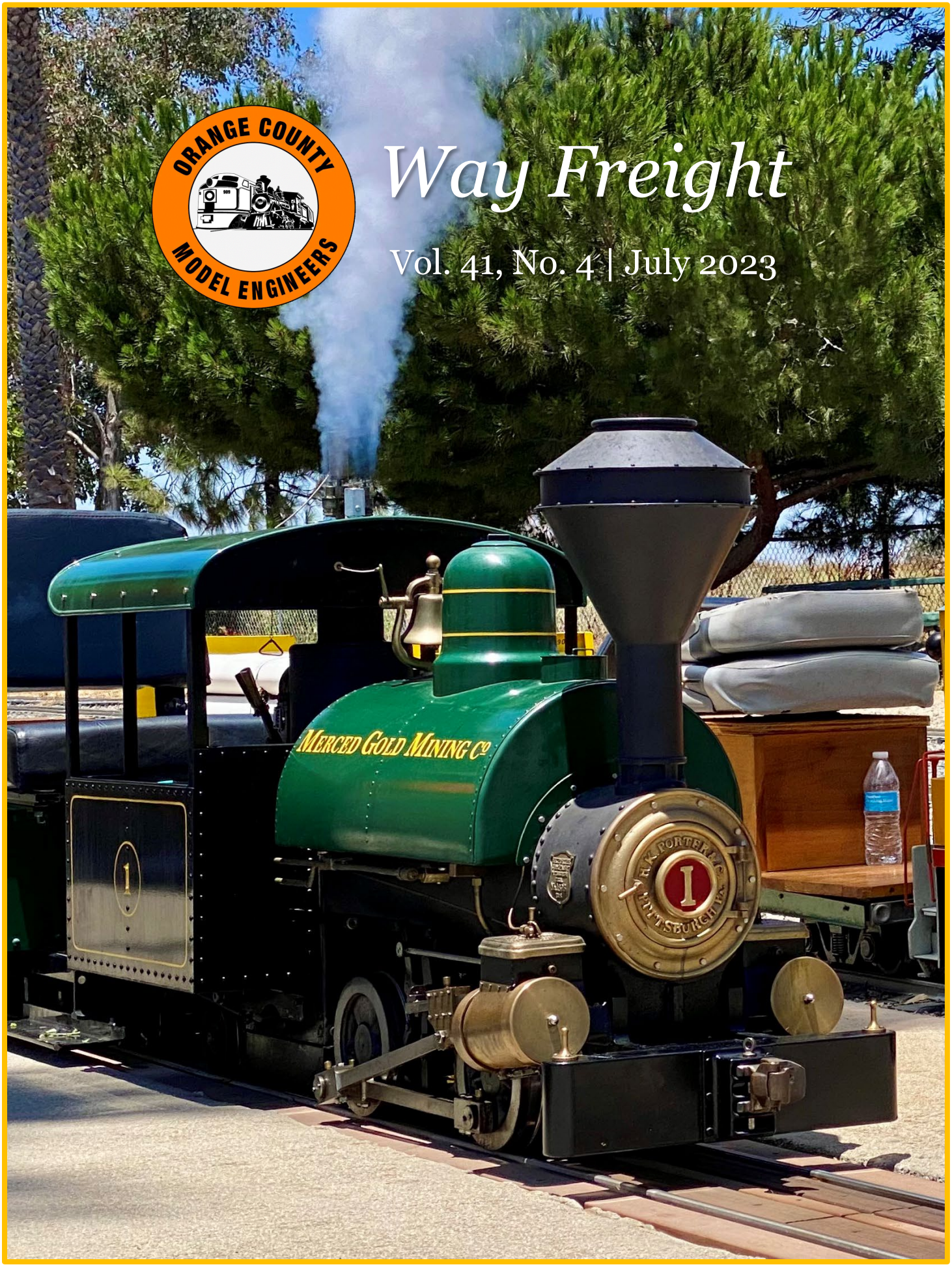

Way Freight

Vol. 41, No. 4 | July 2023

Table of Contents

DATES TO REMEMBER!

August 19th-20th

Public Run Weekend

September 9th

Work Day, Members' Meeting, Board Meeting

September 16th-17th

Public Run Weekend

September 22nd-24th

Fall Meet

2023 O.C.M.E. Board of Directors

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Our railroad is located in Fairview Park, 2480 Placentia Avenue, Costa Mesa, CA.
If you have any for sale items please send the info to ocmenews@gmail.com
THE WAY FREIGHT is published by **ORANGE COUNTY MODEL ENGINEERS, INC. (OCME),** a non-profit California Corporation which has created **THE MACKEREL FLATS & GOAT HILL JCT. RAILROAD** in Fairview Park, Costa Mesa, California. It is the intent of OCME to educate and enlighten people of all ages in the rich railroad heritage of the United States of America and other parts of the world. As a qualified non-profit organization, all donations are fully tax deductible under IRS ruling 501 (C) (3).
Views and opinions expressed in **THE WAY FREIGHT** are not necessarily those of **OCME**.

Happenings at Goathill

The first weekend of July was a holiday weekend, this meant that the official work day was scheduled for the second weekend of the month. However, this didn't stop an intrepid group led by Jeff Garrett and Andy Romer from doing some much needed clean up work around the machine shop and open shed. They moved the large lathe and mill which were donated to the club from the open shed to inside the machine shop. The group also drained the oil drum that was inside the garden shed into the gallon jugs which the club had been collecting for the past month. Thank you to everyone who donated milk jugs!

The official July work day also went smoothly. Kathy Brokhausen and Louie Aguirre cleaned up the old, rotting plywood that was sitting behind the containers next to the sink. The track crew rebuilt a switch connecting tracks 5 and 6 at the north end of the station. Work also continued preparing to lift the boiler off Patrick Ledbetter's locomotive *Rose*. *Rose* is Pat's 2-4-4T Forney from RMI. Gianni Gigliotti helped Mark Johnson and Zach Jones remove some of the hardware off the engine.

As many of you know our clubhouse refrigerator began having trouble keeping things cold, which is an essential aspect in the life of a refrigerator. Luckily Declan Henry's friend Jess Herron donated two brand new fridges to the club after she heard of the trouble ours was having. Jordan Rivera drove them over from a warehouse in Ontario.

The 819 and Terry Cummings' train ventured out for Betty and Terry's grandson's birthday party. Terry had his whole freight consist out for the party goers to see.

The old cable gates at the Placentia driveway are no more thanks to Hank Castignetti's work with the city. City crews came out to install and paint the new gates.

Other fun things at the club in July included a V22 Osprey making a low pass over the railroad, and the cab of *Rose* suddenly sprouted legs.

July 4th Fun Run

On July 4th the club hosted its annual 4th of July Fun Run. The day began with a group of members taking DJ's engine to a local parade with the club's trailer. The locomotive was very well received, it garnered lots of positive attention. Back at the club many members took to the rails with their trains. Dan O'Brien brought his propane fired, 0-4-2 Porter steam engine. Nate Vincent from SCLS brought down his Cannonball Super Mack and train. Patrick Ledbetter's UP business car made its first trips around the railroad in over 10 years. In the evening the trains congregated at the top of the Mountain Division and in the North Loop to watch the 360-degree firework show. A great time was had by all!


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UNION PACIFIC

Run Weekend Recap

July was another well attended run weekend with 2,018 riders on Saturday, and 1,521 on Sunday for a total of 3,539. At one point on Saturday, we had 8 trains cruising around the railroad hauling passengers. Thank you to everyone who volunteered!

July Ridership Total
3,539

Run Weekend Volunteers

Jeff Garrett, Sue Garrett, Dennis Neil, Josh Neil, Andrew McCune, Dennis Packer, Betty Cummings*, Chris Johns*, Seth Taylor, Anderson Ward, George Shearer*, Mike August*, Armen Bagdasarian*, Ben Viola, Josh Guesman*, Eric Engle*, Ken Matassa*, Lori Johnson*, Glenn Swain*, Allen Stephens*, Mark Johnson, Dixon Sheldon, Alex Gigliotti, Gianni Gigliotti, Zach Jones*, Declan Henry*, Paul Hammond*, Robert Platfoot, Nelida Rojas, Stefanie Drake*, Alex Acuna, Gary Reynolds*, Andy Romer, Aaron McCain, Steven Wong, Kevin Engle, Terri Fuqua*

An asterisk signifies working both Saturday and Sunday. Don't see your name listed? Make sure to sign in at the gift shop window during the next run weekend! Thank you for volunteering your time!

From the Archives

Check this out! Andy Romer sent in a photo of his mogul visiting OCME long before he purchased it. It is parked on the club's original steaming bay up at the station, this area is where the show siding is today.

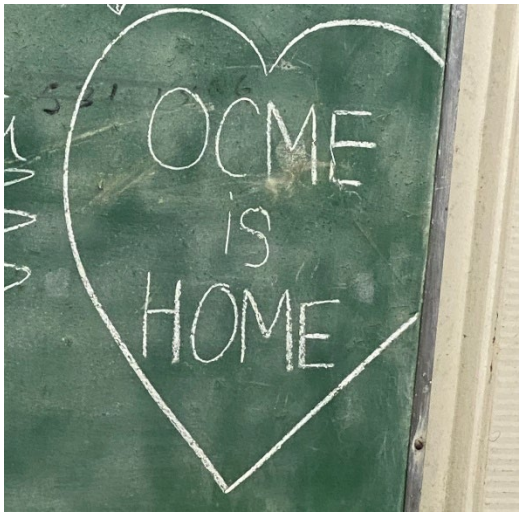
Let's Welcome Our New Members!

-Emma Jalandoni

- Brian Zupke

- Josh Levering

- Jim McGovern



New Knott's Fireman

Jeff Sumners recently became the newest fireman on Knott's Berry Farm's Ghost Town & Calico Railroad. Knott's has a great collection of 3ft gauge equipment from the Denver & Rio Grande Western and Rio Grande Southern Railroads. The GT&C's full-size steam engines, #41 and #340, were built in 1881 and have been running at Knott's since the early 1950s. Congratulations Jeff on this accomplishment!

Goathill Travels

Alex O'Donnell and Eli Zupke sent in this photo from Train Mountain's Operations Meet. Alex took up his Sacramento Northern RMI steeple cab and Eli took up his Blakey Models Railbike. The railbike even finished second in the TM Train Game steam/human powered category with 8 car movements!

UP's Ed Dickens to speak at S Fest West

Photo courtesy Luke Sharrett, New York Times

Ed Dickens, the man in charge of the restoration of Union Pacific Big Boy #4014 will be speaking at the Southern California S-Gaugers Club's S Fest West event at the Knott's Berry Farm hotel from 6-10pm on September 9th. That is well after the OCME Work Day ends so you should have enough time to attend both! Registration is required so visit http://www.socalsgaugers.org/sfestwest for registration forms and more information about the S Fest West event. Thank you to the Southern California S-Gaugers for reaching out to us about this event!

DESIGNING AND 3D PRINTING AN INDUSTRIAL LIGHT FIXTURE FOR MY 1.5" CABOOSE

By Josh Guesman

"I need a 1.5-scale light fixture for my caboose," I told myself after exiting another morning shower. It's where we all do our best thinking, right?

I drove to work convinced of my "enlightening" (pun intended) idea. Then I sat down on the computer to complete my quest. "This is going to be so easy," I chuckled while opening a Dr. Pepper at 8:47 AM (I don't drink coffee).

So I went to my plethora of 3-D item websites and figured the worst-case scenario would be that I have to pay $10 for the file, right? Then I can print as many as I want. "Give me 10 minutes," I thought, and I've got this wrapped up.

The backstory is that I'm slowly building -- with the help of Patrick Ledbetter -- my first train car, a caboose. And like everyone else in this hobby, I wanted mine to be a little different than everyone's.

I wanted to have a potbelly stove in it (model acquired and 3-d printed with led lights for a flickering firebox), some benches (self-designed), the cupola seats, marker lights (obtained from California Locomotive Works), and a FRED (designed by Patrick and 3-d printed. Perhaps another article on that when it's done), and any other stupid thing I could cram into it.

So this industrial light fixture from the 40s, 50s, and 60s was going to be easy.

But the problem quickly became that no one had the light the way I wanted to do it. So what do you do when someone doesn't have what you want? You make it yourself.

There was only one slight problem, though. Even though I taught myself how to draw with AutoCAD in high school - which I use almost every day for work - I had no luck trying to learn all these 3D modeling programs. They just seemed a little off, and I never needed to use them.

However, if you have a friend who is a wizard at Fusion 360, there is no hill you can't climb, and I knew if I hit a wall, I'd convince him to fix it for me - it's nice to have a safety net when you know you're headed out on the high-wire. Patrick is my design safety net.

But this is why these projects are essential. Because I didn't know how to do it, and if I wanted the finished product to turn out the way I imagined, I'd have to do it myself and learn along the way.

MY FIRST TRY:

I headed to the McMaster-Carr website to search out some industrial lights with cages around them.

WARNING: Do not approach this website unless you are willing to spend money. McMaster-Carr has everything you need. EVERYTHING. And they will deliver some of it to you the very same day. It's dangerous and the best thing to happen in the modern world. Well, this and those ICEE machines at 7-11.

You'd often consider these "Explosion Proof" or "High Hazard" lights. But really, I wanted to model a light fixture enclosed by a metal cage.

What do you know? McMaster-Carr had precisely what I was looking for. Or at least close enough that I could click the product detail and get some dimensions.

Pro Tip: There's a shortcut that sometimes works for McMaster-Carr. On certain items, the website already has a 3D model of the product. You can download it and plop it straight into Fusion, scale it down, and print it out. This works great for hardware items like hinges or door handles.

Alas, this light did not have that. But it's okay because I wanted to learn Fusion anyway. Right? Right!

I spent a good two days (and probably about 4 hours) trying to approximate dimensions while fixing little issues that would arise. I decided that a 1-piece light would be the easiest to print, and nobody could tell if it was one piece or two once I painted it -- this goes horribly wrong, but I couldn't tell yet.

I would print the entire thing out of clear resin. Paint the cage and base black and be done in one afternoon.

Just a small note on how I design things: I like to create in real-world scales because it's how my brain thinks. And if I'm going to be nudging and changing dimensions to twist and tweak things, I want to know what unit I am adjusting. If my brain says, "That should be two inches bigger," I can make it two inches bigger without worrying about what a scale two inches would be. Some people get so accustomed to the scale they design and model that they can make a 1:1 replica so they never have to scale their finished product.

But for me, that's too hard. I live in the real world, I'm modeling a real-world object, and I know that I can scale a design in my 3D slicer without worry. But you do have to keep the idea of things getting smaller when you scale it down in mind -- especially with smaller details.

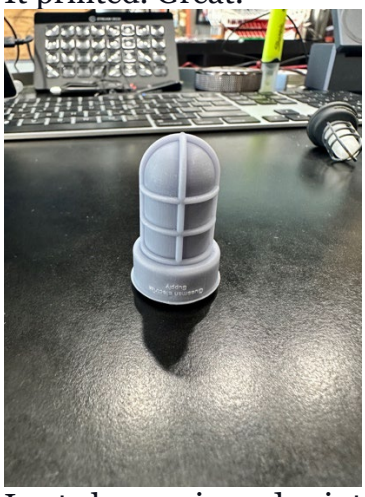
This mindset probably applies primarily to 3D printing. Because if you're doing something else, perhaps modeling a replica of a Southern Pacific Depot from the 1940s that you're going to have laser cut out of plywood in 1.5 scale (another time, I promise), then you want to know if your modeling software won't scale down (thanks Fusion). Alright, enough of that.

A problem arose in the design when I didn't use a semi-circle for the lens and instead tried to filet the end. That meant that the piping (that I had Patrick do when I got stuck trying it) wouldn't match up correctly. Patrick fixed it and sent it to me.

"It's perfect," I said. I imported it into my 3D slicing software (lychee), scaled it down by dividing it by eight, and printed 12 in a gray resin first because Amazon shipped me the wrong resin for my printer.

I like resin printing. But it's messy, it doesn't smell nice, and you need to cure and clean the items when you're done. But the detail is about 1 million times better than anything they do with filament printers. So it's my favorite. Plus, you pour liquid into a vat, and a solid object appears. It's basically magic or something out of Star Trek's replicator.

It printed. Great.



I got clear resin and printed it again -- this time adjusting the scale down a smidge further. I shoved an LED light into it and thought about how awesome I was for conquering this model-making hurdle. I am a god.

Then I got to painting it and realized that there was no way on gods green earth I was going to be able to paint these little tiny cages all black without getting it on the clear lens parts. This revelation came at 11:37 PM in my hot garage. And now that I was getting close to this thing, I wouldn't say I liked it that much.

The only way this would work would be to create a two-piece light with the cage and base as a single part and the clear lens insert as a separate item. Because then I could paint and finish each of them separately. Once again, "I'm a genius," I told myself, entirely omitting the part of the design process where I dismissed the two-part light as over-engineered for a model and that no one would be able to tell.

MY SECOND TRY:
Completely new project in Fusion. A different way of creating the model (revolving the design so that I only drew a flat plane that was a quarter of the model and then extruded that around 360 degrees instead of extruding a flat design and then shaping a cylinder). Cage on the outside. Clear insert on the inside as a separate piece. And then I made them an assembly.

I looked up how to add lettering on YouTube (YouTube is always your friend, and Patrick had suggested the lettering), and BOOM. The rendering was complete.

And it looks SO. MUCH. Better. Probably because this is how the actual light fixtures are constructed.

To the 3D printer. I used black resin for the cage because I like printing things in the color they will be. Even when I know I'm going to paint them.

It took me four renditions of running the design through the slicer and then printing before I got an orientation on the print bed that wouldn't deform the part.

Note: *This is a downside of resin printing -- or maybe just my printer. But you have to worry about suction forces on the print bed and large flat objects coming loose or pulling the design out of shape. Especially hard for square edges and round shapes. Placing designs at slight angles seems to help this. However, it's a guessing game most of the time.*

But I got my cages, and then I printed the clear inserts in clear resin at the same angle I used for the cages hoping that I'd learned my lesson on print deformation. I mostly did.

Pro Tip: Print as many as you can fit on your print bed at a time. I printed eight cages the first time and got six usable prints. With the clear inserts, I printed 12 and got seven usable prints. Resin printers take the same amount of time in relation to the height of the print. So a whole tray of things 400 layers high takes the same amount as one item 400 layers high.

I was then able to clean the resin prints in alcohol and cure them under UV light.

FINISHING:
Using my airbrush, I sprayed the black cage and base with two coats of black primer. Then I put two finish coats of pure black. I knew I wanted to do some dry brushing to accent the lettering, and I wanted to pull the edges out and give the piece some definition and depth.

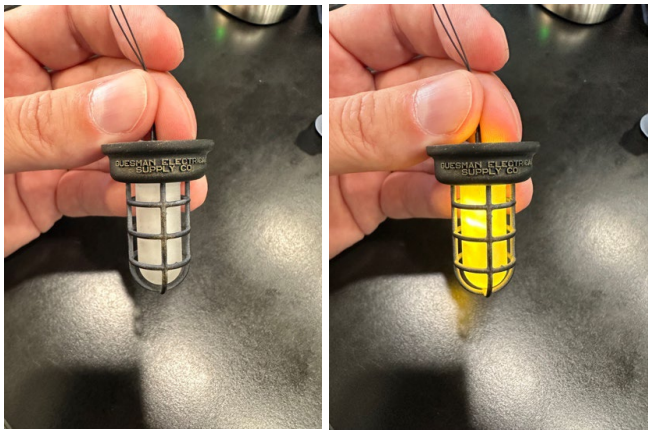
I used metallic gold acrylic paint for this, trying to give it a copper/bronze appearance. Maybe even Brass that was painted or tarnished. The gold paint was dry-brushed on. Less is more. Build up the color.

I let all my paint coats dry, then sprayed everything -- both the black cages and the clear inserts with a clear matte finish that was a UV protectant. UV light is used to cure the resin. So you want to make sure you stop the curing with a UV protectant, especially if this stuff will be outside in the sunlight.

I finished by gluing the clear insert into the cage and weathered the final look with some patina (or green) weathering powder to knock the color saturation down on the gold paint. If you don't know how to dry-brush something, I suggest searching out Dave Meek on YouTube and going down his ever-growing rabbit hole of modeling content.

I sprayed everything with matte clear again. And then again.

The final result is what I consider to be a reasonably close freelance replica of a 12-inch industrial light that you'll find in many breweries or any place trying to recreate that industrial loft look everyone loves right now. But those lights served fundamental functions in factories, processing plants, refineries, and businesses worldwide for years.



I imagine there are going to be some slight modifications still done. I'm working on which LED to fit into the design, and I want to make the bases magnetic so they will click onto the roof of the caboose.

And while the moral of this story is not to be afraid to try something new, the other moral is to rely on people who know how to do these things so you can bounce ideas off of them, and they can help you when you're stuck. Do it yourself, but do it with support. You'll learn so much!

Knowing that we have a broad knowledge base at OCME should give everyone the confidence to tackle that next project. And if you get stuck, someone at the club will know how to fix it, build it, or tear it out and re-design it. That's why we get into clubs like this. To share knowledge and ensure the kids growing up with this hobby carry on all the knowledge this club has acquired.

That's enough reading. Hit the layout for a while. Tell them I sent you.

Orange County Model Engineers

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