1. Heavy action as Nº 7 shuttles pit cars to and from Choking Crow Mine and TFL&M Co.’s (original) Climax works the logs down from Camp 7.
The Triple Falls Lumber & Mining Company Railroad (TFL&M Co.) is a narrow gauge, industrial short line, running on No. 1 gauge (45mm) track. My son, Weylin, and I began designing the railroad in the fall of 2000 and started construction in 2001. Weylin was 10 at the time, and I was taking time off work due to a back injury.

Construction began in the spring. I supervised the installation of the pond and the main rockery, built by Forro Construction of Bainbridge, Washington, but soon light outdoor work began to restore health to my back. By late summer I was putting in full days building the railroad, with Weylin’s help.

During that summer, the National Garden Railway Convention was hosted by our local club, the Puget Sound Garden Railway Society. Weylin and I visited dozens of railroads from Portland, Oregon, to Vancouver, British Columbia, gathering ideas and focusing goals for our own railroad.

**Concept**

We had two main design goals for the TFL&M Co.: we wanted an operating railroad and we wanted that railroad to be integrated with the landscape. Uniting distant parts of the garden, the mainline climbs more than seven feet on steep terrain. More than 50% of the track is in yards, which are located on terraces two to three feet high for accessibility.

The railroad is freelance in design, inspired by the industrial railroads of the North Cascades in the early 1900s. Railroads in this area were mainly standard gauge, but a limited amount of narrow-gauge railroading allows us to imagine that our short line might have existed. The main industries of the railroad are lumber and mining. The line also serves a few communities and businesses, moving live-stock, oil, and assorted dry and refrigerated goods. Products that are actually moved around the pike include logs, lumber, coal,
mine tailings, and (when we finish the mine) ore.

The railroad
The railroad is a loop-to-loop-to point line, with two turntables and two wyes. There are three districts on the railroad: the Lower District, the Upper District, and the Mountain Line, which serves the logging and mining operations. The Lower District loosely represents the region of northwestern Washington, where goods were collected in the lowland valleys and distributed to distant points by rivers, seaports, and a mainline interchange.

Cedar Yard, the main classification yard, is the terminus of the Lower District. Way freights originate and terminate at Cedar Yard, with its adjoining shed and engine facility. Towns, businesses, and farms in the Lower District are spread out along the mainline, where plantings and structures convey a rural setting.

The Upper District is a mountainous region, characterized by steep, rocky terrain, waterfalls, tunnels, trestles, and shade. Three small towns—Triple Falls,
Clearwater, and Boulder Flats—cluster around Moose Pond, which serves the TFL&M Co. sawmill. Three waterfalls (the short line’s namesake) cascade into Moose Pond, and remnants of the spur to a failed silver mine are visible on the hillside adjacent to the falls. There is a passenger depot and team track at Clearwater and several small businesses in Triple Falls.

The Mountain Line gains elevation as it spirals out of Moose Pond basin. One spur connects to Choking Crow Mine. The other continues climbing to Camp Seven, where the logging operation takes place, and to Manley Mine. Manley Mine has a turntable modeled on the prototype at Monte Cristo, Washington.

**Scale and proportion**

In model railroading, scale refers to the proportional relationship between the size of a model and its prototype. Scale can also refer to the aesthetic relationship between an object and its context. For example, models that are prototypically accurate may still sometimes seem out of scale on the railroad, which includes the track, structures, and plantings. In one sad case, I built a whole set of towers for an elevated spur that overpowered the small town the spur ran through. I had to deconstruct the towers and reroute the mainline around the outskirts of the town.

In truth, the design objective for the railroad is not proportional accuracy at all, but ambiguity. Plantings of all sizes blend and contrast scales. Tiny groundcovers and bonsai trees form a miniature world below rhododendrons, which in turn form an understory below fruit trees, maples, and pines. Finally, towering over everything is an 80’ cedar. The ambiguity of scales integrates the railroad and the garden, making the Alice-In-Wonderland effect feel almost normal.

**Structures**

With a few exceptions, our structures are scratchbuilt and made of wood. They are 1:24 scale, which keeps them small enough not to overburden our available spaces. Overall, we are aiming for a time-worn, somewhat dilapidated appearance, true to the effects of the rainy Northwest climate. Most buildings are constructed with an interior 1 x 1 frame, which is screwed with screws of the appropriate size.
together. Ripped cedar and redwood is used to side the buildings. It is nailed to the frame with a headless-pin nailer. The siding is stained with a semi-transparent stain or clear sealer. Cedar shingles (from Garden-Texture) and corrugated aluminum (soda cans rolled through a paper-corrugating tool) is used for roofing. Roofing is secured to Masonite sheathing with Lexel, an excellent, silicone based, exterior adhesive. Windows are from Grandt Line. Orange, low-voltage landscape lamps are used to illuminate the interiors. Windows are fogged with DullCote from the inside so that the light is diffused.

Some of our structures have been built for operations. The coal run, for example, has an operating coal chute, which receives actual crushed coal from pit cars originating at Choking Crow Mine and transfers it to a hopper on a siding below on the Upper District. The hopper ultimately bottom-dumps its load into a gondola at the Chumstick Coal Distribution Company (some “miles” away) on the Lower District. Someday soon, the gondola siding will be converted to standard-gauge track, which will disappear into a tunnel, to represent an interchange with the mainline railroads beyond.

**Track**

The site is very steep. The average slope of the land prior to terracing is approximately 6:12. The maximum grade of the mainline track is 4.3% on straight track and 3% on curves. Minimum radius for curves is 3’-6”. To date, 970’ of track have been installed (507’ on the mainline and 463’ on sidings), including 53 turnouts.

Track is code-250 and -215 aluminum by Llagas Creek. To blend with the garden and to give a rustic, backwoods look, the rails were stained with Daly’s semi-transparent wood stain. It has lasted now for almost 10 years. Seven turnouts on the far side of Moose Pond are controlled by E-Z Aire pneumatic components; the rest are manual.

All track is screwed to treated, buried 2 x 4s, supported either on 16” Trex posts, driven into the ground, or on treated joists spanning between retaining walls. Track is ballasted with a mixture of bridge deck topping and #0 black marble chips from Manufacturers’ Minerals in Seattle.

**Locomotive roster and rolling stock**

Currently, TFL&M Co. operates one three-cylinder Shay, one Climax, and one Baldwin American, all by Bachmann; and a Davenport switcher and a Mogul by LGB. All are battery powered and equipped with Northwest Remote Control Systems radio control. The company also operates a two cylinder, live-steam Shay by Accucraft, similarly installed with R/C gear. Electric locomotives are lightly weathered, the live-steam Shay has a wooden cab from Pikes Peak Locomotive Works, and all are decaled with TFL&M Co. lettering.

Rolling stock consists of 58 assorted freight and passenger cars. These are
mostly by Bachmann, with some by USA Trains and a few from LGB. The company owns five cabooses. Two have been painted company green, weathered, and lettered.

**Operations**

Operations are based on a system pioneered by Dave Goodson and his Colorado Consolidated Railway, in Kirkland, Washington (see the August 2009 GR). A group of local hobbyists convene on our railroad one Sunday afternoon a month, April through October, for operating sessions. Weylin and I also put on a special “kids’ day” at Christmas for neighbors and friends of the railroad.

There are currently 20 sequential waybills, which list the order and location of moves to be performed by each way freight. To prevent congestion, no more than seven trains are allowed to run on the railroad simultaneously. Generally, operators use remote controlled, battery-powered locomotives, although radio controlled, live-steam locomotives also occasionally operate together with the electrics.

The logistical problem of setting up a functional sequence of waybills required a kind of crude board game, showing the track diagram, proportional sidings, and rolling stock (represented by painted nuts). Waybills developed on the board were refined in the field to achieve a smooth-running operation.

**Utilities**

A combination of line voltage and 12-volt wiring is in place for general lighting. Twelve-volt wiring is in place underground, next to the track’s structural roadbed, to illuminate structures.

For air switches, tubing is installed in

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**Plants on the TFL&M Co.**

Seattle, Washington
USDA Hardiness Zone 8

**GROUNDCOVER**

Corsican sandwort  
*Arenaria balearica*

Platt’s Black brass buttons  
*Cotula squarifolia ‘Platt’s Black’*

Mini Kenilworth ivy  
*Cymbalaria aequitriloba*

Green Carpet, rupturewort  
*Herniaria glabra ‘Green Carpet’*

Stonecrop  
*Sedum sp.*

Baby tears  
*Soleirolia soleirolii*

White creeping thyme  
*Thymus serpyllum ‘Albus’*

Red creeping thyme  
*Thymus serpyllum ‘Coccineum’*

Native ferns  
Native moss

**SHRUBS AND TREES**

Variegated dwarf Japanese maple  
*Acer palmatum ‘Goshiki kotohime’*

California lilac  
*Ceanothus ‘Dark Star’*

Japanese holly  
*Ilex crenata*

Dwarf mountain laurel  
*Kalmia latifolia ‘Elf’*

Jacqueline Hillier dwarf elm  
*Ulmus x hollandica ‘Jacqueline Hillier’*

**CONIFERS**

High alpine fir  
*Abies lasiocarpa*

Dwarf Alberta spruce  
*Picea sitchensis ‘Papoose’*

Papoose spruce  
*Picea glauca ‘Conica’*

Baby tears  
*Soleirolia soleirolii*

White creeping thyme  
*Thymus serpyllum ‘Albus’*

Red creeping thyme  
*Thymus serpyllum ‘Coccineum’*

Native ferns  
Native moss
10. Namesake Triple Falls Creek cascades into Moose Pond. The groundcover baby tears fills angles between the rocks, then obscures some.
conduit running from the control panel (housed in the Triple Falls icing facility) to the turnouts. An air hose connected to a compressor in the shed supplies air to the system.

A micro-irrigation system delivers water to the groundcovers and trees. Waterfalls are created by pumping water from a submersible pump in a hidden reservoir to a small receiving pond, which overflows at the top of the stream. A float valve in the main reservoir supplies a small amount of water during operation to replace loss due to evaporation and splash. The receiving pond is hidden beneath a viewing deck, built with the help of my older son, Aaron. The streambed and pond are lined with a rubber pond liner sandwiched between layers of heavy felt. Thin slabs of rock are positioned like shingles in the streambed, concealing the felt.

**Parting thoughts**
The pleasure that Weylin and I take in the TFL&M Co. Railroad certainly includes, but goes well beyond, actually running trains. That’s fun, of course, but we both enjoy the garden, whether trains are running or not. There is a little magic in the scenes that we’ve created and in those we have in mind. In the end, though, the life force of the railroad is the monthly operating session and the gathering of hobbyists, who share our appreciation for a little bit of fantasy in the world.

**About the authors**

Marshall (father) and Weylin (son) are the train fanatics in the Rose family. The others (wife, Betsy; son, Aaron; and daughters, Shannon and Talia) have enthusiastically enjoyed the indoor Christmas layout over the years. Spurred on by Weylin’s fascination with trains at age 10, they decided to see what would happen if they ventured outside.

As an architect and builder, Marshall brought construction experience and an interest in creating places. Weylin brought a fine eye for detail and superior mechanical ability.

Over the years, Weylin’s activities have expanded to include racing R/C cars on a national level, flying R/C helicopters, and downhill ski racing, and mountain biking. Even as Weylin has grown up (now age 20 and a sophomore at Seattle University), he has remained committed to the railroad.

Weylin and Marshall are currently working on a number of structures to complete the farming and industrial scenes, and Weylin is nearing the completion of a scratch-built mining locomotive.

The Roses’ railroad will be open for the upcoming 2010 Tacoma/Seattle Garden Railway Convention.