a toothpick. Then carefully position the herald over the printed version.

We've also made the reflective numberplates that were used on the front of B&O's FAs in their early days. Please use photographs to determine the position and whether your chosen locomotive had this detail in your favoured modeling period.

Coupler Cover

The New York Central and Pennsylvania RR and several other railroads specified their units to be delivered with retractable front coupler covers. These were removed after only a couple of years. Our part is a simple push fit in the coupler opening once you remove the coupler. If your railroad also had this feature and we didn't provide it, drop us a line and we'll send you one.

Diaphragm

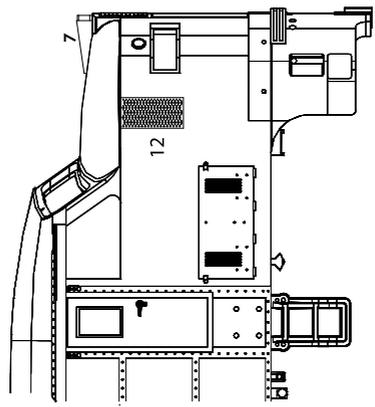
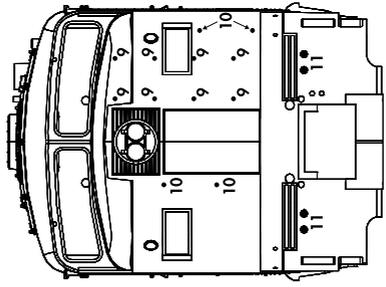
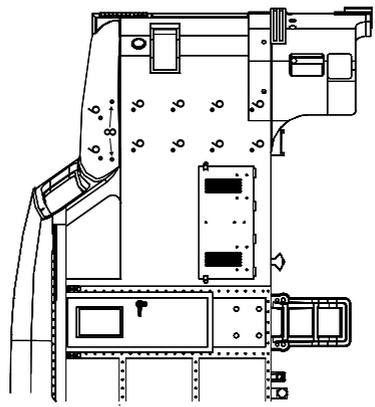
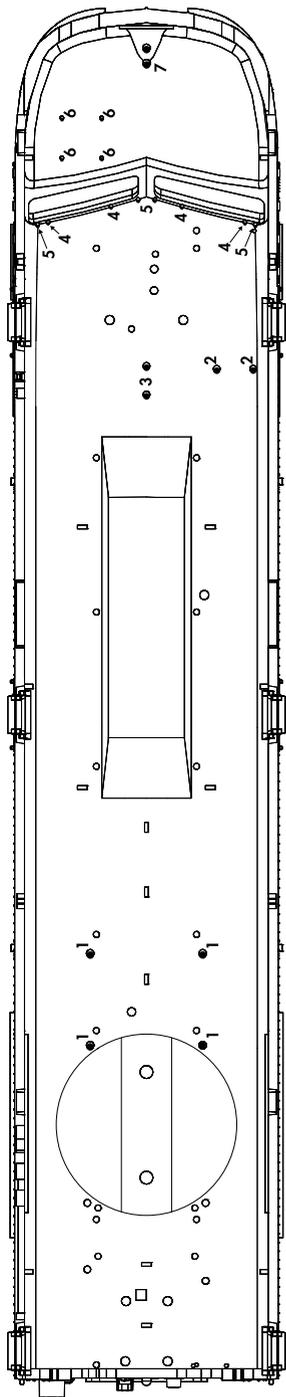
Most if not all FA-2 and FPA-2 locomotives were delivered with a full connecting diaphragm between units. However the extendable part was quickly removed from most locomotives so we've chosen to leave this as an optional detail part. This locates inside the diaphragm at the rear and can be secured with a few dabs of CA or white glue.

Roof Bell/Sunshade

Back when we made the MLW FPA-4 we installed the roof-mounted bell and sunshades as they were standard items on CN cab units by this date. However they were not as-built features on the FA-2. The hole for the horn can be found on the inside of the shell and this should be drilled out.

M3HR Horn

Canadian National and Lehigh Valley units come with an optional horn with one bell reversed.



TEMPLATE FOR OPTIONAL DETAIL PARTS (Reproduced actual size for HO Scale)

- | | | | | | |
|---|------------------------------|---|--------------------|----|---------------------------------|
| 1 | CP Large Winterisation Hatch | 5 | Long Eyebrow Grabs | 9 | Erie RR Nose Access Grabs |
| 2 | CN Roof-Mounted Bell | 6 | Nose Access Grabs | 10 | Erie RR Vertical Nose Grabs |
| 3 | Sinclair Antenna | 7 | Erie MU Box | 11 | MU Hoses |
| 4 | Short Eyebrow Grabs | 8 | Ladder Grab | 12 | Erie RR Nose Side Intake Grille |

Sinclair Antenna

Canadian National and Canadian Pacific units were later provided with Sinclair radio antennas on the roof behind the horn. The two holes for this part are located inside the shell.

Nose Access Grab Irons

Around 1960 the Federal Railroad Authority (FRA) in the USA mandated that all cab units should have fixed access to the top of the nose for cleaning. Most railroads installed a series of grabs on the engineer's side of the nose (such as the GN, LV, NYC and PRR). The Erie Railroad installed theirs on the front of the nose, while the L&N adopted an actual fixed ladder. The side of the pilot was often modified with an additional step. The B&O used a combination of grabs with a side platform but they are out of period with the 1956 era scheme that we've used. These will be provided with future runs.

We've provided a choice of plastic or metal wire grabs. The pre-painted metal grabs are made from 0.25mm wire and should look great. However, we also provided plastic grabs complete with nut/bolt/washer castings because we know that some people like these. The choice is yours!

Louvers

Many railroads fitted louvers in the nose to try and reduce draughts to the cab caused by the traction motors sucking air through every available orifice! We tooled up a special nose just for the B&O locomotives with the distinctive four vertical louvers. The Erie Railroad used the most dramatic shop modification which comprised two large mesh grilles on both sides of the nose. These weren't fitted from new and they appear to have been removed by the Erie-Lackawanna days. Because of this we've provided the grille as an pre-painted etched part. The easiest and quickest way to install this is simply to glue it in place using white glue. This isn't a perfect solution as they are slightly inset into the body on the real thing. However, this is experienced modeller territory and well beyond the bounds of this instruction manual.

Ladder Grab

Before 1960 many US railroads installed a single ladder grab on the top corner of both sides of the nose to make access to the top of the nose safer for cleaning. This comes pre-installed on some locomotives. The GN, LV and NYC units did not have these from new but they were installed later so we've provided them for you to add if you so wish. See the drawing for typical location.

Nose Top MU Box

Many railroads installed MU jumper boxes to the front of their FAs and these could be located almost anywhere. The Erie's solution was unique and we just had to make it. These were installed in Erie days and lasted until retirement. It's a simple addition to the top of the light housing and requires you to make just two small holes. Install with a dab of white glue.

Large Winterization Hatch

The winterization hatches on CPR's FAs caused us much difficulty. In their early days there seem to have been at least three different versions located at the rear of the radiator fan. We've standardized on the most common type that lasted on these locomotive right through to retirement. This hatch is factory installed. The forward mounted hatch was also installed on most units - check dated photos of your chosen road number. This is a simple job to install on your model. Just drill four holes - there are starter holes on the underside of the roof.

MU Hoses

The B&O, Erie, LV did not have MU hoses from new but these were installed at a later date. We've provided one version but as these often differed in design you might want to use other aftermarket parts. A drill template is provided for the location.

OPERATION - DC (SILENT)

If your FA-2 or FPA-2 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.

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 FA-2 or FPA-2 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 16 volts DC. Similarly, controllers designed for large scale trains put out a much higher voltage than your FA-2 or FPA-2 can handle.

If you use a train set throttle or a throttle designed for large scale trains, your locomotive’s circuitry may end up looking like those “your brain on drugs” commercials. In such situations, we’ll try our best to fix it for you. But we may have to charge you for the replacement parts and/or the labour involved. That’s because you didn’t read this bit of the manual.

In DC, the class lights are installed and wired, but they will not work. The rear headlight does not work in DC. It is really only used for switching moves.

INSTALLING A SILENT DCC DECODER

The FA-2 and FPA-2 contains a motherboard which 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 plug and install a 21-pin decoder (recommended) or a 21-pin adapter to attach an 8-pin or a 9-pin decoder. Your chosen decoder should have six function outputs. We recommend the following 21-pin decoder:

- ESU #54615 - LokPilot V4.0 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 tinker around with resistors. Just plug in the recommended decoder and you have DCC.

ESU has made an FA-2/FPA-2 function map which can be downloaded into their non-sound decoder (54615) so that the function buttons and motor control are exactly the same as our factory-released sound versions. This is available for download on the FA-2/FPA-2 page in the Support section of our web site. You will need an ESU LokProgrammer to write the function mapping to the 54615 decoder. If you don’t have a LokProgrammer, you can adjust CVs in the usual way.

OPERATION – DC (SOUND)

To operate your sound-equipped FA-2 or FPA-2 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. Do not use “pulse” control as it will fry your engine.

WARNING: If you have purchased a sound-equipped FA-2 or FPA-2 and you operate your trains with a Model Rectifier Corporation RailPower 1300-series DC controller, stop what you are doing immediately. Do not pass Go. Do not collect \$200. Don't go landing on the Reading Railroad either. The RailPower 1300 is notorious for voltage spikes and it WILL destroy your locomotive. There is no "if" about it. We will not repair any FA-2, FPA-2 or any one of our locomotives destroyed by a 1300 or any other "train set" DC controller. "Train set" DC controllers should not be used with sound-equipped locomotives.

As in silent locomotives, the only lights that work in DC are the headlights (when going forward). The light on the rear of the locomotive is only used when switching and cannot be turned on using a DC controller. The number boards and step lights are always lit.

Some throttle manufacturers produce special thing-a-majjgs which are meant to trigger the sounds in locomotives on DC layouts. As we have no involvement in the development of those thing-a-majjgs, we have absolutely no idea how they will affect your FA-2 or FPA-2, for good or for ill. As always, we'll try to help you fix your units if one of these thing-a-majjgs scrambles your locomotive's circuitry, but we can't guarantee we'll be able to, and we will need to charge you for the repair.

If you like running sound-equipped locomotives and advanced lighting features, you might want to think about upgrading to DCC. DC model railroad control dates from the 1930s. We like stuff from the 1930s. Art Deco architecture – awesome! Early Hitchcock films – awesome! Rotary telephones – awesome! Beautifully-restored Packard Ninth Series – awesome! But ancient model train controller? Not so awesome. You wouldn't expect your rotary phone to be able to surf the internet. Similarly, you can't expect your DC system to be able to take advantage of the last 20 years of model train technological developments.

If you insist on sticking with DC and you want a taste of what you are missing, please read on...

OPERATION – DCC WITH SOUND

We go to extreme lengths for accuracy, in sounds as well as in looks. Our sound decoders are LokSound Select decoders by ESU, programmed with sounds we recorded from an ALCO 244 prime mover we found in excellent working condition ... in Australia! The sounds are 100% correct for the FA-2, because as much as we know our Alco 251 recordings used in the FPA-4 are the best of the best, they would be totally inaccurate in your FA-2 or FPA-2.

As we do for all of our sound decoders, we recorded the prime mover under load, in this case hauling another engine up a hill. Locomotives sound a lot different when they are actually working, rather than doing a stationary load test. If you have decoders from other manufacturers in your locomotives you might want to check out the available line of Rapido decoders on our web site. All of our decoder sounds were recorded under load and we simply can't stand decoders that don't have this feature. You can order our decoders from your hobby shop or directly from us.

More detailed decoder instructions, including all sorts of weird CV settings we still don't understand after all these years, can be found in the ESU Loksound Select decoder manual. This is available for download on the FA-2/FPA-2 page in the Support section of our web site.

LOCOMOTIVE ADDRESS

Your Rapido FA-2 and FPA-2 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. Once you have verified that the locomotive is responding you should assign it a unique address (we suggest the road number of the locomotive) 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 locomotive on the main and you have any other locomotives on your layout assigned to address 3 (the normal default address for new locomotives) that ALL of them will likely also be changed to your new address! Also be aware that if you give your locomotive a four-digit address it will not work at all if you try to run it on a friend's DC layout.

Also please keep in mind that some DCC systems do not have sufficient power to program sound-equipped locomotives on the mainline. If your sounds do not operate correctly on a Digitrax DCC system, this likely means that you need to clear the memory on your system, achieved by "clearing slot #36." A basic summary of how to do this can be found on the FA-2/FPA-2 page in the Support section of our web site. More detailed information can be found on the Digitrax web site.

If you have a really old DCC system, you may find that this locomotive won't work at all – nor will many other new models. Go update your DCC system to a newer version. Your computer is updated regularly – or at least we hope it is. Your DCC system should be updated as well.

TURN ON THE SOUND

Press F8 and you will hear the FA-2/FPA-2 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. Jason is really impatient so he turned this feature off. Refer to a full ESU LokSound Select decoder manual for more information. You can download it from the FA-2/FPA-2 page in the Support section of our web site. The feature is called the "Prime Mover Startup Delay" and at the time of writing it was on page 35 of the ESU manual.

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 FA-2 or FPA-2 idling nicely and then you select another engine with your throttle, 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 his or her controller, the FA-2 or FPA-2 will promptly shut down. He or she will need to press F8 again.

FUNCTIONS

F0	Headlights	F8	Startup/Mute/Shutdown
F1	Bell	F9	White Class Lights
F2	Horn	F10	Green Class Lights
F3	Full Throttle	F11	Steam Generator
F4	Dynamic Brakes	F12	Switching Mode
F5	Doppler Horn (Slow)	F14	Engine Brake
F7	Dim the Headlights	F15	Turn Off Numberboards

FUNCTIONS: MORE INFORMATION

F1 Bell

Ding, ding, ding went the bell. Sorry, trolley clang not included.

F2 Horn

We have improved the horn file to make it easier to do a short “toot” without having a long tail off. 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. If, no matter what you do, you just can’t get the darn thing to make a short “toot,” switch to NCE.

The default horn is the classic Wabco E2 blatter, which may be wrong for your road. In choosing the default horn, it was a coin toss between a Nathan M3H and the E2. If the horn sounds too low and angry to you, you can change it to an M3H. On a programming track, change CV 48 to a value of 0. This will change both the standard horn on F2 as well as the Doppler horn on F5. Both will now be M3H horns. To change them back to the E2, change CV 48 to 2.

CV48-0 Nathan M3H

CV48-2 Wabco E2

Just two horns in the first run! The next run will be much more exciting with five chimes, Hancock horns and some other weird and wonderful noises.

Note that you can only change the horn on a programming track or using a LokProgrammer.

F3 Full Throttle

ESU’s “Full Throttle” feature allows you to play the prime mover of your FA-2/FPA-2 like a musical instrument. When you press F3, 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 allows you to simulate hauling a heavy load. On the prototype the prime mover would be up at 7 or 8 while the engine is moving slowly.

“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 F3 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 FA-2 or FPA-2 may take off like a race car.

F4 Dynamic Brakes

Yes, F4 operates the sound of the dynamic brake.

F5 Doppler Horn (Slow)

Not only is a slow Doppler horn a new feature we’ve started introducing on all of our locomotives, but it just got better! The mad scientists at ESU (ok, it was just Matt) have found a way to automatically change the Doppler horn when you change the base horn programming! No more Wabco base horn with an M3H Doppler!

F6 Special Lighting

Depending on the road and model, some units had an additional headlight, gyalite or red emergency light on the nose. Hit F6 to activate this extra luminary. If your unit doesn't have an extra light, pushing F6 will do nothing. Nada. Zippo. Your locomotive may laugh at you for trying though.

F7 Dim The Headlights

If you are approaching a station or an oncoming train you can dim the headlights automatically by pressing F7. You don't want to blind the oncoming crew or your potential passengers.

F9 White Class Lights

It was common practice for railroads to run freight and passenger trains to a schedule. But in the event your railroad needed to move some unscheduled cargo, you will want to turn on the white class lights. These would be used when pulling a freight train or any other non-scheduled train, such as a track inspection train or a Christmas special. On regular, scheduled passenger or freight runs, the class lights are off.

F10 Green Class Lights

The green class lights were used only when there was a second section of a scheduled train following. That was rare, but could often happen during busy tourist seasons or at times of heavy freight traffic. If you model a second section of your passenger or freight train during one of your op sessions, make sure the first train has the green lamps lit.

F11 Steam Generator

Of course we had to add the steam generator sounds to the FPA-2. Yes we know, the freight-service FA-2s never had steam generators. Just kindly ignore that and... Hey look over there! It's Rapido Dan dancing on the table in a tutu! We really love the sound effects of the steam equipment that we wish we'd thought of it with a lot of our earlier engines. If you have other units that could use some totally awesome steam generator sounds (along with all of our other great sound features), you can order new Steam-Equipped sound decoders from Rapido.

F12 Switching Mode

If you press F12, the headlight and rear light will both be on dim. This is appropriate for switching operations, which would be common in yards and terminals. This is the only way to turn on the rear light on our FA-2 and FPA-2 as during normal operations it was the only time that it would have been used. Press F12 again to turn off the switching mode lighting.

F14 Brake

In the 15 years (and counting) of making model trains, we have met three people who use the brake feature on our locomotives. So we've shoved this to a higher function button. If you are one of those three people, you can remap this feature onto a lower function button by following the instructions in the full ESU Select Decoder manual, which can be downloaded from the FA-2/FPA-2 page of the Support section of the Rapido web site.

F15 Turn Off Number Boards

The number boards are lit by default, a big improvement over our previous models. It was annoying when you'd lose power because of a short somewhere else on the layout and then you had to go through the tedious task of turning your number boards back on. If you really want them off, press F15. We suggest you be a radical and just leave them on.

SOUND VOLUME SETTINGS

The sound volume settings have been designed to be layout friendly. That means that they will not sound particularly loud if you are accustomed to other manufacturers' locomotives BLASTING at full volume out of the box. They will also not sound particularly loud if you are going deaf like Jason. (He's modeling Spadina Yard with its engine terminal and 40 idling locomotives. You should be able to hear his layout from Cincinnati.) You can easily make some of the sounds louder if you regularly operate your locomotives at shopping malls, train shows, or on airport runways. If you want the sounds to be even louder, we suggest you give up scale modeling and go buy a real FA-2 or FPA-2. If you choose the later, please don't burn yourself on the steam. [We have to check this. The sounds may be maxed out.]

You can also adjust the relative volume levels of the different elements of the sound recordings. If you are the type of guy who wants his FA-2/FPA-2 bell heard in the next province or state, you have lots of room to increase its volume. Ours is set at level 65 of a possible 128.

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 might want to keep.

VERY IMPORTANT: Before you change any of the volume control CVs, 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 the locomotive against the wall in frustration.

For example, to set the horn volume, first set CV32=01, then CV275=0-128.

FA-2/FPA-2 SOUND VOLUME SETTINGS				
FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
MASTER VOLUME	63	180	0-192	
PRIME MOVER	259	128	0-128	
HORN	275	128	0-128	
BELL	283	65	0-128	
DYNAMIC BRAKE	299	60	0-128	
STEAM	315	30	0-128	
DOPPLER HORN	379	128	0-128	
BRAKE SQUEAL	459	50	0-128	

FACTORY RESET

On your FA-2 or FPA-2, you 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. You did keep notes, right?

You can NOT lose all of the pre-recorded sounds on your FA-2 or FPA-2 decoder by doing a factory reset. If you manage to lose all of the sounds on your locomotive then you have probably set fire to your decoder with a voltage spike. Open up your locomotive and pour out the ashes.

AWESOME SLOW SPEED THINGY

There is an awesome trick that you can use to get even better slow speed running and smoother operation. It's called the Automatic Motor Tuning Feature. This feature will automatically adjust the Back-EMF in most cases and give you phenomenal slow-speed performance. Make sure you do this to each locomotive separately rather than your A and B units together.

In order to use this automatic adjustment you need to use Ops mode programming, i.e. programming on the main. Make sure your locomotive is in "forward" and that you have lots of room in front of it on your mainline. Set CV 54 to a value of 0. Then get out of programming mode and turn on the bell (press F1). We'll say this again: Make sure you have plenty of room in front of your locomotive and it is not headed for the layout edge and the basement floor!!!

Your FA-2 or FPA-2 will quickly take off at full speed and gradually slow down to a stop while the decoder reads the motor responses. You'll have fabulous motor control after you do this. If you ever have to reset your locomotive, you can do the automatic adjustment again – it just takes a few seconds.

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 Select decoder manual. This is available on the FA-2/FPA-2 page in the Support section of our web site.

LIMITED LIFETIME WARRANTY

We will do our best to solve any problems or issues that you may have with your FA-2 or FPA-2 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. We normally keep spares for up to six months after a model is released.

If you purchased this locomotive at age 25 and you've only first opened it while receiving your pension, it is possible that we no longer have any replacements, we're retired, or we're pushing up the daisies. Please check to see if we still exist and give us a call or floom us a hologram, and we will see what we can do to help you out. If the eastern part of North America is covered by one big glacier or under elevated sea levels, chances are we're extinct. Don't bother calling. We won't get your voicemail.

There are a number of things that this warranty cannot cover. We've already gone over the bit about reattaching loose parts yourself – don't be afraid! The worst thing that can happen is that you ruin a gorgeous \$325 locomotive and have to give it to the neighbour's dog as a new chew toy. If parts are missing, please call us or send us an email and we'll send you some replacements provided that we have them. As mentioned above, this warranty does NOT cover grilles that pop out over time or damage caused by voltage spikes on MRC 1300 or "train set" power packs. If you fry up your DCC settings and can't fix it, we will be pleased help you. But depending on the nature of the problem we may have to charge for the repair.

Of course, damage caused by throwing your FA-2 or FPA-2 out of a moving transit vehicle, generously allowing your niece to use your FA-2 or FPA-2 locomotives as hair curlers, changing the locomotive numbers with a 1" wide brush and house paint, adding realistic weathering by leaving your FA-2 or FPA-2 on a windswept shore for seven years, or any other damage caused by Acts of You that we haven't mentioned here is not covered by the warranty. However, if catastrophe does strike and your locomotive gets damaged, please give us a shout and we'll do our best to help you out. Yes, even if it was your fault we will try our best to fix your locomotive for you. If there is an extra charge it will be reasonable. **We want you to be happy. Don't be shy!**

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Thanks to Richard Longpre for the excellent Canadian French translation. All you FA-2 customers in Louisiana no doubt appreciate it. Don't speak French? You can use this manual to teach yourself conversational French, provided you only ever converse with other model railroaders. Tab**nac....

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