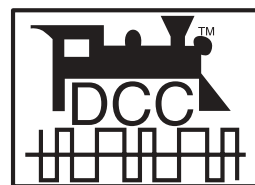




Popular Locos, Some Flaws



updated 1/18/2005

As a result of numerous installations performed at Tony's Train Exchange, here are some of our observations concerning some popular locos. By and large, all the following locos, except as noted, represent good investments.

Tony's Train Exchange will update this information when warranted.

ATHEARN

Athearn Gen.2-8-2 Mikado.

Athearn's first entry into the steam market is impressive. The 2-8-2 rivals the Bachmann Spectrum steam series! The appearance and detail is excellent, and the running gear is precision Korean format consistent with their brass offerings. The electrical pick-up is accomplished by using split axles and frame. Therefore no wipers are required, a big plus in my opinion. Although the molded detail is excellent, the user is required to add a significant portion of the fine detail elements like hand rails. The front light uses a yellow LED which is not attractive.

I have two concerns with this loco:

(A) The wiring or the umbilical between the loco and tender is covered with black shrink tubing. The stiffness of this combination virtually renders the loco inoperative. The user can remove this shrink tube with a razor knife and then paint the wires. Caution, there have been user reports about the fragile termination soldering of these wires causing breaking or shorting.

(B) Traction. The 2-8-2 will pull only about ten average freight cars over a 4% grade. This may improve as the loco rims get worn.

Notes: The 2-8-2 uses a 9 pin header connector for DCC conversion. The following decoders will mate directly with this header plug:

TCS: T1, T2

Soundtraxx: DSD150, DSD100

NCE Corp: D15SR

Lenz: LE 1014 JST, 1025 JST

Digitrax: DH123D, 163D

The above locos and more similar models to come represent a good opportunity for the Steam modelers to have high performance and good detail at a reasonable cost.

ATLAS

"N" GP40-2: Some units slow down unexplainably in tight radius turns.

"N" SD-60/60M: Intermittent contact of some DCC decoders to frame pick-up point causes erratic running. Solution is to add more solder to decoder pads that engage in frame.

"HO" RS-1: Narrow body shell may require some slight "file to fit" for installation of special format plug n play decoders made for these type of loco's.

"HO" GP-7 Classic: Tight internal vertical clearance allow minimum space for NMRA plugged decoders. Caution, decoder wires may short upon compression (assembly).

BACHMANN

Bachmann Spectrum Mountain 4-8-2

The detail and the running gear are comparable to their first release, the acclaimed, Consolidation 2-8-0. Generally the 4-8-2 has been cast in the "same mold". Because it is larger than the 2-8-0, the 4-8-2 has good hauling power (10 Spectrum Heavy Passenger units over a 4% grade).

However, some of these early production units have been released that exhibit the following problems:

(A) Bent or distorted electrical pick-up wipers on the loco's main drivers. There are eight of these phosphor-bronze wipers, one on each of the loco's main drivers that have been designed to wipe the inside rims. We found some of these wipers distorted and wiping on the spoke area. These can be repositioned by using a suitable tweezers.

(B) A chattering noise or sound related to the operation of the motor and drive linkages. Chatter increases with RPM and was more prevalent in reverse.

(C) Waddling or yawing of the loco side to side, probably as a result of a slight quartering intolerance. In most cases this waddling was barely noticeable and acceptable.

We are in the process of evaluating our stock and have been working directly with the folks at Bachmann to resolve the issues. They have advised us that the loco side rods and mechanisms are delicate and should be carefully handled. They also suggest the user to lubricate the side rods before steady running. I am confident that the 4-8-2 issues will soon be resolved to the benefit of all.

Note: The 4-8-2 uses the standard 2X4 NMRA plug assy. Any decoder with this plug will work for DCC operation. Soundtraxx will soon be releasing a special Plug n Play decoder for both Spectrums.

"HO" Spectrum 2-8-0 Steam

About 5% of locos released run rough. Return to dealer or Bachman. Plug assembly between loco and tender are very delicate and wires can pull out easily. Because of circuit board in tender loco does not run well on "DC" with decoder installed.

"HO" Most Spectrum Diesels

Split frame designs do not allow much extra space so "N" scale decoders are needed. Thin decoders like Lenz 103XF and NCE D102 will also work on several units.

Revisiting Bachmann Spectrum DCC Ready Locos

Bachmann Spectrum DCC ready locos require some modification to run properly on DCC.

Many locos in the Bachmann Spectrum line have been released DCC ready with the NMRA plug or other terminations making DCC installation simpler. There have been constant problems with the DCC ready circuit boards in these locos because Bachmann in order to meet international and European specifications requires a type of filtering that effects DCC performance.

Generally there are capacitors, resistors and the like being used for filtering, that interfere with DCC ops. These can be removed. The following examples give you specific info:

(used with permission, Audie C. Bell)

The Bachman Spectrum Series is still having problems with those pain in locomotive circuit boards being professed to be DCC Ready. To date, I have been required to remove these boards from their 2-8-0, 4-6-0, 3 truck Shay, 4-8-2 and NW-J5 4-8-4 engines to fully operate as DCC. After giving this company the benefit of Doubt, I again tried to install a DCC decoder in the last engine I bought. Below is the letter and check I am now sending to Digitrax to correct another Bachmann design Flaw. Here is the Picture of the Flawed Part?

The Digitrax DN-121 in question was being used in a Bachman Spectrum GE-44 Ton Locomotive. This was one of their new units that are reportedly DCC ready. When after about a week of running (Combined time) it started acting strange. The combined units (DN-121 & Loco) started running Jerky, both in forward & reverse. After cleaning wheels and track the setup continued running in this jerky mode. I changed over to analog mode and the unit would run only in reverse, and no lights. Removed the DN-121 and tried testing the DN-121 using my test box, which has no wheels or Chassis s to short out. Same results, the decoder would only run in reverse mode and didn't respond to program changes. Opened the Red/Orange cover and see no indications of burnt. Leaving the shell off the engine (Spectrum GE-44 ton) I wired in a New DH-123 to Bachman's DCC ready board and it to started running Jerky, only now as it would run forward the lights would blink on & off as the loco made the short distance on my program track (32"). I took the DCC board out and checked all points in the Chassis and motor, for grounds or shorts using a Fluke Meter. None found. I then tested the Bachman DCC Board using a spare Ahearn motor and Power pack, which is when I found the Shorting problem. By Chance or Coincident the two Wire Wrapped Resistors/ components will touch each other when the decoder is installed and closed within the shell causing a short between the resistors and DCC connection solder points.

Used with permission, Train Control Systems.

IHC

"HO" Older models

Oversize flanges do not run well on code 83. Models 1-2 years old: Flanges are okay for code 83.

KATO

RS-2, RSC-2

Insufficient room for installation of most common NMRA plug assemblies furnished with most popular decoders. Plug are too thick!(again) While I have seen folks attempt to do this, the installation is highly compromised problematical and unreliable . This prompted Tony's to develop , in cooperation with NCE, a specific advanced decoder for the RS-2 application, TTE/RS-2 which is now available and features a unique design with the plug pins mounted directly to the decoder circuit board so there are no wires.

Kato changed the the pick-up method on this loco from hot wired shoes to sliding contacts, similar to the NW2, which as we predicted has reduced pick-up reliability as reported by several owners now.

"N" Mikado

Fragile draw bar assembly between loco and tender is key to good pickup and loco performance. Observe caution when handling or working on this loco.

LIFELIKE

Life-Like Proto 2000:

Older Models: SD7, SD9, GP18, GP20, SW9/1200, GP9 Phase III

1) Plastic clips that hold body shell to frame break easily after several assembly cycles; be prepared to have shell and frame separate when you pick up unit.

2) Worm gear covers on power truck assemblies easily separate during shipping, causing wheels to freely rotate. Not always obvious so check to make sure all wheels have power.

The above does not apply to: GP7 Phase I and Phase II, GP9 Phase II, GP30 Phase I and Phase II, SD60, S1, BL2, FA1, FA2, E6, E7, E8/9, PA/PB or any steam and all future models.

3) E7,E8 Axle journals easily separate from side frame during shipping. Check carefully to make sure they're on. Plug-n-Play for DCC ready E7 not easy; most decoders with plugs have harnesses too short so splicing is required. Lenz is producing longer harnesses that will work.

4) PA, Users have reported over 1.5 Amp stall current that may exceed the current rating of some decoders. No problems have been reported thus far.

5) SW 9/1200 Circuit board supplied with loco that connects lights and motor is tight fit and may interfere with proper engagement of body shell to frame. New Tony's decoder makes installation simple.

6) GP-7, GP-30 New releases. LifeLike has revised the design of the DCC ready NMRA socket for these and future models. Unfortunately this does not allow installation of most of the current decoders with the NMRA plug because plugs are too thick. Tony's has released a specific advanced decoder for this application that is cleanly and easily installed, designated TTE/GP-7.

Note: These locos require that light bulbs be changed to 12V or use 180 ohm, 1/2 watt resistors on existing bulbs.

Note 2: We view the above minor flaws as inconsequential compared to the price, the performance and detail of all Proto 2000 series locos.

Proto 2000 GP-38-2 Wiring Problem

George B has discovered a problem with the Proto 2000 GP-38-2 that may damage decoder.

A number of our members have encountered a significant problem when installing plug-n-play type decoders in the new Lifelike Proto 2000 GP38-2 locos, just released. It appears that the lamps used by Lifelike to light the Number Boards are improperly wired to the connector plug at the factory which will result in damage to the decoder used if operated on DCC. The lamps are connected between the rails on one side and the output of the decoder on the other. While the decoder will seem to program properly - when the operator attempts to run on main power the unit will not respond and may have blown control in one direction - the number board lamps will also not operate.

My suggestion is to remove the lamps that light the numberboards, replace them with 12V 40ma lamps and connect them across the red & black track wires - they will be on all the time or use one of the functions if you want to turn them on and off. If your decoder supports 1 1/2 V lamps - you can use the ones that Lifelike supplies , when connecting to other functions otherwise you'll need to replace them with 12V.

George

LIONEL

Surprise, Lionel Challenger Arrives!

Every day when UPS arrives the crew stops to see what's come in and then react like kids in a candy store! Yesterday, unannounced, a Lionel Challenger arrived totally unexpected. So within seconds the box was opened and the loco was on our test layout. Here are some of our initial observations:

The Boiler and Tender are all die cast, great detail, in some areas a little better than the Trix Big Boy and others areas a little less. The Lionel boiler shows rivet details not seen on the Trix, and the Trix has applied grab irons the Lionel's are in the casting. Both units have fine detail that will satisfy most folks.

The running characteristics were relatively good with a smooth creep at Speed Step 3 in the 128 range. Speed Steps 1 and 2 had the loco slowly moving with some slight hesitations at one of the quartering points. This may be a break in issue. The Trix is dead smooth at Speed Step 1/128.

The Lionel Challenger is fitted with QSI sound and is characteristic of the QSI performance seen in the Broadway Ltd locos. Except this unit had a distorted whistle and we were disappointed. We tried lowering the volume with little improvement. This may be an anomaly, I am contacting QSI today to have them listen to determine what's wrong.... more later.

The QSI motor output features BEMF control to improve smoothness under varying loads. Full stall was about 1 Amp as measured by our RRampmeter an normal running under load is 0.2-0.4 Amps.

The Challenger has essentially all wheel pickup. The loco drivers use the same type of Phosphor Bronze wipers used on the Heritage 2-8-8-2 and most Bachmann Spectrum Steam locos. Ultimately these type of wipers will require adjustment and cleaning. The Trix Big Boy has a better method and is done through the axle journals.

Traction is about the same as the Trix, neither loco could overpull the other in a head to head duel.

Overall the Lionel Challenger is an impressive loco and joins the ranks of the other new high tech offerings by Heritage, Trix, BLI and Bachmann Spectrum.

The Trix is still the leader in engineering precision, smoothness and detail closely followed by the Heritage 2-8-8-2, BLI and Bachmann Spectrum series.

Lionel Challenger Needs Tinkering

For optimum performance the Lionel Challenger requires some tinkering and lubricating. This observation has been conveyed to us by Bob L., a seasoned Model Railroader and tinkerer.

Out of the box overall pulling performance is poor, only 6-8 cars up a 2% grade. The tender is very heavy, about a pound. The weight in the tender can be removed and it doesn't appear to adversely affect tender tracking while improving pulling power.

Bob also discovered that lubricating all the tender axles and loco pilot/trailing axles increased pulling power almost 40%.

Dissatisfied with the sound, Bob installed some cotton between the face of the speakers' cones and the floor of the tender. This reduced distortion and significantly improved fidelity. Our earlier observations commented on the whistle's apparent distortion.

Here is an unedited report by Scott H about the Challenger's low speed performance we also commented on.

Hello,

I saw the comments about the new Lionel HO Scale Challenger on your (Tony's Trains) web site.

*<http://www.tonystrains.com/technews/loconews/lionel-challenger.htm>
I just took delivery of two of these locomotives from Caboose Hobbies and they both suffer from the low speed running problem mentioned on your web site.*

I have carefully checked the mechanism and have found the source of the problem. On the front engine the crank pins on the first driver's rods catch on the crossheads. There is simply not enough room to have the crank pins clear, even on straight track. At slow speed the pins hit and jam until the motor generates enough torque to overcome the resistance. This can lead to some rather dramatic lurching of the locomotive at throttle step 1. Once the throttle is increased to step 3 or above the lurching stops. However, the front engine vibrates at speed - which is probably caused by the crank pins hitting the crosshead.

This is a serious design/assembly problem as it destroys slow speed running qualities as well as potentially leading to reliability problems as the front engine shakes itself apart as well as subjecting the motor to excessive loads and wear.

I will also be contacting Lionel about this issue, as well as the dealer I purchased the locomotives from.

Thanks Scott for this info! Let's see if Lionel acts on this and makes the necessary improvements ... or exhibits the arrogance that Athearn demonstrated by not fixing the traction/imbalance problems of their Genesis Steam 2-8-2 and 4-6-2 locos.

Lionel Challenger Tweaking

by Robert Liberman

Thanks to Bob Liberman for more details on Tweaking Lionel Challenger.

I received my Lionel Union Pacific Challenger, took it out of the box, put it on my program track and put it on the railroad! This locomotive weighs 2 lb and to my amazement the tender weighs 1.25 lb.

I ran the locomotive on my railroad as a caboose hop for a shake down run. Here is what I noticed about this run.

* The speed was just a little fast for my taste.

* The whistle had a little too much reverb, and not enough base. (UP Challenger & Big Boys had very low base saturated steam whistles)

* The locomotive chuff was a little bit too tinny and a little bit too loud for my ears.

I returned to my largest yard and backed up to a 25-car train for the second part of my test, pulling power. The train left the yard and ran pretty well, with a 2 lb locomotive I did not expect much trouble with 25 3.5 oz cars.

The steepest grade on my layout 2.5% and it is 35 feet long and has a 40° radius curve on it. About half way up the hill the Challenger stalled to my amazement, I backed the train down the grade and took the locomotive to the shop.

In the Shop

* First thing I did was to remove the heavy spring from the pilot truck.

* Second I removed the tender shell and took out the weight from the back of the tender.

* I oiled all of the tender axles and all the axles on the locomotive.

* I removed the sound unit and took off the bar that holds the speakers and slid the speakers back far enough to insert a small amount of cotton in the bottom of speaker box to soften the chuff and add some base to the whistle.

* Reassembled the tender and prepared for my second attack of the hill.

Test #2 attack on the hill, this time the train went to the top of the hill with out spinning a driver and it now will pull 32 cars up the grade. The detail on this locomotive is amazing and the fidelity to the prototype is wonderful and this locomotive will fit in the scope of my railroad. If you need a UP challenger for your railroad this is a great locomotive.

CV changes

CV 3 changed to 70 (acceleration)

CV4 changed to 30 (deceleration)

CV 2 changed to 15 (start voltage)

Changed Whistle volume to 9 gives whistle more base

Changed break squeal volume to 15

Changed chuff volume to 9 softens the chuff and you can here the high tones and low tones better.

MANTUA

"HO" Three axle tender trucks: Poor pickup, add wipers. "HO" Larger locos with 16X20 mm can motors. Motors are under powered , re-motor.

MDC

MDC Shay (updated 2/29/2000)

In this era of exciting new steam loco releases and subsequent disappointments, the MDC Shay is also a mixed bag.

The detail is ok, the operation is generally smooth, although there is a noticeable roll of the chassis from forward to reverse. The noise or chatter of the gearbox is offensive; we lubed it with no improvement.

You can probably replace the gears with North West Shortline substitutes for about \$20.00 and several hours of labor. The MDC 2 truck Shay is DCC ready with the standard 2x4 NMRA socket. N scale decoders with NMRA plug and short HO scale decoders with the NMRA plug will fit.

RIVAROSSO

Articulated Models, Big Boy, Challenger, Cab Forward and Allegheny (updated 5/2/02)

The "Spring Pin" pickup assemblies that contact the drivers on many of their designs are unreliable, prone to failure and also insufficient. Short circuits cause the springs to burn out and collapse, eliminating contact pressure and therefore pickup. Some short term solutions are:

(A) Use heavier springs that will not burn out, this will also of course increase contact pressure and pickup reliability but will also add more drag to drive mechanics slightly reducing overall pulling power, a worthwhile compromise!

(B) Add pickup to all possible wheels and especially reinstate pickup on all tenders wheels as was the case with the older designs that were significantly more reliable. In the new "Can Motor" designs released about eight years ago, pickup was dropped from all large loco tenders, probably an economy move, thereby reducing overall pickup points and also directing more current to the spring pin assemblies to burn them up. While the Allegheny has tender pickup the loco spring pin assemblies are insufficient and prone to the same problems, the tender is keeping the loco running. Conversely the Big Boys, Challengers and Mallets are a disaster with driver pickup only. Most of these units are failing and being resurrected by those knowledgeable users who know what to do ... add pickup to tender! The chat rooms are full of Rivarossi issues.

December 18, 2001

(C) Rivarossi Allegheny

The long awaited Rivarossi Allegheny 2-6-6-6 has been released. My initial impressions are very favorable; great detail, real smooth running, low starting voltage, excellent low speed control and running stability. The Allegheny negotiated our figure eight, over and under test layout without a hitch. All transitions through our small radius Peco turnouts at all speeds were uneventful.

Although I was enthusiastic when the loco was announced, I had reservations whether or not Rivarossi was going to be able to pull it off! They did!

Several years ago Rivarossi modernized their designs by adding can motors, flywheels and new diesel type gear boxes to all their popular articulated locos. These improvements were fine but they also reduced the amount of pickup wheels and changed the pickup mechanisms, which in my opinion proved disastrous and resulted in our dropping the line due to performance and quality control issues.

The main culprit is the spring pin pickup assembly that contacts the inner driver rim and the fact that not every driver had this assy. The modern Rivarossi Challenger for example, only has two drivers on opposite rails for pickup. The older, non can motor models, also had pickup in the tender. Furthermore, these spring pin assemblies would fail as a result of short circuits that essentially melted the internal springs.

So, when I opened the Allegheny box, the first thing I looked for were these Spring Pin assemblies and the next thing was for additional pickups. Yes the Allegheny still had these spring pin assemblies, but the good news is that all the tender axles, 7 in all, had pickup on both rails. In addition the front and rear loco trucks also have pickup. The multitude of pickup points should insure reliable operation even if the spring pins fail.

The Allegheny is DCC ready and the NMRA socket is in the boiler area, almost any decoder with the NMRA plug will fit.

The loco was designed to run on Code 70 track but will not run through Micro Engineering Code 70 Turnouts.

If you are considering Soundtraxx install a DSX and Speaker in tender and decoder in NMRA socket in Loco.

Rivarossi Allegheny 2-6-6-6 info here (updated 12/18/2001).

"HO" New Pacific and Mikados: Gear box assemblies screws overtightened when assembled at factory causing gear box flanges to crack on some units witch then causes rough running.

"HO" FEF'S: Insufficient pickup and mechanical problems cause poor running.

"HO" Mallets: Some units were assembled with main drivers not within NMRA wheel gauge tolerances. (Flange width is narrower than spec) . This causes derailment on some turnouts.

"HO" Heislars: Insufficient pickup, only two wheels on one side . Wiper addition solves problem.

TRIX

TRIX Steam Loco (updated 1/18/2005)

To activate the steam sound you need to press function #1.