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Introduction: The Siren Song of Railroading in the Mountains

Denver & Rio Grande Western EMD FTs ease a freight through the snow-covered Rocky Mountains on Mike Danneman's spectacular but modestly sized N scale railroad. Such breathtaking scenery is usually the chief drawing card for modeling mountain railroading, complemented by the need for lots of power up front and often pushers at the rear. The downside from an operational standpoint is the lack of industries and interchanges in the narrow mountain valleys. *Mike Danneman*

John Denver got it right when he sang about "Almost Heaven, West Virginia," as my frequent photographic forays into the Mountain State during the 1970s confirmed. His subsequent "Rocky Mountain High" proved equally accurate, as my wife, Judy, and I discovered when we rode the eastbound *Rio Grande Zephyr,* the remnant of the *California Zephyr* that ran between Salt Lake City and Denver (photo **1-2**). We also drove along the Rio Grande's original route through the Rockies via now-moribund Tennessee Pass and most of the abandoned Rio Grande Southern. And, like many of you, we rode the famous three-foot-gauge lines out of Durango and Chama. Rocky Mountain High indeed!

Good news, bad news

It's therefore easy to understand why so many modelers have succumbed to the siren call of mountain railroading. In the next 90 or so pages, we'll discuss many of the features that led to such decisions. We'll look at the attributes of a mountain railroad, compare narrow- and standard-gauge railroading, and investigate the signature characteristics of railroading in the loftier climes and how to establish a time and place. We'll also consider what motive power was needed to conquer mountain gradients, review some design ideas, and hear from a veteran modeler about the differences between modeling a flatlands and a mountain railroad in the same basement footprint, and then chat about operating opportunities on a model railroad set in the mountains. Last is a sampler of images of a handful of the myriad outstanding model railroads that have embraced a mountain-railroading theme.

One caveat: In these pages I bring good news and not-so-good news. The good news about modeling a mountain railroad is that you can't beat the scenery. The not-so-good news? You can't "beat" the scenery—that is, railroads audacious enough to penetrate the interior of mountain ranges are usually hemmed in by the walls of the canyon carved by the river they follow through the rocks.

This presents opportunities for scenic grandeur but lops off at one stroke a major operating opportunity: interchanges with other railroads, as we'll chat about at more length in Chapter 3. That, in turn, raises the age-old but rather pointless debate about "scenery" vs. "operation" (think both), which we'll also discuss in greater detail.

In short, the purpose of this brief overview of the potential of modeling mountain railroading is not to "sell" you on this approach to our broad-shouldered hobby. There are other equally valid themes for a model railroad, including some that at first glance may seem to come up short in the scenery department, especially when compared to the scenic vistas inherent to a mountain environment.

Despite an age-old emphasis on good scenery that we can trace back to such pioneering mountain railroads as John Allen's fabled Gorre & Daphetid, however, we have learned that such scenic feats have to be balanced with equally realistic operational opportunities for the railroad to prove rewarding over the long haul. Indeed, one can—and I will—point out many advantages to modeling a railroad that earns a living out on the vast prairies of central North America.

No matter; mountain railroading will remain a major attraction for countless model railroaders. And, as you'll see amply demonstrated in these pages, so it should.

Let's begin with a look at the characteristics of mountain railroads that make them such appealing prototypes to model.

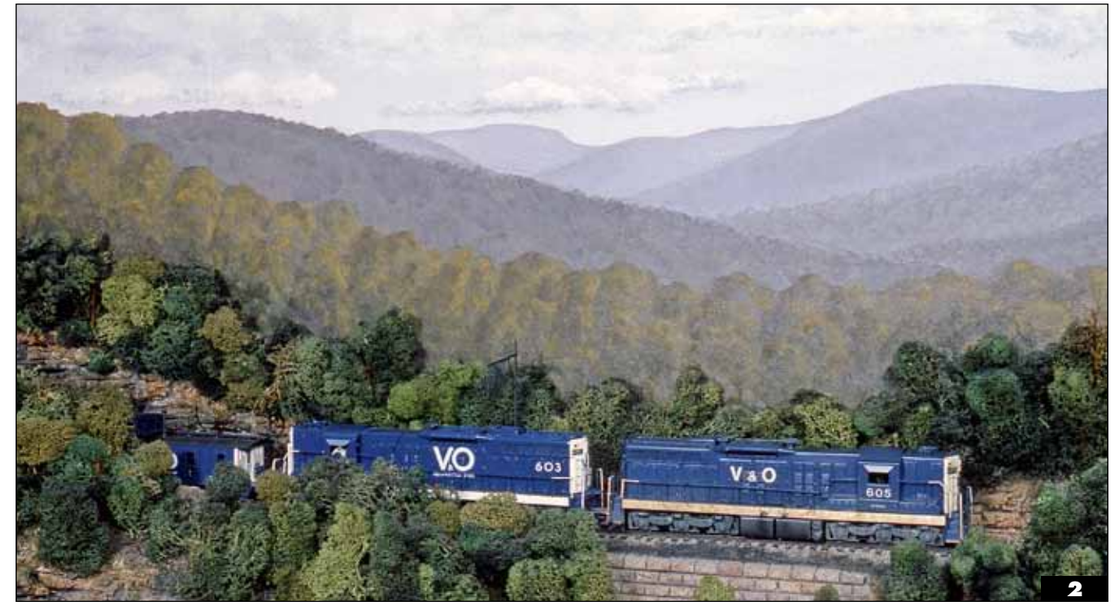
Mountain Railroading Pros and Cons

1

THREE

A northbound coal drag negotiates a reverse curve on David Stewart's original O scale Appalachian & Ohio Railroad. As is apparent in the inset photo, the main line was only 9" away from the basement wall, showing the feasibility of modeling mountain scenes on narrow shelves, even in O. Also note the narrow aisle and high fascia at left, which allowed operators to slide past each other without fear of damaging the scenery. The tunnel divides one scene into two "events," thus increasing the apparent length of the run, and disguises the relatively short length of a train powered by three units. Bob Sobol built the sound-equipped F3s from P&D kits. *Bob Sobol*

There is no universal solvent; everything is a compromise, and every choice precludes another often equally appealing choice. So it is with choosing to model a mountain railroad. In this chapter, we'll chat about choices, pro and con, between modeling this or that mountain railroad as well as between modeling a mountain railroad instead of a flatland neighbor. Taken as a whole, this book should not be seen as an effort to sell anyone on the benefits of modeling a mountain railroad. Rather, my goal is to present a balanced look at what you might gain vs. what you may have to give up or minimize.



2

One of the first model railroads to demonstrate that good scenery and realistic operation were cooperative partners rather than competing approaches to model railroading was Allen McClelland's original Virginian & Ohio HO layout. Allen took time to build contest-winning models and hand-paint spectacular backdrops, but his goal was to create a realistic setting for equally realistic operation. *Allen McClelland*

User report

We began that debate with an overview of standard- vs. narrow-gauge railroading in the previous chapter. Let's continue our deliberations with a "user report" from a veteran mountain railroading modeler, and then take a closer look at a teeter-totter that has scenery at one end and operation at the other.

I asked David Stewart, designer and builder of the highly regarded O scale Appalachian & Ohio versions 1.0 and now 2.0, to list some of his objectives when he designed and constructed the railroad, **1**. Here's his report:

"Mountains high enough to shrink the viewer into the scene: This obviously works well in larger scales, but higher benchwork would enable some of the same feel for HO or N.

"Very vertical scenery using rocks and tree slopes almost like the building flats we're more used to: This imposes the scene onto the viewer and creates an isolated, in-the-scene feel. There are some photos on my website (aorailroad.com), as well as on Bob Sobol's website (bobsobol.smugmug.com/Trains/Model), that reflect this. A favorite example of this was the Kayford branch where the tree-covered hillside was vertical, but the texture of the trees created the impression of a natural hillside. The Kayford (Haysi) B unit approaching the cut of hoppers on the 1.0/layout page shows this.

"Mountain ridges that cross the aisles, as seen in the photos already published in the May 2006 *Model Railroader* and *Model Railroad Planning* 2009.

"Serpentine trackwork: There was very little tangent track on A&O 1.0; even the two yards of 1.0 were curved. Other than Millport's hump yard, A&O 2.0 also has very little track that isn't curving to the right or left.

"River valley that is viewed only from either end, not the side: The photo on page 43 of MRP 2009 shows this concept as the coal drag descends the grade. The center of the arc has the expected mountain protruding into the scene toward the river and acts as a view block to prevent operators from seeing the opposite side, and potentially another operator. The interior of the mountain had an opening for access, and—had I been able to complete this scene—this opening would have been invisible from the two ends, thus not needing an access hatch.

"Scenic 'step-ins': At the opposite end of this valley was a U-shaped step-in for viewing the other end of that scene. The step-in allowed the operator to be surrounded on three sides by the scenery. The natural gap in the mountain for the river provided a logical viewing opportunity. The main line has to cross the river, so the scene included a deck-girder bridge for a bit of visual drama. Even in its unfinished state, this 'scene immersion' was a favorite railfan viewing spot. It also acted as a 'passing siding' for operators, as the aisle was narrow at that point. The plan for version 2.0 provides for similar features."

Signature Characteristics

1

FOUR

As you walk into Gerry Albers' basement and get your first glimpse of his HO layout, you can easily determine what he's modeling: Appalachian coal country, specifically the Virginian Ry. The highly eroded and heavily wooded ridges of approximately the same elevation and implied serpentine river course all testify to the location. The dispatcher's office is housed in the "depot" at upper right. *Gerry Albers*

There's no getting around the fact that a lot of folks travel to the highlands just to take in the "purple mountain majesties"—and that far fewer of us venture out to see the West 40 on a farm in Nebraska. To wit: As my wife and I were driving into Indiana after crossing Ohio on U.S. 30, I suggested she put down her crossword puzzle and look at the beautiful rural Hoosier landscape. "I saw it in Ohio," she shot back with nary an upward glance. A Hoosier by birth, she vastly prefers to live in and travel through mountainous terrain. Where scenery is concerned, the mountains are going to win almost every time.

Scenery isn't ubiquitous

Some of us are under the misimpression that rocks are rocks, and mountains are mountains. Not even close. The knowledgeable observer can almost always tell what part of North America he or she is in by looking around at the landscape, **1**.

Modeling a mountain railroad therefore involves a great deal more than simply picking a favorite prototype or, for the freelancer, base prototype and buying or painting some rolling stock in the appropriate paint scheme. Everything from the type of motive power and how it is painted to architectural characteristics, tree types, and the shape and structure of landforms contributes to—or detracts from—the plausibility and hence realism of our model railroads.

Most of these concerns and opportunities were illustrated and discussed at greater length in my book *Planning Scenery for Your Model Railroad* (Kalmbach, 2007).

Mountains don't just happen

Mountains are not "free." Something big and powerful shoved them up, often in a relatively short period of time, geologically speaking. That continues to this day as continental plates continue to drift. India, for example, is still doing its best to continue northward on its rapid (again, geologically speaking) journey away from the east coast of Africa, hence the Himalayas.

Some ranges like the Appalachians are truly ancient, coming into being hundreds of millions of years ago, while others—notably the Rockies—are comparatively very young mountains with origins dating back only 10 million years. Ancient history, you say? Not at all. You can't model a mountain range realistically unless you understand a lot about its age and reason for being. How that range came to be is often very obvious in the highly visible structure of the rock formations alongside railroad and highway rights-of-way, and those physical and highly modelable characteristics define the location.

2

The inclined tracks in the foreground allowed coal to be lowered from the Sewell Bench at Kay Moor, W.Va., on the C&O 560 feet below in the New River Gorge. The original peneplain surface into which the ancient "New" River cut a channel is evident in this 1929 photo. *Tony Koester collection*

The Appalachians, for example, weren't created all at once. In simplified terms, you can think of them as the "original" Appalachians, which resulted from a collision between two tectonic plates around 400 million years ago, and today's Appalachians, which are about half that old. The original edition had worn down to an almost flat surface called a peneplain by the time another shoving match between continents occurred. The latter collision pushed up the plain to the height of today's tallest Appalachian ridges, and water and wind and gravity have been teaming up ever since to wear them down to form yet another peneplain.

Evidence of this abounds, **2**. As one stands atop a mountain and looks off in any direction, he or she cannot help but notice the relatively uniform heights of the ridges. This is the old surface of the peneplain.

That this happened a long time ago is made clear by the meandering path of Appalachian rivers such as the New River, an ironic name for one of the oldest rivers on the planet. Young rivers slice through a rising mountain ridge to create steeply walled or V-shaped valleys, as is evident along the Arkansas ("arr-*kan*-sas") River in the Rockies, **3** and **16**, marking both the river and the mountain range as mere youngsters. But over eons of time, aging rivers meander back and forth, **4**, like the old New and the mighty but ancient Mississippi. Old Man River indeed!

It would therefore be expected that an Appalachian railroad would take shortcuts by tunneling through meanders, whereas a Rocky Mountain railroad would follow the still relatively straight path of the river, tunneling mainly through rock outcroppings, **5**. As always, exceptions abound, but it's usually wiser to model the commonplace rather than the exceptions.

Distinctive rock formations

Like the Rockies, the Appalachians are anything but uniform in structure. Despite the prepon-

Motive Power Equal to the Task

1

FIVE

When Andrew Dodge decided to switch from the Denver, South Park & Pacific in On3 to the Colorado Midland in O fine-scale, he faced a lack of suitable motive power. Solution: He is scratchbuilding the required locomotive fleet, including these three Consolidations (2-8-0s). The lesson here is to be sure that needed motive power is available, or that you have the means to build or acquire it, before choosing to model a specific railroad and era. *Andrew Dodge*

It's one thing to conjure up dreams of a favorite railroad's motive power racing along the main line at the front of a matched set of passenger cars, or perhaps a center-cab Camelback lugging a long string of anthracite-filled hoppers. But such schemes immediately raise concerns: Is that locomotive available? Is it accurate? Is it affordable? Does it run well? Can you fix it if it doesn't? Will it pull a string of heavy brass passenger cars or loaded coal hoppers up your ruling grade? If not, are close-enough stand-ins available? Or can you kitbash or scratchbuild the needed power, **1**?

The sounds of battle

One of the most important advances at the disposal of a mountain-railroad modeler—indeed, any modeler—is Digital Command Control, together with onboard sound systems. Command control makes it feasible to use helpers and pushers exactly like the full-size railroads did with separate crews, **2**. We're no longer faced with a wild juggling act of flipping toggles or turning rotary switches while watching for electrical block boundaries as we strive to operate pusher locomotives independently of the road engines.

Moreover, in the unlamented era before sound decoders, it took a vivid imagination and a lot of knowledge to conjure up the sounds of road and pusher locomotives battling against mass, friction, inertia, and gravity as model locomotives went about their chores with barely an audible whisper.

2

Command control makes it feasible to use separate crews to operate head-end or mid-train helpers or pusher locomotives without continuing "model railroad thoughts" as we look for the next block toggle or rotary switch. Here a Reading T-1 4-8-4 shoves hard against a coal train and its steel "Northeastern" caboose on Jim Hertzog's HO railroad. *Mike Rinkunas*

3

A trio of what was then the latest and greatest in six-motor power when this early 1960s photo was taken—turbocharged EMD 2400-hp SD24s—powers a freight past a rock face comprising horizontal layers of sandstone. Six-axle C-C units were confined mainly to mountain railroads until the advent of what became the ubiquitous SD40 and its newer siblings and competitors. *Union Pacific*