photography/JOHN ALLEN

THE G&D LINE

PART 1 APPEARED IN DECEMBER 1980 RMC, PART 2 IN FEBRUARY 1981.

Remembering the Gorre & Daphetid

Part 3: Some of the more spectacularly scenicked areas of the HO railroad are examined in detail and the lighting effects—including "black light"—are reviewed/**Jim Findley**

By using a generous chunk of his second layout intact, and with the main yard at Great Divide functioning satisfactorily, the third and last edition of the Gorre & Daphetid became operational in fairly short order. This allowed—in fact, mandated—the next priority in building the legendary final layout: the installation of trackwork and basic scenery around most of the room as far as Port, the halfway point on the railroad. The major areas involved were the north wall and the Squawbottom section with its immediate environs, including Scalp Mountain (see Fig. 1.13 in December 1980 RMC). Work progressed at an admirable pace and was still up to the high standards John had established for his layout.

Fig. 3.6 was taken of most of the north wall looking across the shoulder of Mt. Alexander (Gorre peninsula) early on in the construction and has several points of historical interest. The large mirror used to "open up" the northwest corner is starkly evident at this point—although later it would become so effectively disguised that not many observers were even aware of its existence. Seasoned model railroaders frequently asked about getting into the "other room" to see the rest of the layout.

By and large this whole area was devoted to open country type scenery—but on the G&D open country could be every bit as interesting as more congested urban sections. This was primarily due to the track itself seeming to be alternately either on bridges or in tunnels and yet, despite the fact that there were four levels of main line track along the north wall, at no place did the scene look overly cluttered with tracks. The scenery was built using a sytem that much later became known as hard-shell type construction, even to a sort of first-generation zip texturing that used dyed sawdust. It was here that John first experimented with floor-to-ceiling scenery, and it came about as a result of his blending the wall scenery into the irregular sloping fill at the back (west) end of the basement.

All of the tracks through this area were on grades of at least 3%, although they appear deceptively otherwise. The trackbed was given particular attention to maintain constant grades throughout, and at one point John used a suspended bottle of water with a clear plastic tube to establish known exact elevations around the walls, relying on the physics of water seeking its own level to his advantage in minimizing errors. The results were predictable; the grades were as remarkably constant and of the same high engineering standards as those surveyed with a transit on the prototype.

To demonstrate this fact, a car with free rolling trucks released at Corsa would arrive at Squawbottom some 50 real feet downgrade without appreciatively changing speed once it reached about 60 scale miles per hour, and this included circling Scalp Mountain along the way! Aware of this, his operators were doubtless haunted by the remote possibility of a false uncoupling that would ensure their having to chase wayward cars nearly a mile down the main, a development sure to throw the operations schedule into uncomfortable disarray.

An interesting and little-known fact about the grades on the G&D was the planning for location of the actual ruling (maximum) grades on the main line. If, for example, the grade between Squawbottom and, say, Sowbelly was to be 3%, the first few feet of track out of Squawbottom going uphill would be 3½%. The reasoning for this was that if an operator inadvertently left Squawbottom with more cars than the locomotive could handle, he discovered it almost immediately and could drop cars at Squawbottom before getting well out on the 50 feet or so of track to the next point where he could lighten his consist. This rule applied everywhere on the layout so that if an operator, say on the Andrews Peddler, could clear the Port area by a few feet enroute up to Andrews, he could relax a little knowing that he owned the grade all the way to Andrews.

An exception that might upset this equation was when a locomotive was working on the thin edge of maximum capacity. In that case, poor judgment in handling the throttle could cause the engine to lose its footing. It was generally concluded that if a locomotive lost traction halfway between towns, it was due to operator error and the hogger was to blame. The hapless operator could be sure that his miscue had not escaped the baleful eye of the super, and a safe and prudent practice might have been to keep the consist safely below the rated tractive effort of the engine. Alas, this was not always possible on the G&D—not on a railroad with the deeply ingrained notion that moving cars translated into higher revenues.

Probably the most famous spot along the north wall was at Frenchman's Gulch in the center of Fig. 3.1. This area became well known through a foldout that appeared in *Model Railroader* and which was used as an illustration in Bill McClanahan's standard text on scenery. The effectiveness of John's scenery was due as much to his thoughtful observation of the prototype as to his innate artistic talents. With the relatively primitive materials available at the time, he created some awsomely realistic effects simply by paying close attention to details in every location, no matter how small. As he once casually observed, the constant reminder that any and all mini-scenes might fall under the relentless eye of his camera kept him "honest". Figs. 3.4 and 3.5 show the maestro's work and illustrate graphically his rule for keeping all of the elements in context with each other.

The majestic floor-to-ceiling scenery used on the third layout had been heralded with some of his earlier work on the second railroad; Fig. 3.10 is proof enough of this. The painting in the background was on the door into the second layout (Fig. 2.15 in February 1981 RMC) and was a precursor of better things to come when more room became available. If final proof is needed on the cogency of his theories, study Fig. 3.2, a closer view of Frenchman's Gulch, showing the north wall going into the corner. For fun, compare it with the area as it appeared in Fig. 3.7.

To digress for a moment: At the time John first got into model railroading, the selection of coupler types was pretty thin, those that would operate dependably practically nil. He opted for Baker couplers, a type no longer manufactured, sacrificing something in ap-

One of the most quickly recognized areas of the last Gorre & Daphetid was Frenchman's Gulch, shown in Fig. 3.2 and the background of Fig. 3.1. The small original G&D layout was blended in just to the right of the towering mountain shown at the right edge of Fig. 3.1. Not yet complete was the high girder bridge over Devil's Gulch to Scalp, visible at the left in both views. The bridge which connected this span to Scalp (a flat-topped rock) is shown at top of Fig. 1.14 in December 1980 RMC (part 1)—as is John Allen's love for bridges.

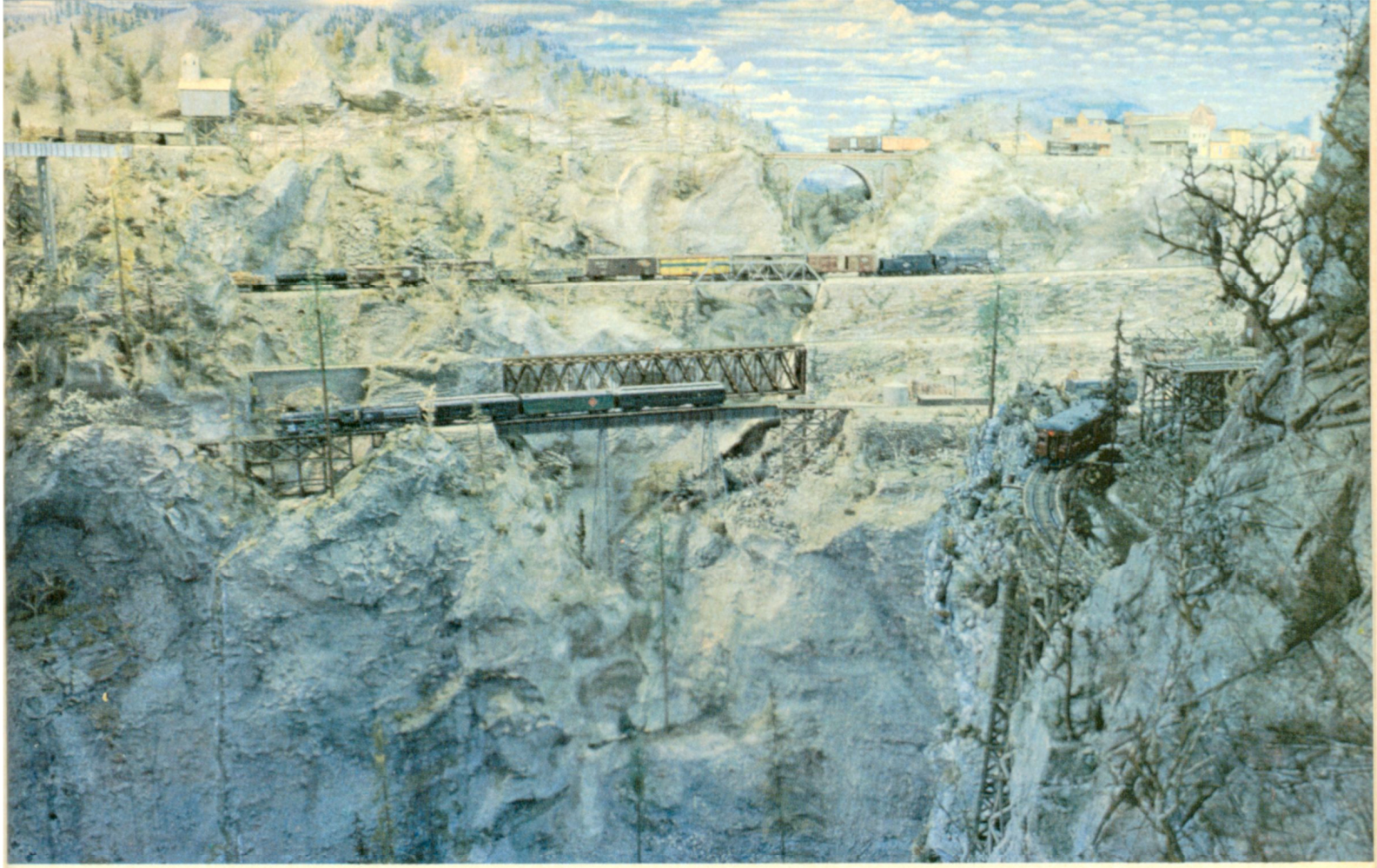
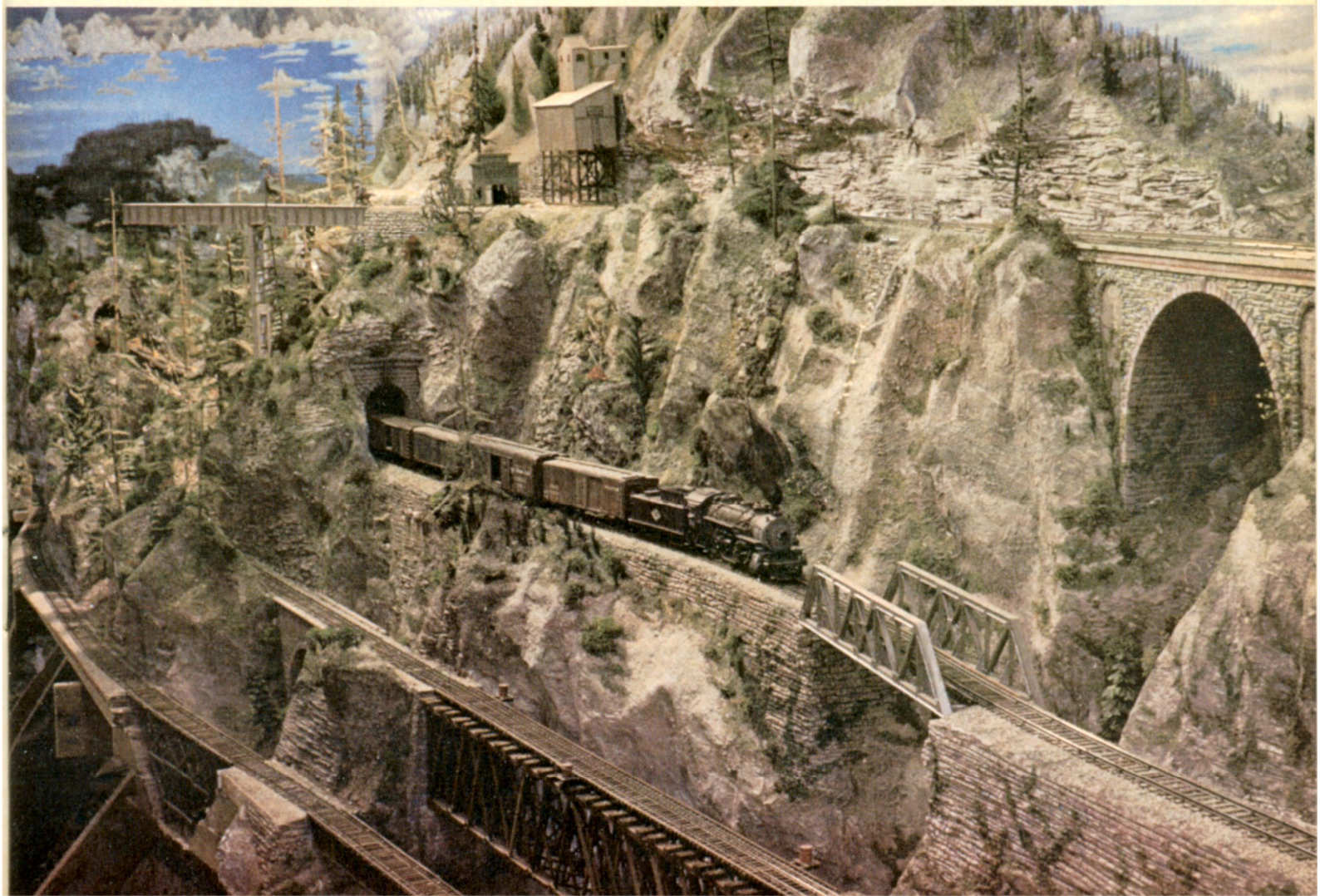


Fig. 3.1 ▲

Fig. 3.2 ▼



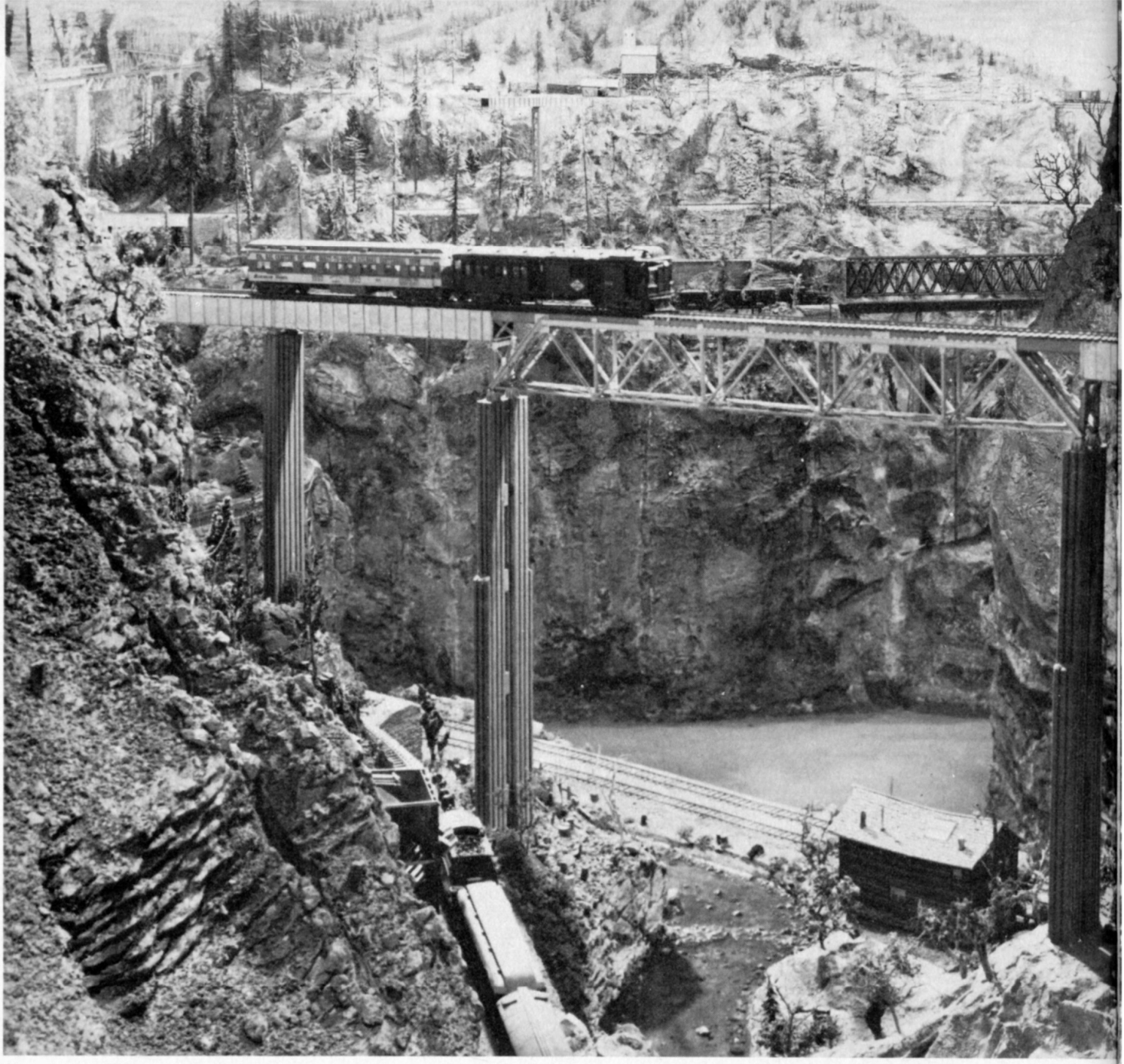


Fig. 3.3

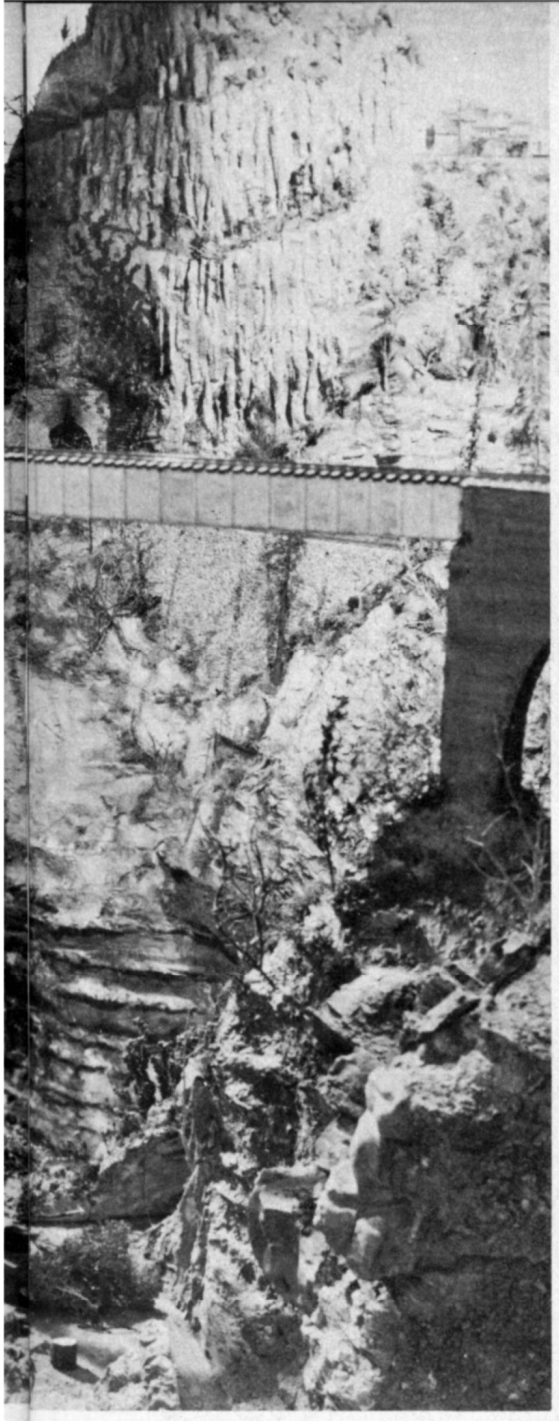
pearance for the improved performance he got with some of his modifications. Occasionally, he would remark philosophically that these couplers allowed for closer spacing between cars, and this to a degree hid the esthetic shortcomings.

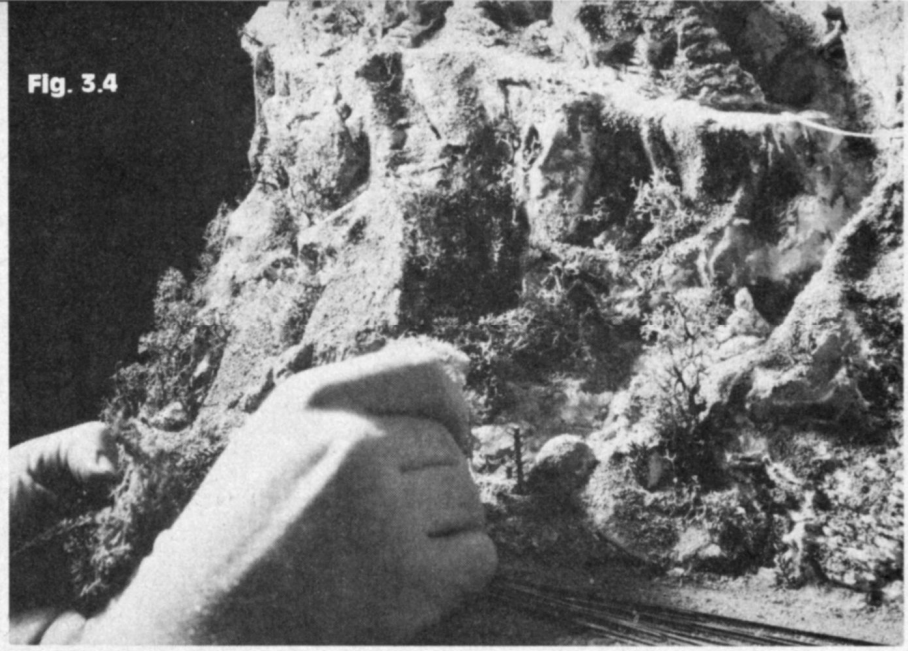
With the changes he made, cars could be coupled at extremely slow speeds without the jolt normally accompanying backing onto a car. In discussing the relative merits of various coupler types, he liked to demonstrate how he could pick up a single standing car without moving it at all. This was usually impressive to visitors, especially those who failed to realize that this pre-supposed a finely tuned engine and a throttle that would allow it to creep. By the time improved couplers like Kadee's came on the market, the G&D already had so much equipment in service with the Bakers that it would have been both impractical and improvident to make a wholesale changeover. Improvident John was not.

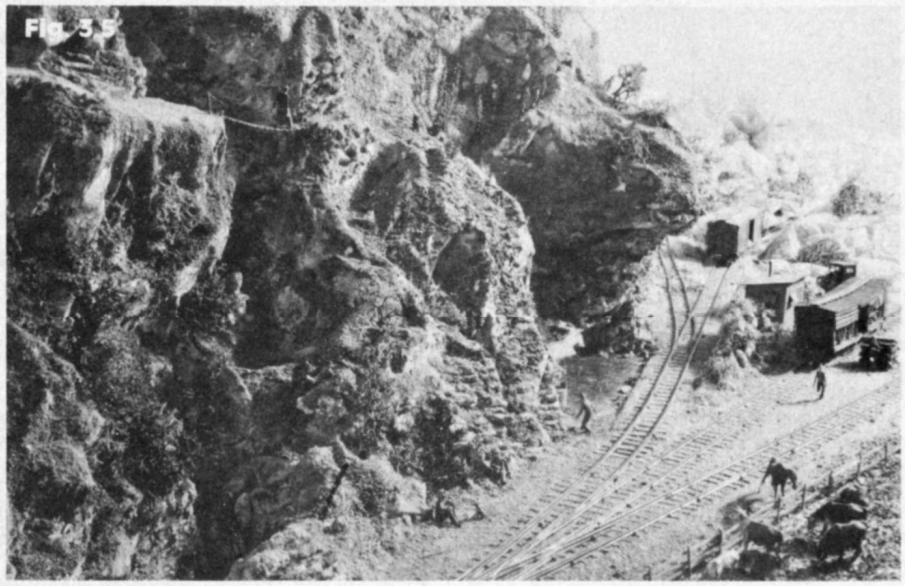
Frugal by nature, John used solenoids salvaged from a couple of junked pinball machines to actuate his remotely-controlled uncoupling ramps. Ramps on adjacent tracks shared a solenoid. He made sure that a number of other components of those pinball machines also found their way onto the G&D: light bulbs, terminal strips, transformers, relays and the like. Even the steel balls were used in his infamous "hotbox" cars (similar to Walthers' impact detection car). The car indicated with a light when it had been mishandled by causing the ball to complete a circuit when jerked or bumped with undue vigor. A callous operator trying to keep to a demanding schedule could forestall this tell-tale indication of his carelessness by surreptiously removing the ball from its raceway inside the car at the outset of an operating session. In fact, rumor has it that an absent-minded visitor once mailed one of the balls back to John from Korea (ahem!) Far-fetched stories like that proliferated among the regular G&D operators.

Getting back to the scenery and referring to Fig. 3.2, you can see that the mirror in that northwest corner became a lot less obvious. The angle of this mirror was particularly critical to meet with all of John's criteria, and the final position was a masterful example of guile. Calling on all of his expertise with lighting from photography, he located the lights in the area so that no shadows, either on the backdrop or on the mirror itself, betrayed its presence. To "erase" the mirror top visually, he used clouds painted partially on a card cutout and partially on the mirror surface. The mirror is unmistakeable in Fig. 3.7, far less evident in Fig. 3.9 and, to most of his unsuspecting visitors, not visible at all.

The impression of size and distance in the area back of Scalp Mountain was the result of several contributing factors in addition to the innovative mirror technique. The fact







What started small quickly grew: Scenic efforts tested on the first two G&Ds, such as blending a variety of hues of dyed sawdust (Figs. 3.4 and 3.5), were applied on a vast scale on the last layout (Fig. 3.3). This view looks toward Frenchman's Gulch against the distant wall from a point near Scalp (refer to Fig. 1.13 in December 1980 RMC). Careful inspection shows the same gas-electric in mirror in left corner and "one-sided" stone arch at right.

that the terrain rose in elevation as it receded in distance certainly helped, and this was improved by the lighting being ever so subtly less than standard for the layout to add to the illusion of distance. Fig. 3.12 shows the whole alcove area including Scalp Mountain in the foreground—an area of some 90 square feet total. In the alcove itself, there is only one town—Akin in the upper left corner—and it was far enough back to allow for far less intensive detailing. The buildings in Akin ranged from full HO scale down to only 40% of scale back near the backdrop. There was even a simulated spur track in the town with undersize boxcars and reefers spotted at two-dimensional cardstock industries.

This Akin area could be seen in the large mirror just mentioned, but the combination of increased distance in the mirror image and the flip-flopped location of the buildings made it rare for an observer to recognize that his eyes were playing him false. With tongue in cheek, John named the illusory town Nika (Akin backwards) and added it to at least one version of his trackplan that appeared in print. It took a long and careful examination of the layout to even begin to establish the line between the real and the specious. After being fooled a couple of times, the visitor was on guard, prompting him to identify something that was real as being another feat of legerdemain.

The lighting on the G&D deserves more than casual mention. John was a professional photographer and paid particular attention to this important aspect of his layout. His approach was comprehensive with an artful mix of all the facets that help in displaying his, or any other, layout to best advantage.

The main lighting was with incandescents: a mixture of everyday household types and those with built-in reflectors. He liked the warm, mellow light afforded by incandescents and used the reflector flood types to highlight particular features such as the roundhouse/turntable complex. There was a cardboard free-form valance that came down from the ceiling a foot or so and generally followed the aisleways to block direct light from the eyes of visitors and operators. The short valance served nicely with his relatively low ceiling (about seven feet). This lower than usual ceiling also permitted less wattage to be used. The careful placement of lights and the valance went almost unnoticed and bore out one of his axioms: If you have something you want to be unobtrusive yet cannot hide completely, distract attention from it. The Gorre & Daphetid was more than enough to distract most people.

John always contended that lighting was a field that was either overlooked or badly abused, and it nettled his innate showmanship to see an otherwise well-executed layout that was poorly lighted. One point he emphasized—and unfailingly observed

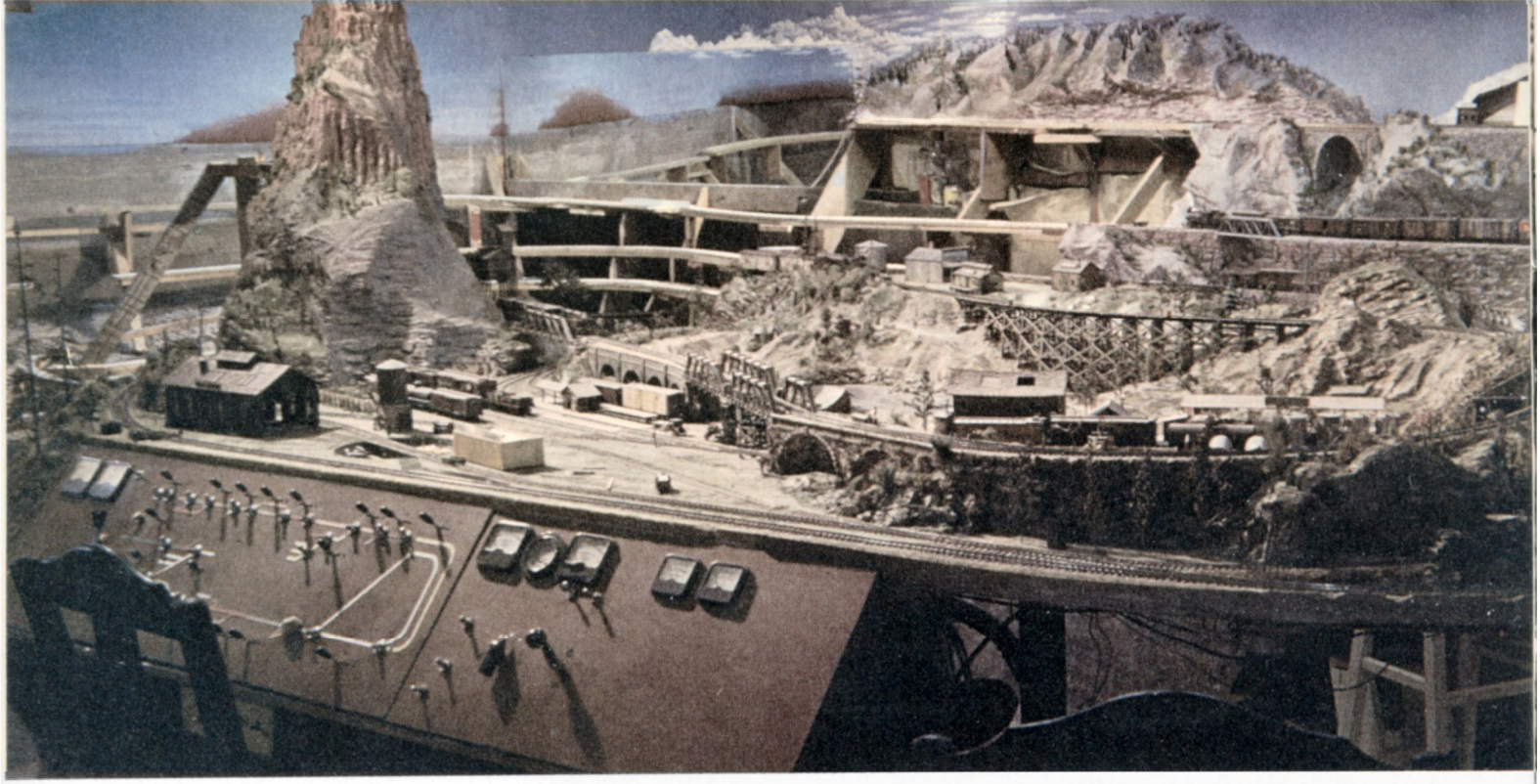
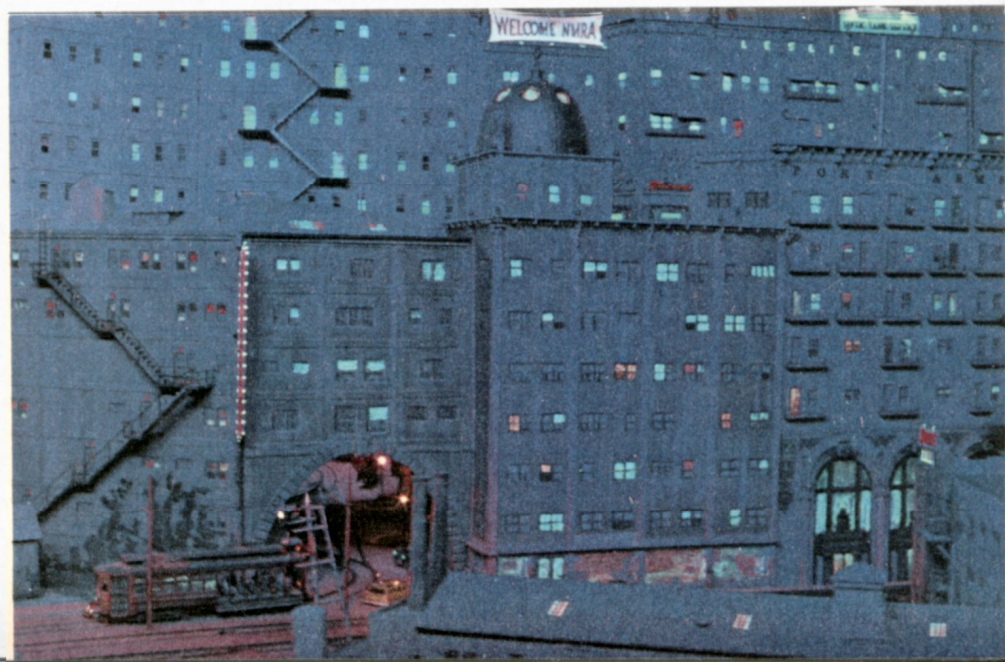


Fig. 3.6 ▲

Quiz time: Find the mirror in Fig. 3.9 (**opposite page**). Don't cheat by looking at Figs. 3.6 and 3.7, which show the same mirror being installed. The right edge of the mirror is hard to find, but the top is marked by a line of flat-bottomed cumulus clouds. The left edge is just above the first boxcar behind the 2-6-6-2. The town and period passenger train are mirror images of models actually to the left of this photo. The trackplan which appeared in part 1 of this series (Fig. 1.13 in December 1980 RMC) clearly shows this mirror in the upper left-hand corner. Also evident in Fig. 3.6 is the original small Gorre & Daphetid layout in the foreground (the plan was shown in Fig. 1.8, part 1); one can assume towering Mt. Alexander hides a support post. Some sense of the "black light" night effects can be obtained from Fig. 3.8.

Fig. 3.7 ▼

Fig. 3.8 ▼



himself—was that there should never be shadows from structures or from anything else falling on a backdrop. This ruined the overall effect completely in his photographer's eyes.

Lighting was by no means confined to the room lights—nor should it be on any layout. The trains themselves were included where the results repaid the time and effort involved. In the early fifties, the traditional method of installing headlights in locomotives was to wire a 16 to 18-volt bulb across the motor brushes and learn to live with the variations in brightness as the speed of the train increased or decreased. John used this system in his early attempts, improving on the method by arranging for the bulb to provide a soft glow in the cab. When constant-lighting circuits using the voltage drop across diode(s) were in their experimental stages, he latched onto the idea and made it standard for G&D equipment. Commercial constant-lighting units were not yet available, so he ordered his diodes direct from

Motorola in quantity and sold those he didn't need to friends at cost when they too wanted this for their own locomotives.

He claimed (rightly) that installing his own diodes gave him the option of including a "dim in reverse" capability and allowed for more flexibility in hiding the diodes in the engines. This resulted in those diodes ending up in some unlikely locations, since the boiler itself was ruled out (added weight took up this space). The three-diode circuit he liked to use could be found between the cylinders, in the frame, in the cab roof and just about anywhere else he found a suitable cranny. The location varied from one locomotive to the next, depending upon circumstances.

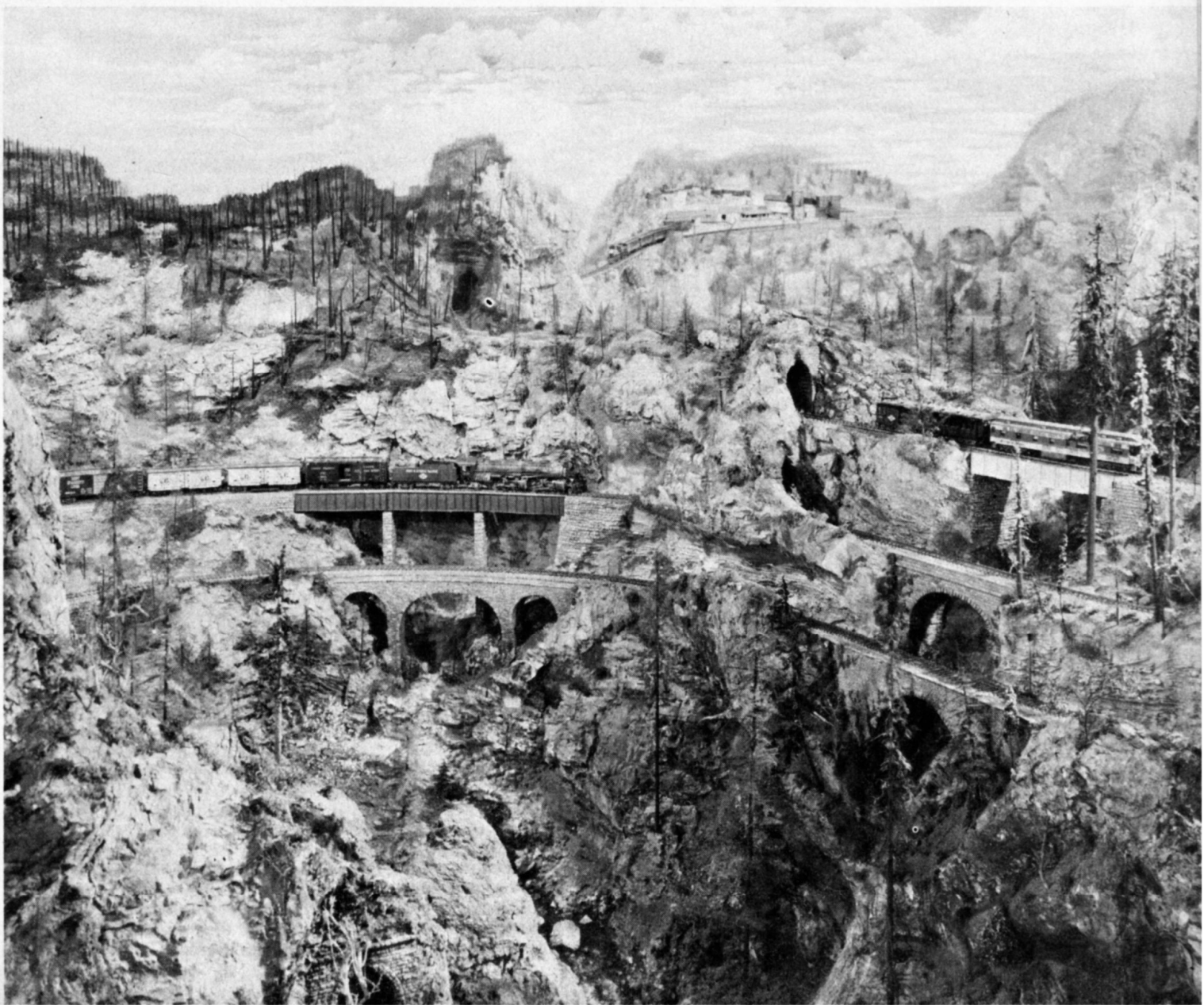
With the diodes installed and available, it was a short step to wiring a firebox light. For this he used a 1.5-volt GOW (grain-of-wheat) bulb that had been painted red/orange (fingernail polish) and wired in parallel with the bulb used for the headlight. Like the headlight, it was brighter running forward than it was in reverse but, as he said, it beat no light at all.

Cabooses were generally lighted with 16 to 18-volt bulbs that used the track voltage and suffered from the same drawback of varying intensity as did those early headlights. He never did accept their lamentable tendency to flicker when contact was lost momentarily, and would have been the first to applaud the later circuitry that used a nickel-cadmium battery recharged by the rail voltage which eliminated the flicker once and for all.

From the very first, John was fascinated with night scenes and from the start incorporated into his planning and construction provisions for night lighting. Overall layout lighting included strategically placed blue bulbs on a separate circuit to simulate moonlight, but the transition from night to day was unrealistically abrupt. (He got away from this later, as we'll get to shortly.) Lights in the various buildings varied from a single bulb in a small structure such as a watchman's shanty up to elaborate arrangements of up to 20 bulbs in larger buildings such as his roundhouse. Nor did he neglect outside lights in a scene. With uncommon logic he knew that streetlights and lights outdoors were not only prototypical, but were also much more obvious to the viewer's eye. These outside lights were particularly effective in a lumber yard at Gorre, around a mine tipple at Squawbottom and along Railroad Street at Great Divide. There was even consideration given to balancing the lights by pretesting them at the workbench, since brightness varies between otherwise identical bulbs. The idea of a dim bulb at one end of a station platform and a bright bulb at the other end upset John's highly-developed sense of the "rightness" of things.

Wiring for all these buildings lights was interesting if only for the thorough planning that went into it. When the G&D was first started and cables were being laid to the several areas, John made provisions for light power. Recognizing the visual effect he had in mind, he used a surplus transformer with multiple secondary taps to make available a wide assortment of voltages at such places as Andrews, Gorre, Squawbottom, Great Divide, etc. This was of enormous value, since it allowed the increase or decrease in bulb in-

Fig. 3.9



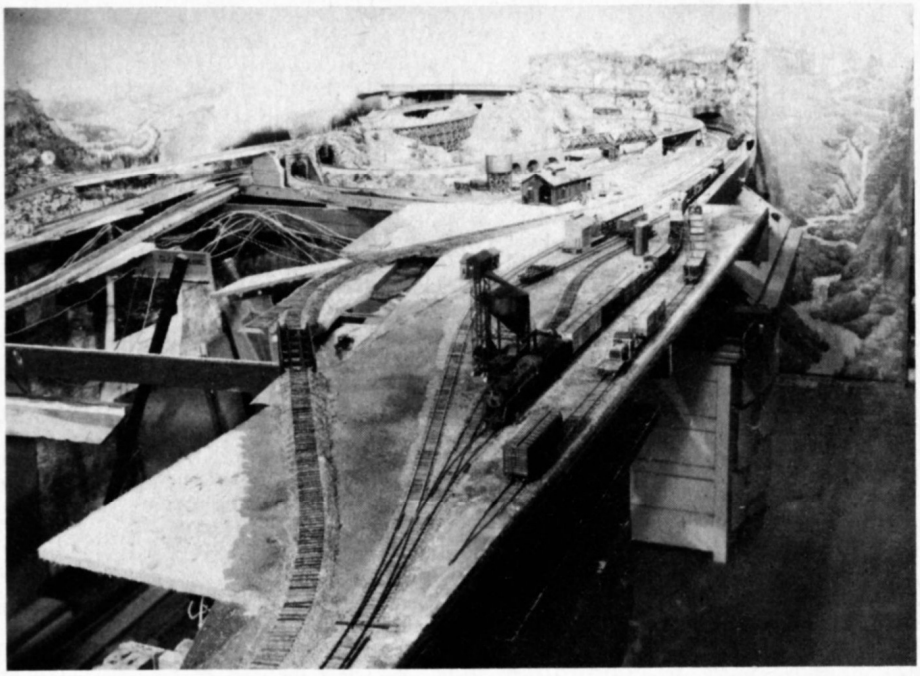


Fig. 3.10

Fig. 3.11

The impressive floor-to-ceiling scenery that became famous on the third and last G&D (hinted at in Fig. 3.12 as a special gas-electric-powered train crosses Texas Draw just before arriving in Akin) was developed as a concept on the second layout. Note the painting which reaches to the floor at the right of Fig. 3.10 in this view of the second layout (its trackplan, Fig. 2.15, was shown in February 1981 RMC). A later view of the same area (Fig. 3.11) shows how the scenery was developed. The original G&D layout is clearly visible in the background of Figs. 3.10 and 3.11. What appears to be the gold spike monument is evident near the switch points in Fig. 3.11, as is the depth added by continuous backdrop.

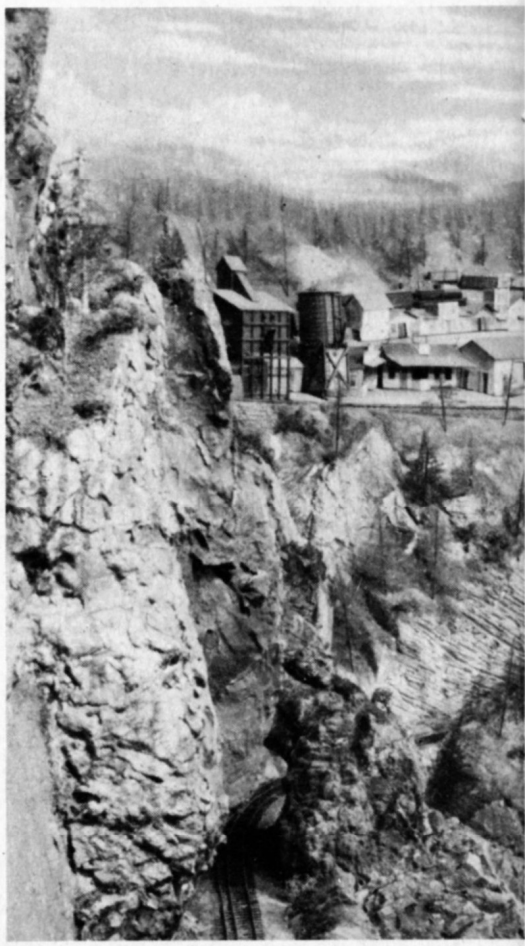


Fig. 3.12

tensity for a particular installation by as little as two volts with almost no hassle. Line losses due to the length of the run or poorly soldered joint never were much of a problem.

In this basic preparatory wiring, he also made sure he had a.c. of several voltages available in major areas for applications where animation necessitated using an a.c. motor. In all the years of construction, it was almost never necessary to run additional wiring from his base power transformers out to some point on the layout. He claimed that this tendency to plan long range had also kept him out of politics.

As the railroad grew and whole new areas were completed—or nearing completion—the number of lights needed grew at a great rate. The time needed for lighting the layout became disproportionate, and the expense appalled his inherent frugality. This sent his inquisitive mind off in search of a shortcut, his inquisitiveness honed considerably by the prospect of buying bulbs by the gross for some apartment and office buildings he had in mind to light. The answer came in the form of fluorescent paint and ultra-violet lights—a somewhat radically new approach at that time. After extensive testing, he arrived at a paint mixture that looked right under incancescent lights and also produced just the right effect when viewed under the "black light" bulbs. He concocted several mixtures, to be exact, since he wanted varying colors under the room lights. By painting only the "glass" panes, he arrived at some

startlingly realistic results, such as those seen in Fig. 3.8—although the picture is not nearly as dramatic as the actual scene. He mastered the technique of mixing incandescents and ultra-violet lights to increase the impact, and the savings in time must have gladdened his heart—just as the financial economy must have set his feet to dancing.

The major drawback to using ultra-violet lighting effects was that most cardstock, apparently due to the starch content, also glowed to a disconcerting extent under the UVs, necessitating a touch-up painting program to overcome this objectionable side effect. True to form, this led to several additional discoveries and more sophisticated applications such as using unpainted card with only inked lines to light an elevator shaft in the side of a building, or having a signboard appear lighted. It was a whole new challenge that kept him busy for days on end while resulting in some unique innovations.

The black light scheme was used primarily in three areas: Port, Great Divide and Andrews, areas where the concentration of buildings and the number of windows allowed maximum advantage for the technique. In his experiments with this new (to model railroading, at least) approach, he expanded its applications to include the circles of light spilling on the ground or street outside doorways and windows and the pattern of light from automobile headlights, with the light attenuating realistically with the distance from the "source." There was the artistic dappling of light on figures under overhead lights, red aircraft warning lights on tall structures, navigation lights on the shipping at Port. His ideas thus developed far beyond the original intent, but that was true of almost everything that caught his interest; inventiveness just came naturally to the man.

With so many lighting effects, it was inevitable that John's consummate showmanship would orchestrate all of it into a reasonable duplication of nature's sequence of day to night and back to day again. To do this, he located one of the large transformers used in theaters to dim the house lights and wired it to the main lighting on the layout. He geared a motor to it that made the transition from full-day to full-dark cover a period of about eight minutes. The blue night lights turned on automatically just at dusk so there was a gradual, almost imperceptible change to soft moonlight when the incandescent "day" lights were fully off.

Dramatic as the effect was, it was only part of the show. Attached to the shaft of the variable transformer was a wooden disc some two feet in diameter with concentric arcs (aluminum) of varying length. These were contacted by individual wipers that turned on building and outside lights in a carefully pre-determined order. With perhaps a dozen separate possibilities built into the ring/wiper circuitry, John wired the building lights and lights outside them to turn on in what appeared to be random sequence. Lights in less well lighted locations came on first, and street lights came on last. Although a single contact ring might turn on the lights in a dozen places, the lights were so scattered on the railroad that the effect was muted. The entire transformation from day to night (or vice versa) was so slow and deliberate that a visitor was usually unaware of what was happening until the whole process was well underway. Once that realization came, the effect could be measured in the gradual hush that fell over the room.

This bewitching light show was not just to entertain visitors. At least once during an operating session, the whole sequence from night to day and back again became an expected ritual. Each of the operators kept a penlight handy at his position for reading the schedule and car destination tabs on top of the cars. Night on the G&D in no way interfered with scheduled operations, and the hands of the master clock ran inexorably on.

That brings us to another short pause in our examination of the Gorre & Daphetid. If it seems that undue emphasis has been given to lighting, it is a reflection to the importance John felt this aspect of model railroading deserved. In the June RMC, we'll discuss the Gorre & Daphetid's locomotives and the modifications John made on them to have them meet certain criteria. We also plan to look at his use of real water on the layout and visit with his bridge-and-buildings section.