

Bearden Review: GP15-1

There's been a good deal of discussion about this locomotive. Here's my 2 cents.

Starts on the next post. I'll give a review and also be posting a suggestion or two for improvement.

Well, I got my GP15-1.

Bottom line- I'm absolutely astounded. What a great locomotive.

I think this a smashingly great product for Atlas.



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Price

When I look at this locomotive and think about the price, a couple of things come to my mind.

1. I know \$70 list price is not “cheap.” But that figure needs some perspective.
2. The newest top of the line Atlas locos are going to list for \$110 and Kato is selling their newest for the same price. The Atlas CW40-8 with all the special lighting effects will be listing at \$140.
3. For crying out loud, brass diesels are now listing for \$700 (are we in an alternate reality?).
4. When last released, the list price of the Life Like GP18 was \$90 and the GP20 was \$97. And I submit the GP15-1 is as good as these locomotives—even though it is “Trainman.”
5. My first high quality locomotive purchase was in 1987 when I bought an Atlas/Kato RS-3 painted for SCL and I paid \$39 (which was probably a somewhat high hobby shop “close to list price” price). That was twenty years ago!!! Do you get that???? Twenty years ago!

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Internet supply houses are selling the GP15-1 at prices around \$47 - \$50. So as I hold this Trainman quality locomotive in my hand, I'm pausing as I realize that this loco's discounted cost is only 10 bucks more than I paid for an RS-3 20 years ago! And that's not even counting the ten extra bucks I spent for the Micro-Trains pilots for the RS-3. And that also doesn't count inflation. If I took that into account, the GP15-1 would probably be cheaper.

And the GP15-1 is such a superior locomotive!

OK, enough about price. This Trainman locomotive is about \$40 LESS than the top of the line Kato and Atlas locomotive. So what kind of locomotive do you get for that \$40 price reduction?

Box

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The locomotive comes in the same crystal box that shorter locomotives come in. There's a new label for the Trainman brand. Looks good. One thing that's different is a return to the plastic form-fitted inserts instead of the nice brown foam padded inserts. I guess these parts are called the "nest". I like the foam better (even though some people complain about not being able to get their locos out of it!). But the plastic nest fits the GP15-1 well.

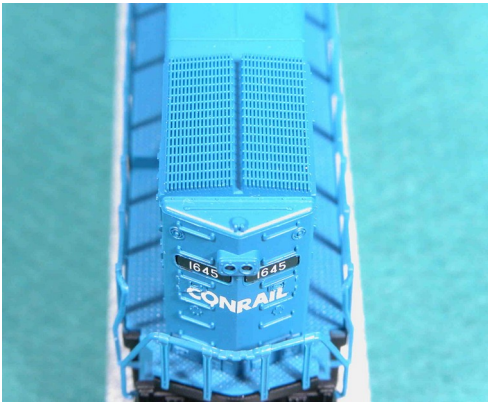
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The Shell

Out of the box, the shell looks typical Atlas quality---excellent. I especially like the radiator grills on the roof.

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The handrails are very nice and I really like the anticlimber. VERY nicely done Atlas. The anticlimber looks seamless.

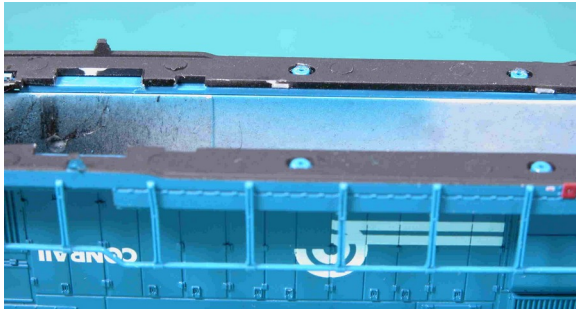
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There's nothing radical about the shell, but the walkway is a bit different. This locomotive returns to old technology by making the sidesill and the handrails/walkway separate pieces. Atlas saved lots of assembly money by doing this.

However, there was a problem for Atlas in this locomotive (as compared to others like an ALCo). The sidesill is VERY thin! Well, this locomotive employs a new technology that I have not seen before (if it is present on something else, then I missed it).

The underside of the Delryn walkway has guide pins which slip into the sidesill. The walkway is then glued to the walkway with a kind of gooey rubber cement glue. This is designed, no doubt, to hold the pieces together and make the thin sidesill stronger.



So in this next photo below, with the shell up-side-down, notice that the black layer is the styrene walkway. The next blue layer (with the pins) is the Delryn walkway, and then you can see the body shell after that.

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The shell comes with Atlas Accumate couplers held in place with screws.

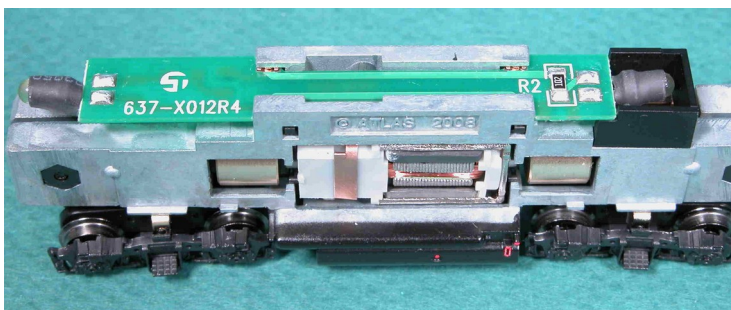


My shell was painted for Conrail. The printing looked great.

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Mechanism

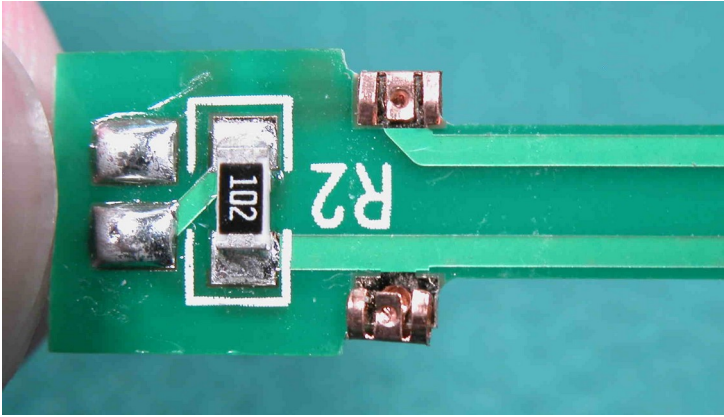
Atlas saved some money in a couple of ways with the mechanism.



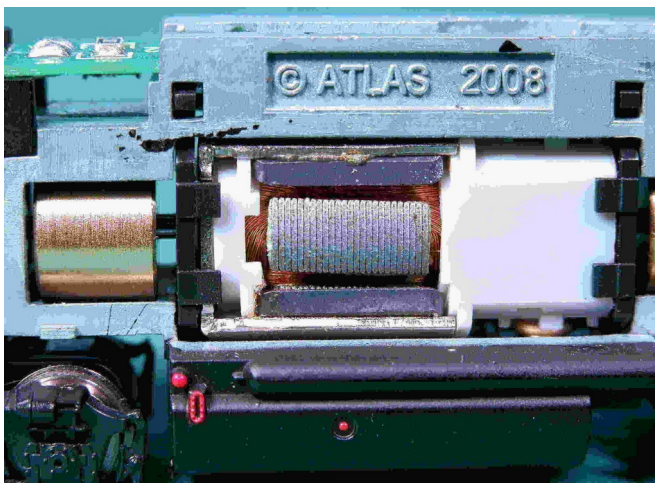
First, the light board is a cheaper quality than their regular board (well sort of---I'll come back to that in a second). It just has a diode, a resistor, and an LED at each end. There's no capacitor soldered across the LED leads to stop flickering of the LED that is turned off. That is pretty minor to me since a) I have TONS of light boards that I have pulled out of other locos and b) I'll be converting this GP15-1 to DCC eventually.

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But wait, when you pull this “cheaper” board, you are in for a BIG shock. Atlas has made an improvement (once again, if Atlas introduced this on another locomotive, I missed it). One of the weak spots in any locomotive is electrical contact. This is true where the board meets the frame. Well, Atlas has inserted tiny little “grabbers” with finger extensions on each electrical pad of the circuit board. This ensures much more reliable contact. I was amazed that this would be present in a cost-cutting Trainman product.



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The next thing I notice about the mechanism is that there is no plastic fuel tank. The fuel tank is just part of the metal frame halves and is painted. The tanks look good and the extra weight is GOOD for this locomotive.

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The GP15-1 does indeed have a gray motor in it. Normally, I would have said this was a sign of a Scalespeed motor. However, first reports of the GP15-

1 were that the loco ran fast.

I compared the GP15-1 to a GP30 made by Kato for Atlas. They ran almost identically (and would MU well). The GP15-1 also ran about the same speed as a Kato SD40. The Kato locomotives do NOT have a Scalespeed motor, so I must conclude the GP15-1 must not have a ScaleSpeed motor in it.

After further inspection, I noticed that the poles on the motor are a bit different than on a Scalespeed motor. The pole metal is ever so slightly smaller and the skew of the pole is much smaller. Furthermore, Atlas does not list a Scalespeed motor on the feature-set for this locomotive. Therefore, I conclude (for all the reasons) with certainty that this locomotive does not have the Scalespeed motor. In fact, I got out an old Atlas/Kato RS-1 with a Kato GM-5 motor in it, and the motor in the GP15-1 looks like it is designed practically identical to the Kato GM-5 motor except for the gray housing.

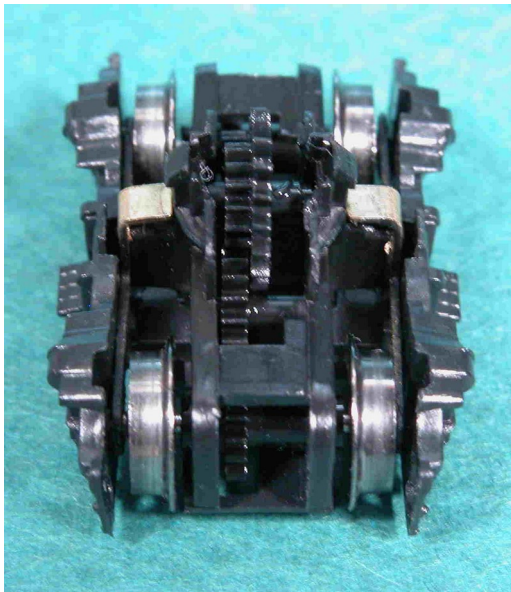
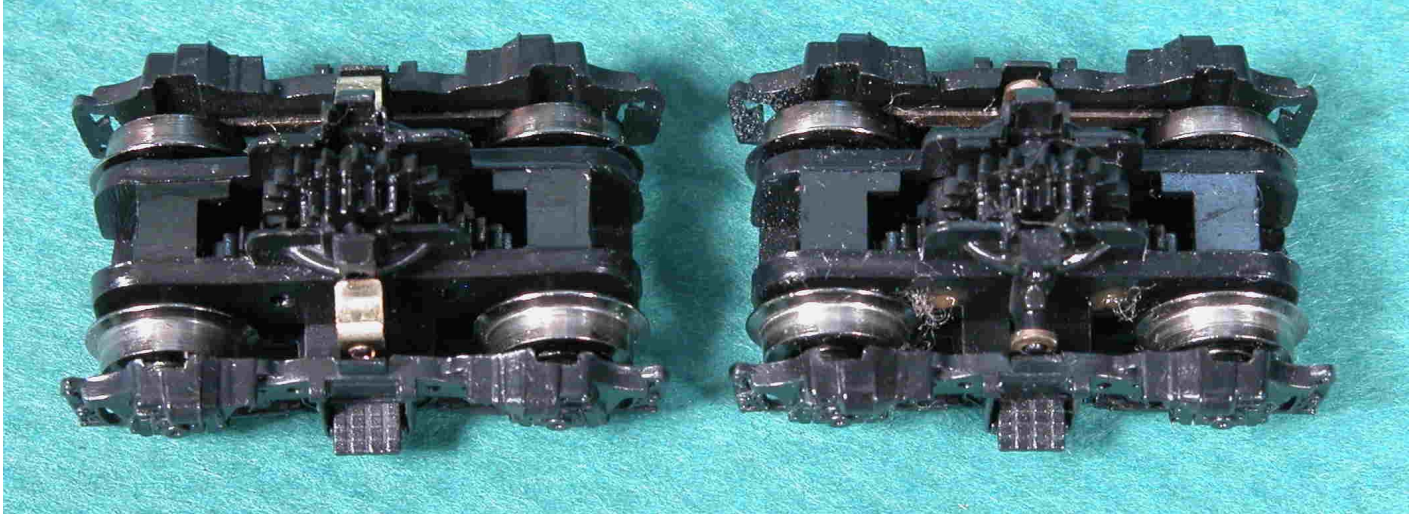
So even though the GP15-1 motor is not a Scalespeed motor, it's still a fantastic motor, but this explains the reason some people observe the GP15-1 runs a bit fast. If you run DCC like I do, this will be a non-issue. You just program a lower top speed. If you run analog (non-DCC) then you might find that the GP15-1 will not MU well with your Scalespeed Atlas locomotives. However, the flip side, as I have noted, is that the GP15-1 should MU fairly well with some faster Kato and older Atlas locomotives.



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Trucks

The EMD blomberg trucks have different brass (phosphor/bronze) axle pick-ups. The only real difference is that the tab that sticks up is taller and then folded inward. This creates a pad for electrical conductivity with the frame.



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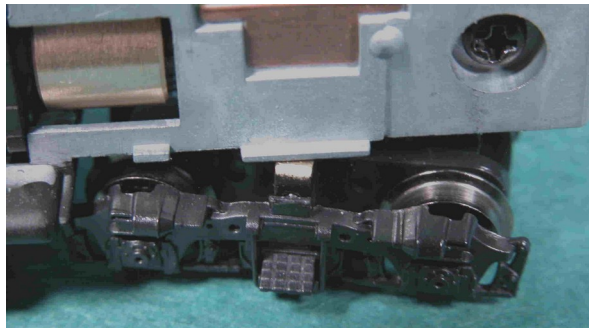
That leads to the next difference in the Trainman.....

Frame

Atlas saved several bucks on this model with the frames.

First, as mentioned above, there is no plastic fuel tank casting. The fuel tank is cast into the frame-- and looks great (see photo above). The metal fuel tank is painted- so you will not want to chip the paint. My Conrail GP15-1 had nice red touches for the filler cap and fuel gauges.

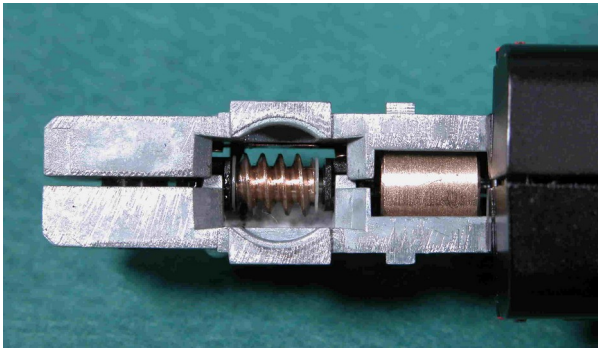
The second money saving difference is the lack of phosphor/bronze contact springs running down the sides of the frame and touching the tops of the trucks.



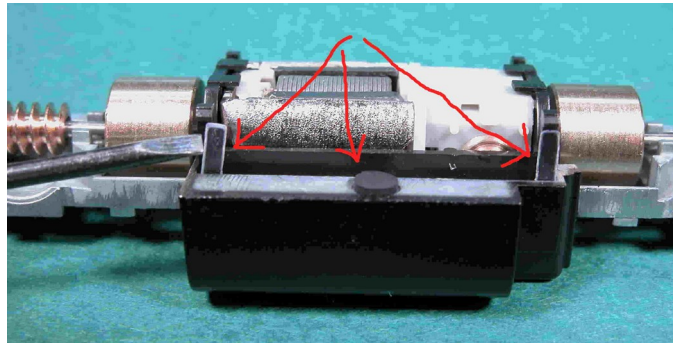
Instead, the trucks interface with the frames directly.

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When I removed a truck, you can see the pads on the frame for the truck pads. The frame pads were a bit rough. I planned to burnish mine for smoother performance later on.



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When I pulled the frame apart, there was another surprise awaiting me. The GP15-1 has three insulating spacers installed---so be careful not to lose them. The first is a round spacer between fuel tank halves. The other two are thin clear pieces that go under the motor saddle.

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Subjective performance

Before I made any modifications to this locomotive at all, I wanted to get some impressions of it's stock performance. I was VERY impressed. To be honest, once the loco had a break-in period, I could honestly see very little difference between this locomotive and a Kato GP35.

In summation, this is a fantastic locomotive. I really like it- especially at the price point.

As a CSX fan, I'm really hoping the Mark IV follows through with potential plans for a GP15T replacement shell.

Well, I'll be posting some more a bit later as I tweak my GP15-1.

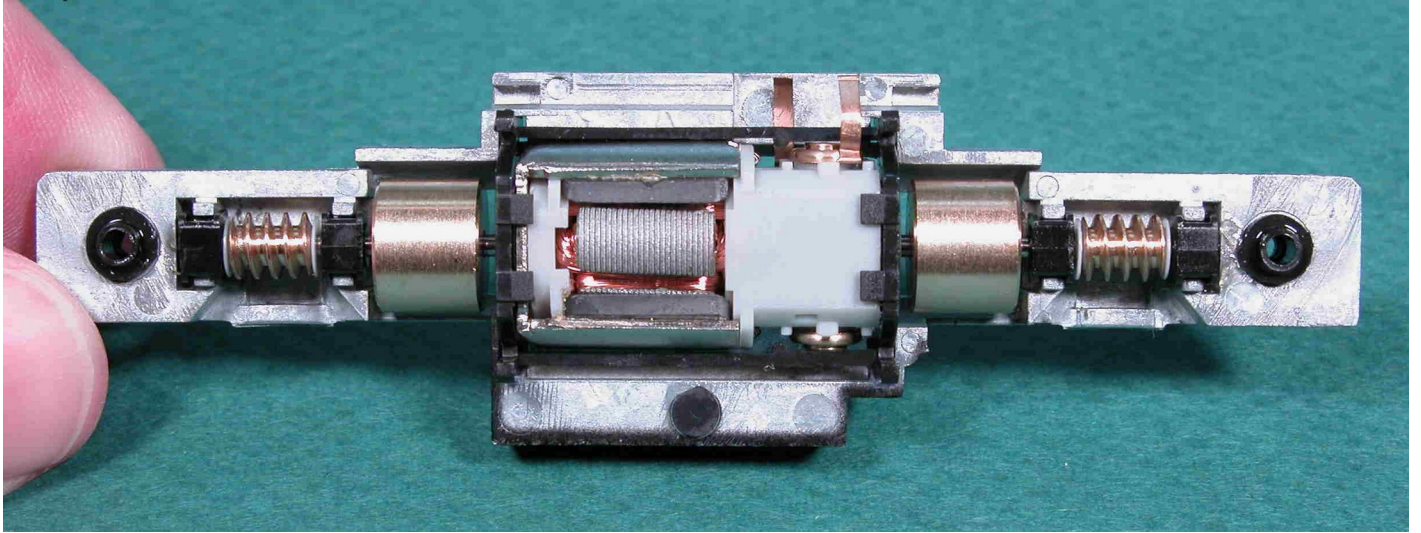
But this concludes my initial review.

Improvement

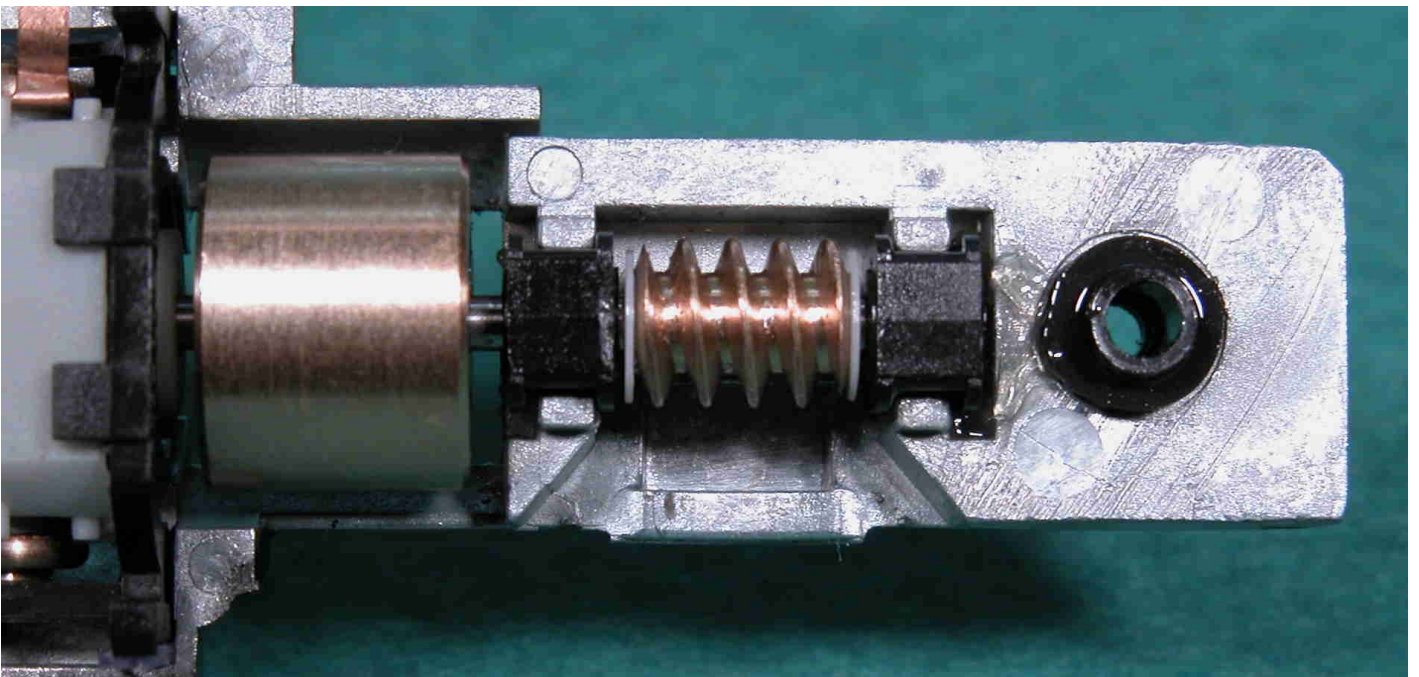
Ok, the next step is to make an improvement.

Since this is a short 4-axle locomotive, it's time for the Bearden Inner Bearing Block Removal.

Here is the stock drive train.



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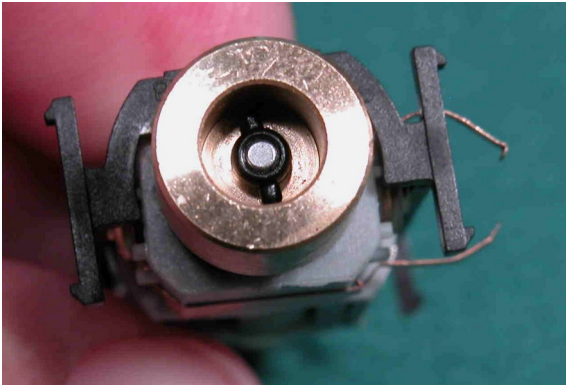
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Gone is the hex nut. This locomotive uses the old slot and saturn/blade interface.

Here is the slotted u-joint.

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The GP15-1 motor interface is the same as the one that InterMountain uses.

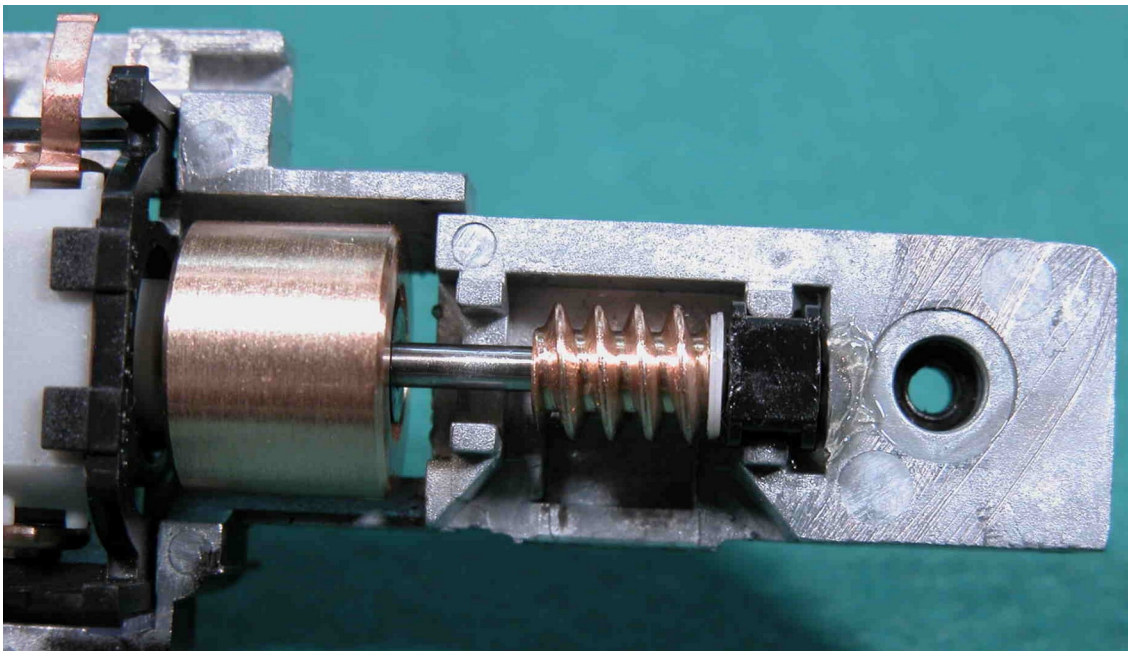
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OK, enough sightseeing. I removed the inner bearing block as per the article I wrote.

Here is the article if you need it.

<http://u18b.com/wp-content/uploads/2019/10/Bearingblock09.pdf>

Here is the final product. I put the extra thrust washer on the outboard end, but I may remove it later.



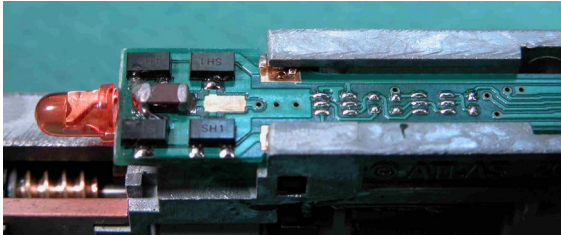
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As always, it runs like a champ. Friction is reduced.

Next project will be decoder installation.

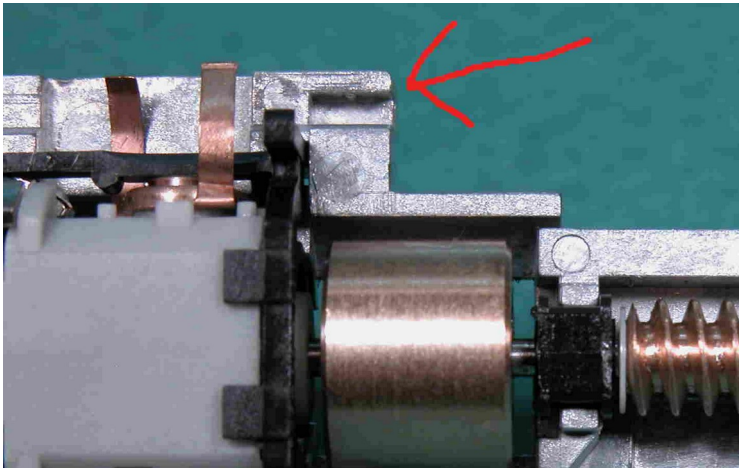
Decoder Installation.

I like TCS decoders. Since this is a short locomotive, the decoder required is the ASD-4.



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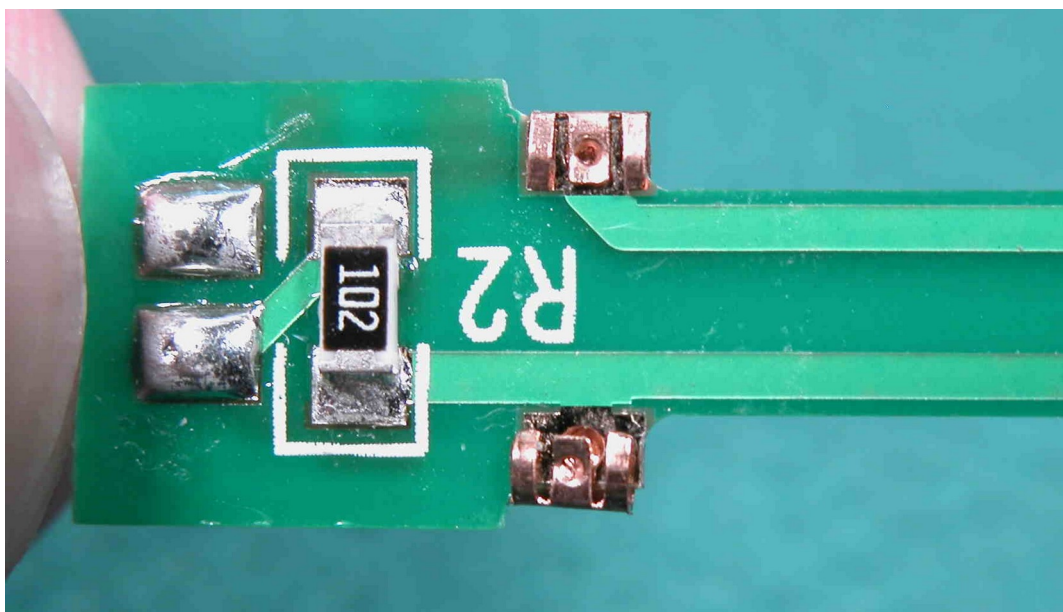
I think I should warn you that the GP15-1 decoder installation was a bit more difficult than average.



First, I discovered that Atlas eliminated the hooks in the circuit board holders in the frame.

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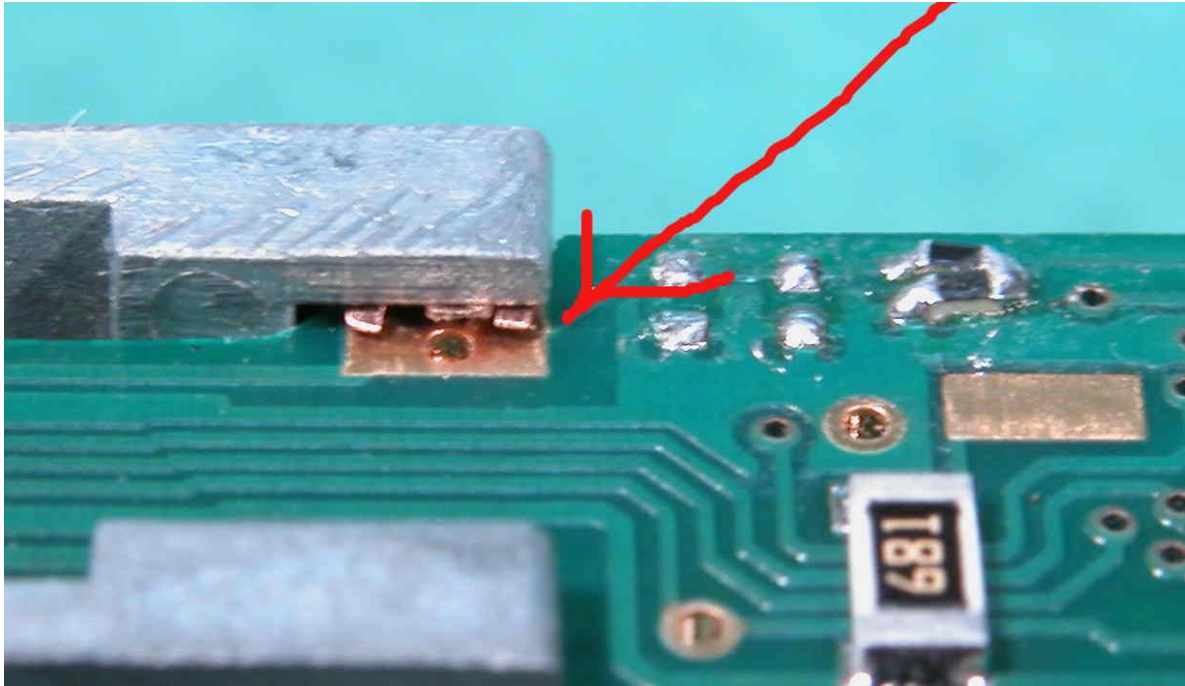
The end result of this is that the decoder board is loose. It does NOT fit.



Hmmmmm. I had two options. Either add a whole bunch of solder to the decoder pads and force the board into place....

Or I could use the stock clip grabber things I talked about above. Remember?

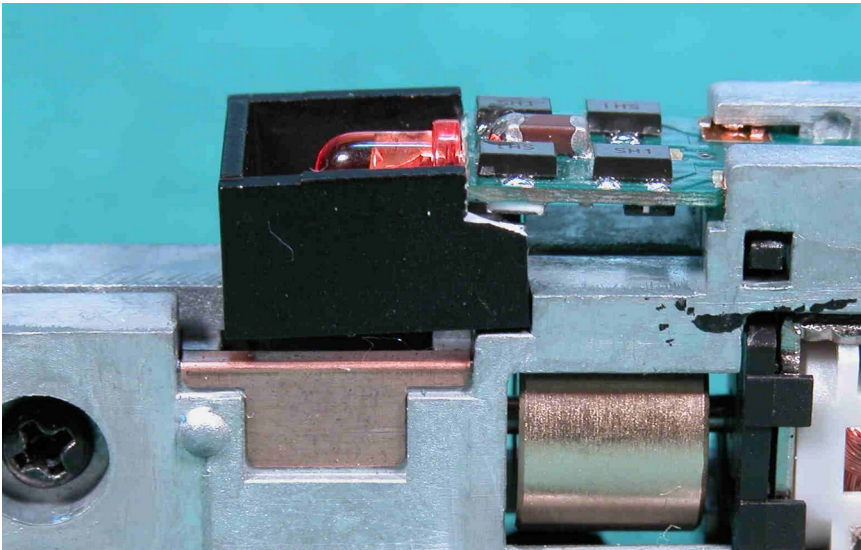
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I decided on the latter. I removed the little clip-grabber things and installed them onto the TCS decoder. Since the holes in the pad did not match up with the Atlas board placement, the clips did not snap into place, but I hoped it would be good enough.

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Now, I must admit that getting the whole locomotive assembled again was a bit tricky. I had the decoder board with 4 clip-grabbers (one moved out of place), I had the clear thin insulated spacers under the motor saddle (they wanted to move and fall out), etc.



But I finally got it all together. Now, because the TCS circuit board has electronic components that are soldered to the board and thus make it fatter, I had to trim the light shield a bit so it would fit under the decoder.

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That was it. Decoder installed.

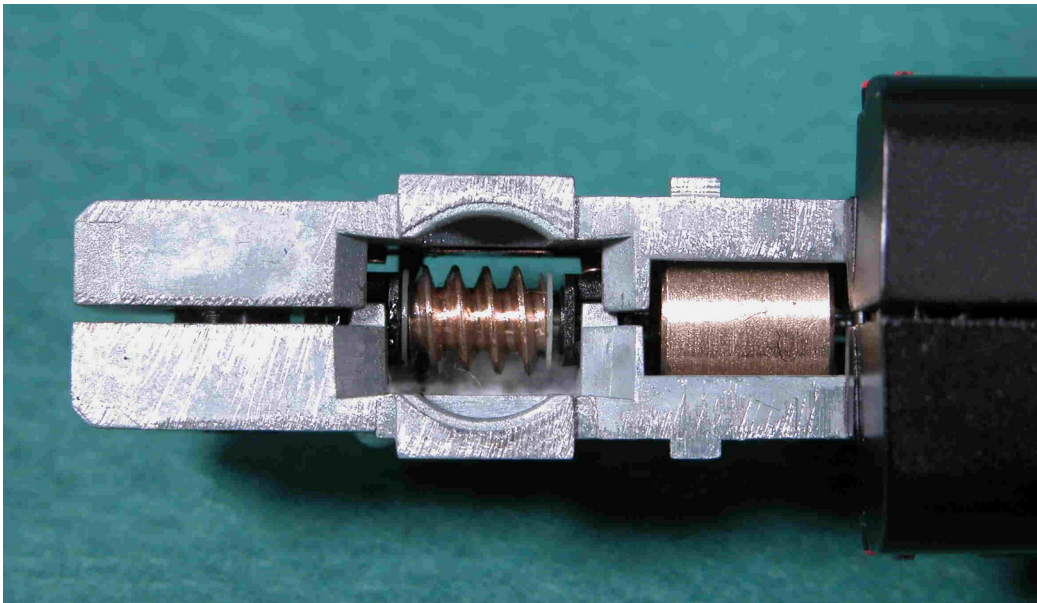
Improvement: Burnishing

Here's an old trick that dates back to the old days of the Atlas/Kato RS-3 and related mechanisms as a way of improving electrical conductivity in certain mechanisms.

If you looked at metal under a microscope, it would look like a mountain range with lots of peaks and valleys. Electrical contact is only being made by two surfaces on the peaks. But what if you could smooth down the mountains into flat plains? Well, then you would have a much greater surface area of electrical contact (theoretically).

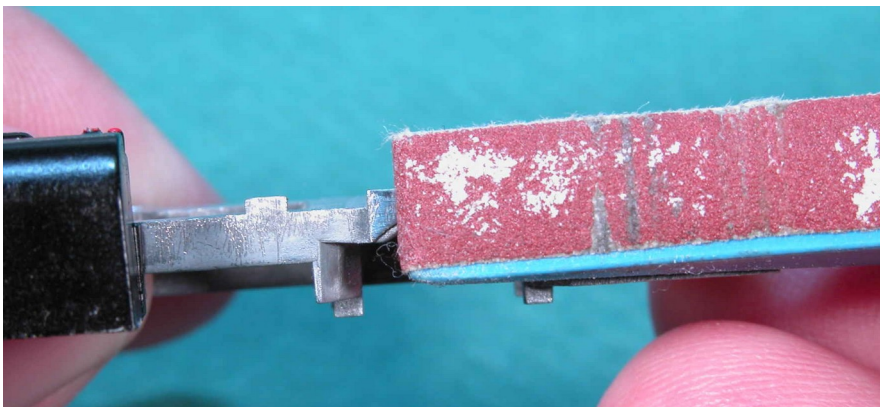
Well, in metallurgy, that process is called burnishing the metal. And that's what you can do to the GP15-1.

In my initial review, I indicated that my GP15-1 ran well. In fact, I detected no flickering of the LED in the headlight at all (a sign that good electrical contact was being made). However, I want to tweak my locomotives if I can- and this is an area where a tweak can be done.



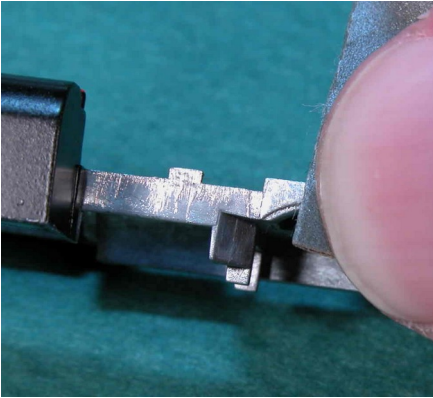
I'm going to burnish the pads on the bottom of the chassis frames. I noted earlier in the thread that the stock pads were a tiny bit rough.

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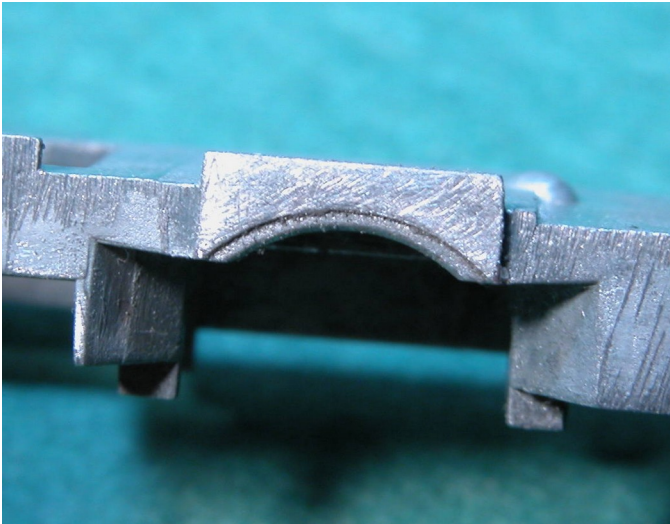
Well, the first step is to GENTLY sand the a pad across the grain with fine sandpaper. I use "sanding wands" for this purpose. Micro Mark sells them, and I've seen them at various hobby stores. It's a sandpaper band on a spring loaded stick.

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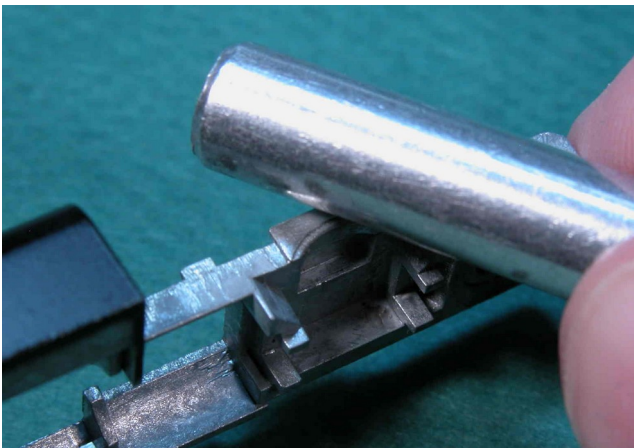
Then, go back with wet/dry 400 or 600 grit paper and sand in circles VERY LIGHTLY.

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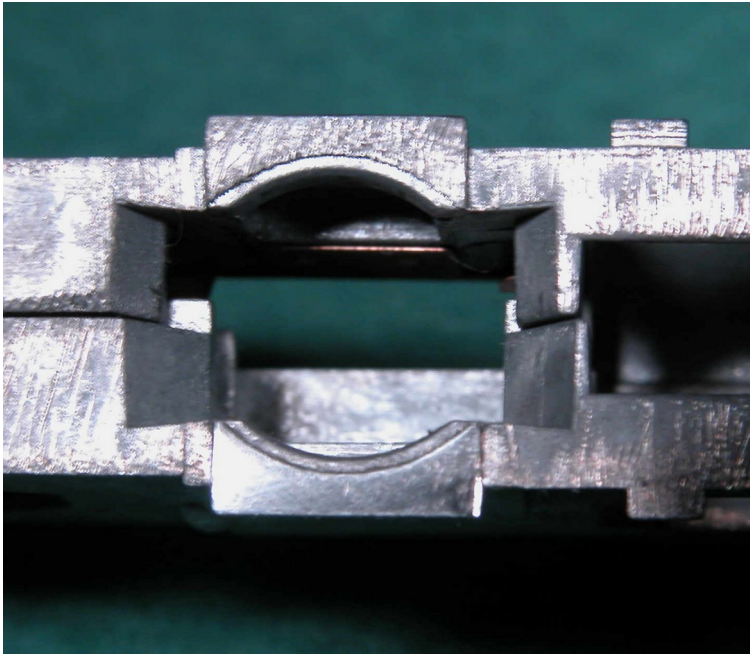
When this is done, the area should look cloudy (and very hard to capture in a photograph).

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You may then use an official burnishing tool. But I just use a round smooth tool. In my case, I use the handle to my Xacto knife. I keep the handle perpendicular to the surface of the metal pad. I then press down and go back and forth. I go all the way across, trying not to stop in the middle---since what I DON'T want to do is create a depression in the metal pad. When done properly, the pad becomes mirror smooth when burnished.

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Here's a before and after shot. It's a little blurry, but I think you can tell the difference. The burnished side looks like a mirror (bottom). Now I'm ready to do the other three pads.

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Tweak: Phosphor Bronze pickup

One of the primary ways that Atlas saved money on this GP15-1 Trainman product was in the truck electrical pickups. By dropping the long brass/phosphor bronze pickup strips along the chassis side, Atlas saved construction costs and a bit in parts.

It is this point that also brought some initial criticism by some. They saw this as a HUGE step backward for Atlas.

They argued that phosphor bronze truck pickups rubbing on zinc/antimony (2 different metals) will be less efficient over time and cause pitting and problems etc, etc etc. "I'm canceling my order", they said.

This is such a waste. The GP15-1 is such an awesome locomotive, as I've tried to show in this thread.

Well, let's just assume for a moment that the potential long-term difficulties with the trucks are true. This potential problem (notice I said potential!) is such an EASY thing to tweak.

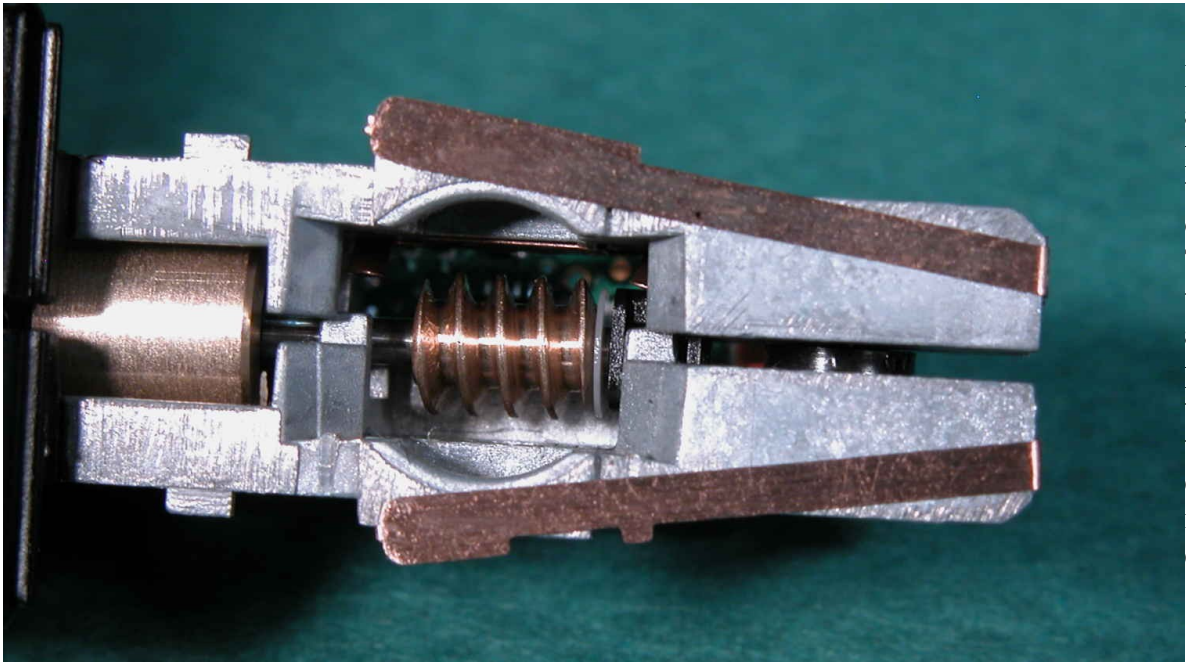
If you have heartburn over this, why not just add your own phosphor bronze pickups? Or, if you just want to tweak your GP15-1 to the next level (like I do), this is such an easy tweak. I've done this on other locomotives---for example I added these pickups to my early Kato F3A.

Here's how I did it. The space between the trucks and the frame is pretty tight, so we need a pickup that's thin. Pickups for a GP38/40 are too fat.



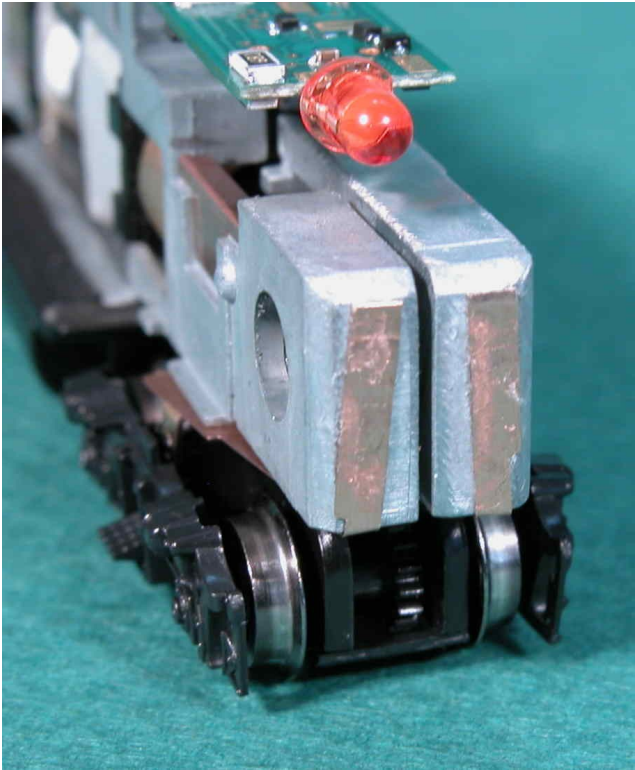
Well I had some extra pickups in my parts box for a VO-1000. They are thinner than average.

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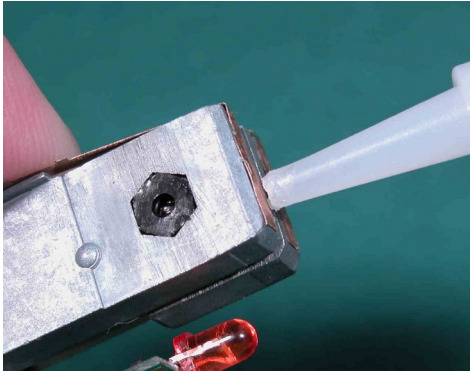
I cut one in half and then use my pliers to flatten the bent portions out. The pickup is then laid out so as to lay over the pad at the gear tower and run up to the chassis end. I then bend it over the chassis end.

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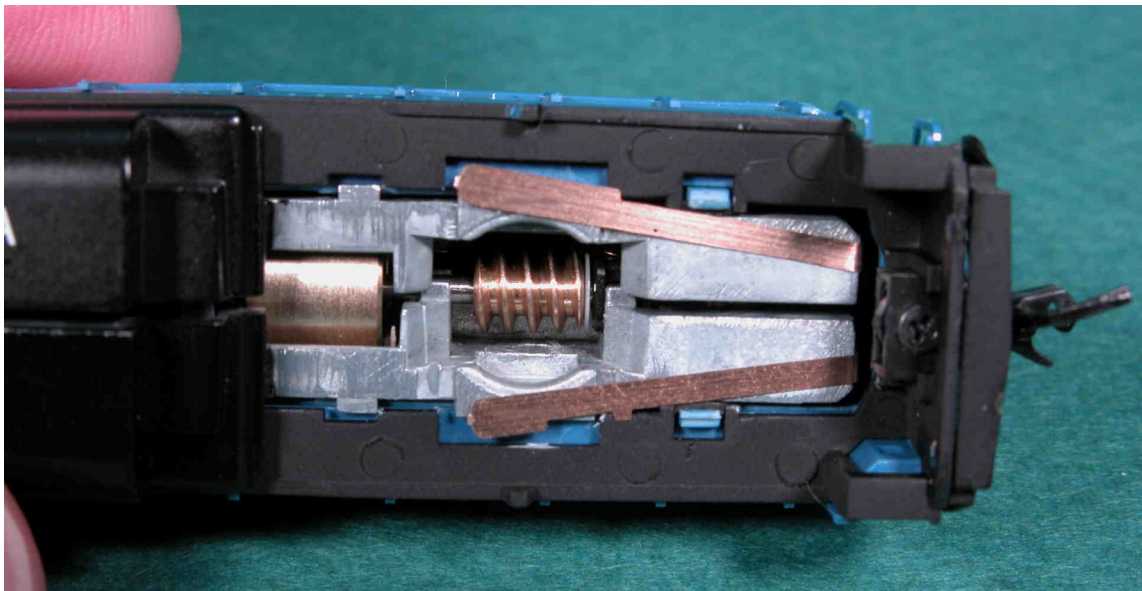
If the length sticks up too high, then I trim it.

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When I feel good about the position, I superglue the pickup only on the end.

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Here's what it looks like with the truck off. The phosphor bronze truck pickups will rub on the strips I have just now installed. The weight of the locomotive cause the strip to press onto the frame for electrical contact upward. No screws needed.

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Here is the new pickups installed. They are so flat that you can't even see them from the side.

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The only slight adjustment required is that the truck might fit a little tightly. I took one tight truck and ever so slightly bent the phosphor pad downward just a tiny bit.

Finished! Locomotive runs like a champ!

Now the great part about this is that Atlas has saved some money and made me a Trainman locomotive that costs me about \$40 less than their top of the line locomotive.

But for only a few pennies plus shipping and a little time, I can tweak the locomotive and add back some of the features that Atlas left off---bringing the GP15-1 off of the Trainman level!

How cool is that!