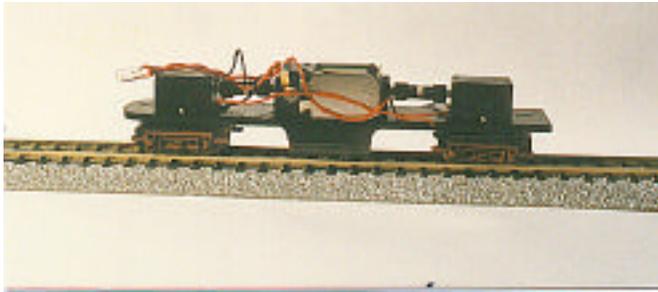


# GENERIC CHASSIS

By: MARK FULLER

I had been running some chassis ideas through my head when John put out the call for someone to look at the FA-2 chassis closer. I just happen to have an old FA-2 (my second N-scale loco from my childhood, about 25 years old). While completely disassembling the truck, I came across a fantastic discovery.



MODIFIED CHASSIS

## TRUCK DESIGN

The truck is composed of 6 gears: 1 on each axle, 2 idler gears, the driving gear, and the reduction gear, which is driven by the worm. Refer to Figure 1 for gear labeling. In Figure 1, holes #1 and #6 carry the axle gears. Holes #2 and #3 are the idlers that drive axle gear #1. Hole #4 houses the reduction gear and holding pin. Hole #5 is the driving gear that drives axle gear #6 and idler #3. Got that? The axle gears (#1 and #6) and the idler gears (#2 and #3) are the same size with the same number of teeth.

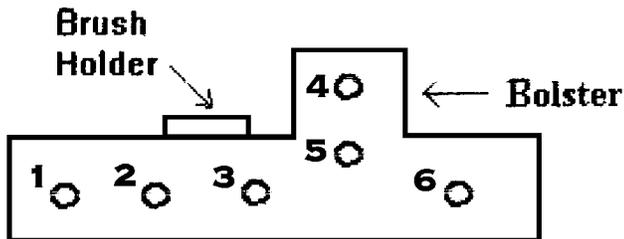


Figure 1

The pickup brushes slide into the truck chassis halves. The two halves of the truck chassis are held together by the truck sideframes. The truck is held onto the loco chassis with a pin, which also holds the reduction gear. Our task is to move axle gear #1 into idler gear #3's place to create a 4 gear truck that is close in size to a traction truck, from 10 feet on center to about 5 feet!

## LOCOS THAT WILL WORK

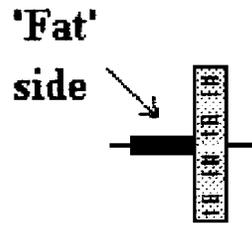
Not all locos are created the same! My old FA-2 uses a truck design that is still used by Model Power today, but not by LifeLike. Old technology is cheap (and in our case, desired). LifeLike's BL-2 and GP18 also will not work (or anything with the new low friction truck design) What will work is LifeLike's F-7, F40PH, GP38, and Model Power's F40PH. Be sure to check your loco before moving on.

## MODIFYING THE TRUCK

To remove the truck from the chassis, first push the pin with a very small screwdriver. Finish removing the pin with a pair of needlenose pliers. Gently lower the truck and set aside the reduction gear. Lift the sideframe up off the truck chassis. Remove both wheels from axle gear #1 by gently prying it with a flathead screwdriver. Next, gently pry the wheel brushes towards you off of the side of the truck. They should be color coded, but if they aren't, be sure to mark them left and right. With the pickup brushes removed, you should be able to set the loco chassis aside.



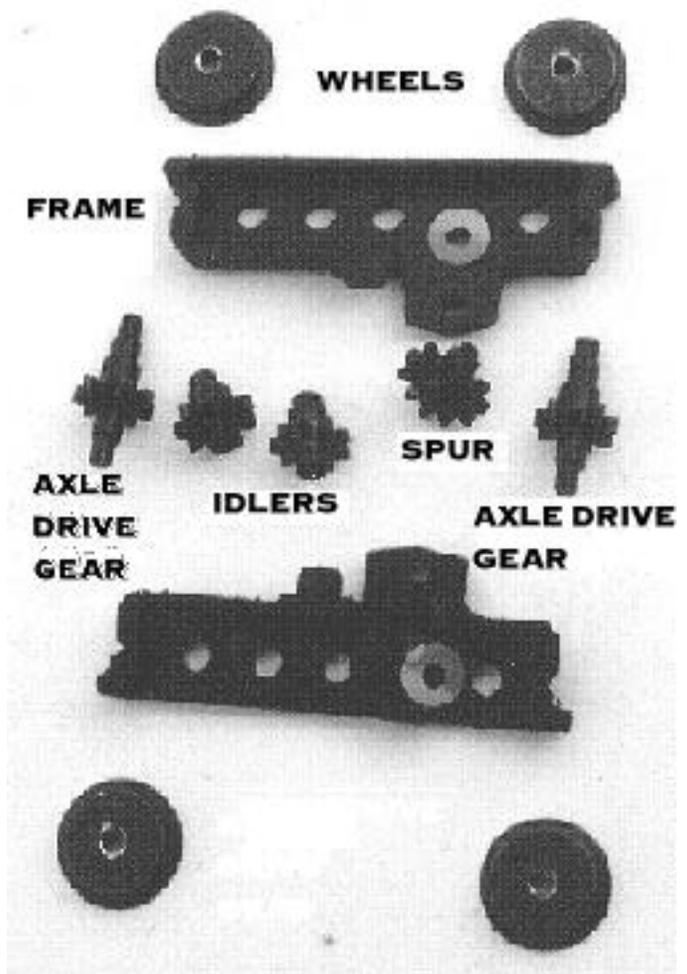
Remove one wheel from axle gear #6. Separate the truck chassis. Remove idler gears #2 and #3 and put away into your parts box. Move axle gear #1 into hole #3 (Note: the gears are off-centered and have a 'fat' part next to the gear, as in Figure 2.



Make sure all the 'fat' parts are on the same side as they were before!). Put the chassis halves back together. At this point you should have the axles on a five-foot center and two empty holes. We want to cut those two holes off.

Figure 2

Remove the last wheel from axle gear #6. Using a knife or a saw, mark a line where you will cut to remove the excess truck chassis. **WARNING!** First, you should remove all gears before making the actual cut. Second, you should cut right up to the end of hole #2 so as not to get too close to hole #3 and the pickup brush holder!!



With the cut made, reinsert the two axle gears and the driving gear into one half and put the two truck halves back together, remembering that the gears are off centered (Figure 3). The driving gear should have two tiny plastic washers, so be careful. Put wheels back on to both sides of axle gear #6. This will temporarily hold the two halves together. Slide the pickup brushes back onto their respective sides.

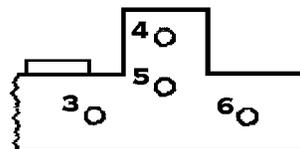
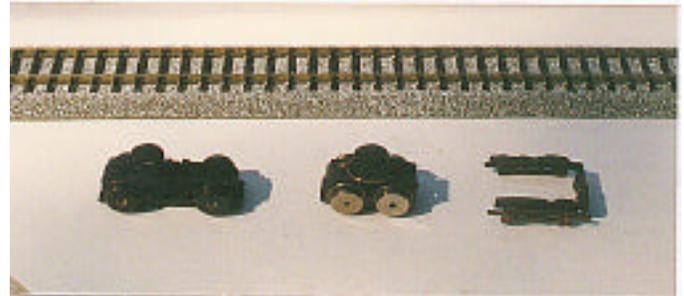


Figure 3

The brushes are now too long and will need to be modified. First, fold the side that will be against wheel #3 out a bit so that it will make good contact. Put the wheels onto axle gear #3 and check with a wheel gauge. Now cut the excess brush off with a good pair of side cutters. (Note: you may want to leave one side of the brushes off if you intend to wire strictly for overhead operation). Put the reduction gear back in (it will only go in one way due to the 'fat' part of the other gears, remember?). Put the truck back into the loco frame and reinsert the pin. Repeat for the other side if your loco has two powered trucks. For locos with only one powered truck, the other truck should have a center hole. Move the back wheel axle to the center and remove the excess (be sure not to cut the side that has the screw used to attach to the loco chassis!).



COMPLETED TRUCK

## SIDE FRAMES

We now have a basic chassis with 5 foot center trucks. Next we need some detail. You may have noticed by now that the truck halves are not held together too tightly. This is because the outer frame detail also 'locks' the two halves together. This leaves us in a quandary. We need to cut the truck detail frame down to size and still lock the halves. I'll tell you what I did and theorize on another possibility.

Remove the coupler (if present) by either cutting or sawing. Remove the detail by rubbing it against sandpaper placed on a flat surface. Cut the side frames in half from the detail side, leaving a front and rear. Next, get your favorite truck detail, or whatever you have on hand. I used the frames from my Bachmann trolley. Make sure the back side of the frame detail is flat, but rough. For the Bachmann, I had to remove the back pin used to insert into the Bachmann truck. Glue the frame detail to both sides of one of the frame halves. You may use ACC, but that won't hold forever (epoxy may be better here, but I haven't tried it yet). Do the same to the other frame half. I painted everything flat black, and came back with a rusty brown to highlight the details. Set those aside to dry.

Take one of the new, modified trucks (at this point, removed from the chassis) and tie a small piece of .010" PB wire around the outside of the truck bolster (the part that goes into the chassis) just once, and give it two twists. Not too tight, but tight enough to make the bottom of the truck halves separate a hair. Cut the excess wire. **WARNING!** If you are picking up power off of the track, make sure the PB wire does not make contact with the pickup brushes!!

Next, take one of the new truck details and snap it onto the truck on the uncut side. This should stay in place pretty well without glue. If you feel daring, you can skip the wire part and glue the frame onto the truck, but you have to be **VERY** careful not to get any glue onto the gears. Also, as I mentioned before, ACC will not hold very long. It just does not seem to work on this kind of plastic. Another (scary) possibility is to melt the halves together with a quick touch of a hot soldering iron, much like is done with a MicroTrains #1015 coupler. I have not dared either of the latter two, but hope to try it in the near future.

## RUNNING IT

Put it on the track and let it run! You will need to put some weight back over the trucks. LifeLike supplies plenty of lead, but Model Power skimps here. The LifeLike's motor gets **EXTREMELY** hot under normal running conditions. I'm afraid the metal fuel tank will be necessary as a heat sink. It may be worthwhile going with the cheaper Model Power and replacing the motor.

Now that you have a running generic chassis, here are some (untried) ideas. The chassis on the LifeLike GP-38 is narrower than the F-7 or the F40PH, leaving more room to experiment on shells. Being plastic, the chassis may be shortened or lengthened. Steeple cab, anyone? How about Jim Brewer's trolley?

## IDEA FILE

Another design I worked on was to leave holes #1 and #2 in place, put axle gear #6 in hole #3, and remove hole #6. You will need to leave idler gear #2 in place for this one. This will bring the trucks closer together towards the center. I hope to use this design on an Illinois Terminal Class 'C' loco.

## FEEDBACK

If you decide to try this, please let Corky know about your results. I hope you do. I think this one is a winner!