



1. Pennsylvania RR and Central of New Jersey trains race side-by-side on Gary Schaff's HO scale Hudson, Delaware & Lehigh. Deciding at age 65 that he didn't have time to complete a layout himself, Schaff hired a professional to build it.

BUILT BY THE PROS

One modeler relates his experience hiring a professional to make his HO scale layout

By Gary Schaff • Photos by the author

Like many model railroaders, I fell in love with Lionel trains in the late 1940s and early '50s. I built two tabletop model railroads during my early career in the Air Force, an N scale layout in the early '70s and an HO scale one a decade later. Military life wasn't conducive to anything larger.

Now that I've retired from career no. 1 and built my dream house, my Lionel trains are showcased along with train displays, train pictures, and railroad memorabilia in what was intended to be my dream layout room. Alas, it lacks a layout, as the rest of the space serves as a recreation and guest room.

Luckily, when my wife, Bonnie, and I built our home, we ensured that the attic could easily be converted to climate-controlled space, in anticipation of using it for a layout. That was 14 years ago.

The concept

About seven years ago, after I retired from career no. 2 (firefighter), I started thinking about the elusive layout's concept and design. It would feature two railroads that I was familiar with as a "yoot" in New Jersey: The Central of New Jersey (CNJ) and the Pennsylvania RR (PRR). I started buying engines and rolling stock at this time.

My layout concept envisioned each railroad having independent main lines, with some double track, from a Jersey waterfront city to the coal region of Northeast Pennsylvania. The lines would be continuous loops, allowing simultaneous, uninterrupted, hands-off operation of two trains.

There would also be interchanges at both terminals so each railroad would have access to the other's rails and

Custom builders

Here's a list of custom layout builders who advertise in *Model Railroader*.

- Affordable Model Railroads
affordablemodelrailroads.com
- Custom Model Railroads
cmrtrain.com
- Dunham Studios
dunhamstudios.com
- Model Scenery & Structure
modelsceneryandstructure.com
- Progressive Model Design
progressivemodeldesign.com
- RailDreams raildreams.com
- Scale Art Model Services
scaleartmodels.com
- Scale Models, Arts, & Technologies Inc. smarttinc.com
- The Shelf Layouts Co. Inc.
shelflayouts.com



2. Central of New Jersey RR tug *CommuniPaw* maneuvers alongside a car float at the Jersey City waterfront, one of the signature scenes on Gary's HO scale layout. The CNJ's Jersey City station in the background started out as a Walthers Milwaukee Terminal kit.

associated industries, engine facilities, and stations. The modeling timeframe would mimic what I was familiar with, the steam-to-diesel transition era of the 1950s. I picked fall, with its colorful foliage, as the time of year.

These mental images were soon translated into hard-copy track plans, which languished on the drawing table for a few years. Then in the spring of 2011, I found myself 65 years old, with a concept, a track plan, trains relegated to a display case, and an unfinished attic – but still no layout. I then took two concrete steps to break the inertia thwarting my dream.

First, acting as general contractor, I hired people to finish the attic, with framing, insulation, drywall, electricity, climate control, and carpeting. Bonnie and I painted. It was done by July.

Hiring subcontractors to finish the attic was always part of the original plan. The plan to build the layout myself, though, ended up in the “circular file.”

I've been keeping abreast of the model railroad hobby for many years via hobby magazines, including *Model Railroader*, *Great Model Railroads*, *Model Railroad Planning*, the How to Build series of MR special issues, and *Classic Toy Trains*, but I hadn't worked on a layout in 30 years. As I read about skilled and knowledgeable modelers who took sometimes decades to complete their layouts, I realized that, at age 65, I wasn't going to have time to re-learn the building part of this hobby. I needed help!

I compiled a group of model railroad designers/builders from advertisements in the aforementioned publications and visited their websites. I then narrowed the field to those that appeared to have the resources to build a top-quality mid-size layout in a reasonable amount of time. Clarke Dunham of Dunham Studios fit the bill, and the fact that his studio was about three hours from my house, allowing on-site visits, clinched the selection process.

Getting started

About the same time I started construction on the attic, I introduced myself to Clarke via e-mail and gave him the basics of my situation. In addition to the general concept described above, I also provided him with a list of scenes and industries I wanted, including a waterfront, oil and gas operations in New Jersey, and coal mining operation in Pennsylvania. The around-the-walls, walk-in style layout was to fit in a 14 x 35-foot space.

Having been out of the model railroad game for three decades, I was totally unfamiliar with Digital Command Control (DCC), but I wasn't going to build a new layout without it. I wanted track no larger than Code 83, which was satisfactory with Clarke, but that was also the smallest he was comfortable with from a reliability standpoint. I deferred to Clarke's experience with track type and DCC systems, and he chose Peco and NCE, respectively.

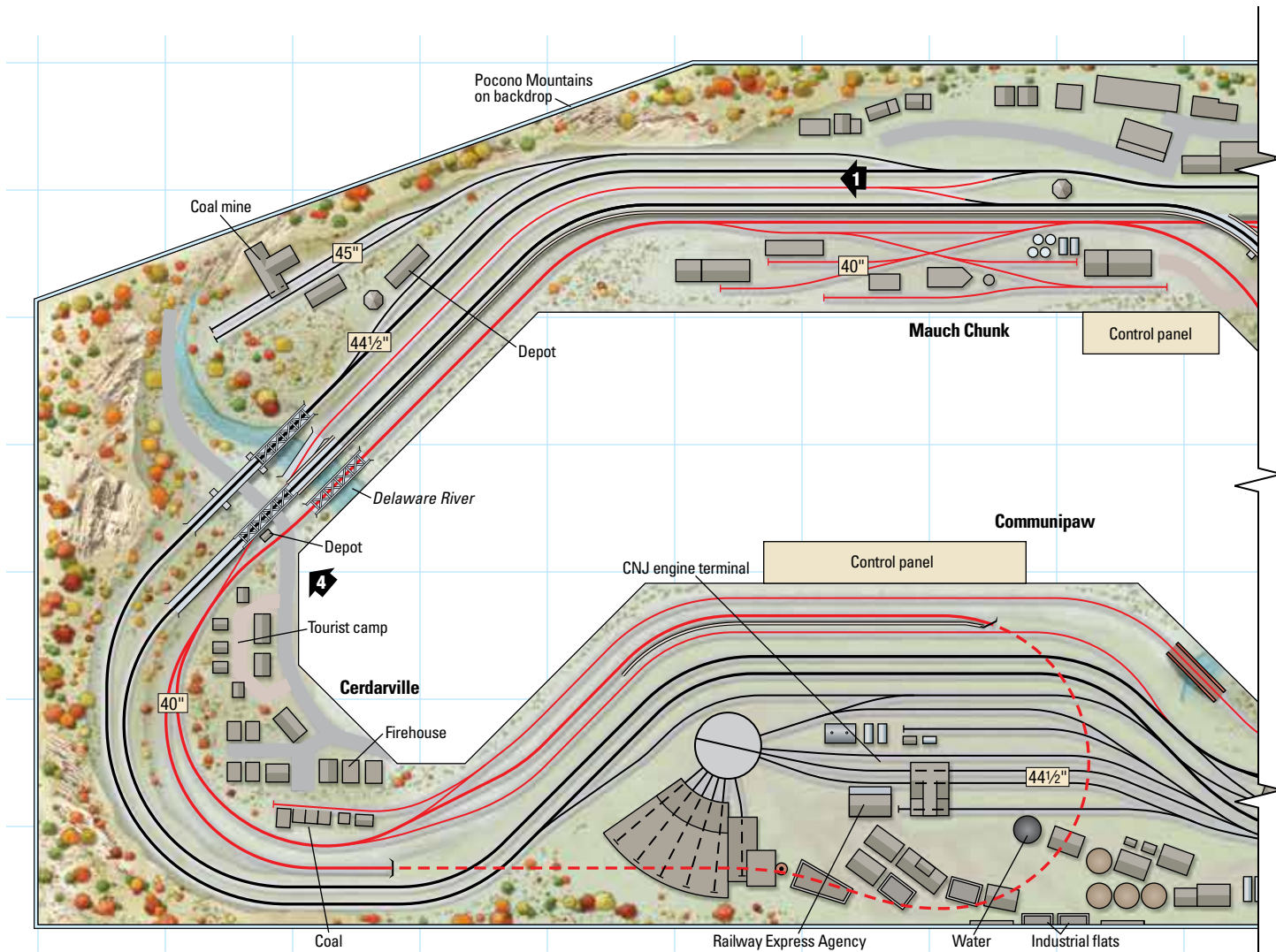
I didn't know where my job would fall into his schedule, but I was hoping he didn't have a big backlog. As it turned out, I was next on his “to do” list following his nearly completed Railroads on Parade tourist extravaganza in Pottersville, N.Y., which showcases several of his previous projects reconstructed under one roof.

I explained to Clarke that I felt guilty about not building my own layout and that I wanted to work very closely with him on its concept and design, but I wanted my signature on the layout, too. I also emphasized that, in my interaction with his design and build efforts, I didn't want to be an annoyance. Finally, I told him, “Please don't treat me with ‘the customer is always right’ business owner axiom. Please stop me from doing something stupid!” I found out that I didn't have to tell him that.

Jersey City to Mauch Chunk

We determined that the layout's two terminals would be Jersey City, N.J., and Mauch Chunk, Pa. (You won't find Mauch Chunk on a map today; in 1954, it merged with East Mauch Chunk to form Jim Thorpe, Pa.) Both rail lines would cross the Delaware River where the CNJ once did between Phillipsburg, N.J., and Easton, Pa., though neither city is actually represented on the layout.

Jersey City, on the Hudson River, was CNJ's main eastern terminus, with a large station and rail yards. There, passengers and freight were transferred to



3. Jersey City and its port is in the foreground in this overall view of the layout, which occupies a finished room in Gary's attic. The layout was completely assembled, scenicked, and detailed off-site, then moved to the attic in pieces.

ferries and car floats for the crossing to New York City. The Pennsy also had Jersey City facilities, but they weren't adjacent to CNJ's as they are on my layout.

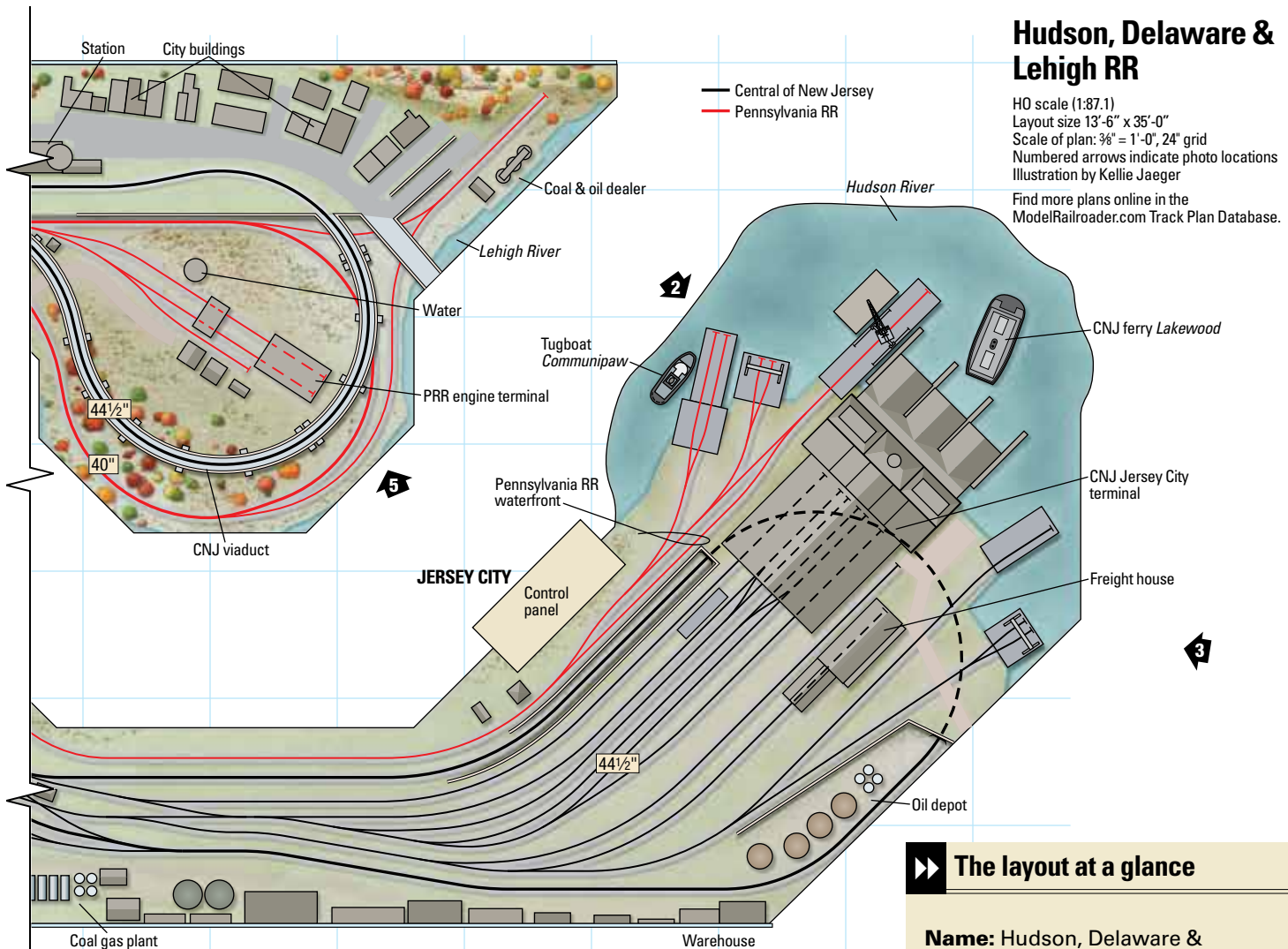
Mauch Chunk, across the Lehigh River from East Mauch Chunk, was originally a through station for CNJ passenger expresses and a terminus for its locals. About the time of my layout, this was the western terminus of all CNJ passenger service.

Mauch Chunk was also the junction with a CNJ branch from the coalfields, from which anthracite was shipped to New York, Philadelphia, and points north. This branch, with a coal mine/tipple at its terminus, is represented on my pike. The layout's name, the Hudson, Delaware and Lehigh (HD&L), refers to the three rivers that define its geography.

With my layout ideas in hand and my original track plan as a starting point, Clarke and his computer guru, Fletcher Conlon, came up with a redesigned table footprint and track plan. The new look

Hudson, Delaware & Lehigh RR

HO scale (1:87.1)
 Layout size 13'-6" x 35'-0"
 Scale of plan: 3/8" = 1'-0", 24" grid
 Numbered arrows indicate photo locations
 Illustration by Kellie Jaeger
 Find more plans online in the ModelRailroader.com Track Plan Database.



▶▶ The layout at a glance

Name: Hudson, Delaware & Lehigh
Scale: HO (1:87.1)
Size: 13'-6" x 35'-0"
Prototype: Central of New Jersey and Pennsylvania RR
Locale: Jersey City, N.J., to Mauch Chunk, Pa.
Era: early 1950s
Style: walk-in
Mainline run: CNJ, 170 feet; PRR, 108 feet
Minimum radius: 27"
Minimum turnout: no. 5
Maximum grade: 3.5 percent
Benchwork: plywood frame with "cookie-cutter" plywood subroadbed
Height: 40" to 45"
Roadbed: cork on extruded-foam insulation board
Track: Peco code 83
Scenery: extruded-foam insulation board and sprayed-on foam
Backdrop: self-adhesive photos on Sintra
Control: NCE Digital Command Control

was both more appealing and functional, eliminating my series of rectangular benchwork boxes with a multi-angled, flowing path to facilitate operator entry and movement inside the walk-in space.

The revised track plan has the CNJ and PRR operating on different elevations (CNJ high, PRR low) for most of their run. There are, however, several grade changes. Both lines have to either climb or descend to their interchange points at each terminal, the PRR has to climb to access its Hudson River wharf, and the CNJ's Jersey City return loop descends beneath the passenger terminal.

Placing landmarks

The terminals feature two custom-built CNJ stations by Clarke's master model builder, Delia Bowstead. The Jersey City passenger terminal, with its train shed and ferry slips, is an imposing sight that dominates the Hudson River waterfront display as one enters the train room. It started as a Walther's Milwaukee

Terminal kit, but Delia turned it into a close, albeit slightly scaled-down, version of CNJ's eastern terminus. CNJ's Jersey City engine terminal was about a mile from the passenger terminal and is represented on the layout in a much scaled-down version.

I contracted separately with Rich Cobb, a model-building wizard I found searching the web for ferries, to scratch-build the CNJ ferry, *Lakewood*. Due to space limitations, the boat's length had to be cut back to about one-third that of the prototype. Rich also built the CNJ tug *Communipaw* from a Walther's kit.

The Mauch Chunk station is much smaller than the Jersey City one, but nevertheless is classic in style and appeal. Delia built this virtually from scratch, and it's a very close representation of that structure. Despite its smaller size, Delia said this was a greater challenge than the Jersey City station.

Between this terminal and the Delaware River was an area still open to



4. Exercising trackage rights over the Pennsy, a Central of New Jersey diesel approaches the tiny Cedarville depot while a Mikado leads a CNJ freight on the truss bridge overhead. Gary chose to set his layout in the steam-to-diesel transition era.

development. I asked Clarke what he thought of placing my parents' 1930s Toms River, N.J., business and home-stead on this site. The business was a combination of vacation cabins, a gas station, and luncheonette. Clarke and Delia jumped on the idea with enthusiasm. I provided vintage photos of the place along with a footprint of their layout for Delia to work from. The Cedars, named for the trees in front of the establishment, has thus been transplanted from Toms River to the layout's fictional town of Cedarville. Other businesses and a rail spur have been added to this small but scenic community.

I used a liberal dose of modeler's license when it came to placing the rail line, so please excuse the CNJ and PRR's almost parallel tracks between Jersey City and Mauch Chunk. Although the Pennsy had Jersey City facilities, it never went to Mauch Chunk. Perhaps the Lehigh Valley RR would have been a more authentic choice, but my familiarity with the Pennsy and collection of its engines and cars dictated otherwise.

Operations

Although each railroad's operations are generally confined to its own main

line and associated industries, a train has the ability to transfer to the other's tracks at either terminal. That means a train could double its run by traversing one main to the end and then switching to the other.

The Jersey City passenger terminal, the Hudson River wharf area, and the Communipaw engine service facility provide a high concentration of diverse operational possibilities. Not wanting to give up limited layout space to hidden, unscenicked staging, I let the passenger terminal and wharf area "Track City" yards serve that role.

Like the prototype, my CNJ Jersey City passenger station is a stub-end terminal that necessitates more complex operations than a through station like Mauch Chunk. An operator on the HD&L has the option to either back a train into the trainshed or arrive engine-first and use escape tracks at the end to free the locomotive.

My passenger operations, both CNJ and PRR, are mainly commuter-coach affairs with only one name train, the fictitious CNJ *Mauch Chunk Clocker*. I do have, however, a roster of PRR heavy-weight and lightweight varnish waiting in the wings should the mood strike me

to add sleepers, diners, parlors, and observation-lounges to form *Broadway Limited*-style consists.

Each railroad's independent main is protected by an operating signal system. We had to make do with a non-prototypical signal system for the PRR, as its unique position-light signals weren't available commercially at the time of construction. A position-light upgrade is in the works.

Along both mains, in addition to station stops, are several industries to be served via spurs and sidings. Of special note is the five-spur industrial district off the Pennsy at Mauch Chunk. This "switching puzzle" was Clarke's idea to add more interest to operating sessions. One of the spurs also serves as the DCC programming track.

Facilitating operations are three control panels at the Jersey City terminal, Communipaw engine facility, and Mauch Chunk. Each panel has "mainline clear" buttons for each railroad. These buttons simultaneously line all mainline turnouts for the through route, giving a switch-friendly mainline run. All turnouts can be activated at the panels, manually at the turnout itself, or with any DCC throttle.

The building process

Clarke and crew built the entire layout in his 8,000-square-foot studio complex. The benchwork was built in sections and designed to take anything short of a direct mortar hit. After being assembled, the sections received foam, cork roadbed, track, and scenery, only to be disassembled, trucked to my home, and reassembled. The reason for the substantial benchwork is that his layouts are designed for and must withstand the stresses of assembly, disassembly, and transport, not to mention men working on top of the table if necessary.

The scenery is a combination of carved and sprayed-on foam. The backdrops are plywood-framed and covered with a 1/8" acrylic product called Sintra. The Sintra is attached to the open plywood frame with air nails, and the backdrop, printed on a self-adhesive product called Photo Tex, is carefully adhered to it. The backdrop scenery consists of photos selected by Clarke and Fletcher, then blended into a seamless scenic flow by Fletcher to match the layout's contours.

Prior to disassembly, the layout was tested with my trains to ensure all aspects functioned properly. Before starting construction of the layout, Clarke asked me for pictures of the entire route the layout sections would have to travel from my driveway to their final positions in the attic. The layout benchwork would be designed to negotiate the route's twists, turns, and dimensions.

Clarke and I were in constant communication via e-mail throughout the building process. I kept a copy of all our e-mails for reference, and they numbered more than 100. I ended up making six on-site visits to Dunham Studios, and they were invaluable. Meeting in person with Clarke and his staff was delightful and enlightening, and upon departing from each visit, I felt reassured and satisfied that all was on track and heading in the right direction.

The final product

My layout was delivered by a tractor-trailer in late July 2012 after about 10 months in the construction phase. I used a U-Haul to ferry the sections from the semi down the long, wooded, winding driveway to our home.

Bonnie and I hosted Clarke's installation crew at our home as they worked well into the night for four days, stopping only for meals and sleep. I was exhausted just watching this marathon effort. By the time they departed, they were beginning to feel like family.



5. Streetlights come on as twilight settles over Mauch Chunk. In addition to the working streetlights and building lights, the layout also has independent signal systems for the two main lines.

Although I had visited the layout in Clarke's studio a couple of weeks earlier when it was near completion, seeing it in its custom-made attic digs was like night and day. As the "parent" of a new model railroad, I'm learning how to care for and operate my "baby." In addition to learning the operating techniques of this system, I sometimes go up to the attic just to look. I slowly walk around the layout, taking in its detail and beauty, like a stroll through a museum.

Although the layout is essentially complete, Clarke stopped building where our agreed-to budget dictated. I'm sure that as I absorb all the details of this masterpiece, I'll find things to add, like new details on a structure. Now that I have a virtually complete layout, the overwhelming intimidation factor of doing something myself has evaporated. I envision family operating sessions, especially with my grandson, Charlie, whom I'm shamelessly addicting to the joys of model railroading.

As for the future of the HD&L, it will remain fixed in the halcyon days of the early 1950s. Ike's on the golf course, the Jersey Central and Pennsy prosper with a diverse mix of steam and first-generation diesels, Mauch Chunk stays Mauch Chunk, rail-to-ferry exchanges continue on the Hudson, and Lionel's original Berkshires, F3s, and Train Masters will forever mesmerize the post-war generation. Life is good.

Thank you

During my visits to Dunham Studios, I got to meet and work with Clarke's

extremely talented staff. In addition to the aforementioned Delia and Fletcher, I'd like to acknowledge the following, who were also instrumental in creating my layout: John Doty, Gerry Espenshade, Roy Baker, and Jim Maday. Clarke's wife and partner in Dunham Studios and Railroads on Parade, Barb, was a wonderful hostess who fed me scrumptious lunches during my visits and populated the layout with expertly placed scale people. And of course there's Bonnie, my wife, who selflessly shares me with my other love, trains. [MR](#)



▶▶ Meet Gary Shaff

Gary is a retired Air Force officer and a retired career firefighter. He resides in Connecticut with his wife, Bonnie, and their girls, Annabelle and Casco (both black Labrador mix pound puppies). They also have two grown human children, Holly and Jared, and grandson Charlie, seen above.