

# Choices:

Looking back at 20 years on the

# Yosemite Valley

By Jack Burgess  
Photos by Lou Sassi



Despite some glitches, careful planning paid off in a highly satisfying HO layout

**I**n 1981 I came home from the lumberyard with the first load of material for a new layout to be based on the Yosemite Valley RR. Now, after nearly 20 years of effort and thousands of hours of enjoyment, the layout appears generally complete to the casual visitor, with nearly all of the scenery complete, three-quarters of the buildings finished, and enough equipment built to run realistic operating sessions.

While many layouts get rebuilt several times before reaching age 20, my YVRR has fulfilled all of my expectations. It may therefore be worthwhile to look back at some of the choices I made.



### Modeling a prototype

When I re-entered the hobby as an adult over 30 years ago, I pulled out a California road map and chose an interesting geographical location for a free-lanced railroad. I felt free-lancing would allow me to exercise my creative spirit without needing to make excuses or maintain prototype fidelity. For a while I did just that – painting boxcars bright Caboose Red and flatcars Reefer Yellow, all lettered for the Mad River RR.

However, within a few years I discovered I could derive greater personal satisfaction by building models of specific prototypes. In searching for a real railroad to duplicate, I discovered that the Yosemite Valley RR had all the characteristics I wanted – it was in California, it had some interesting equipment which didn't seem too hard to

replicate, and, most importantly, the two published books on the railroad had a lot of photos to aid in scratch-building structures and equipment.

I set down my goal: "To model the Yosemite Valley RR as it existed in August 1939 as accurately as possible using state-of-the-art techniques and contest-level modeling." Such an earnest goal for a hobby may seem self-destructive, but it has helped me maintain my own personal construction standards and is always kept in mind when choices and compromises must be made.

While prototype modeling (especially to the degree that I practice it) is not for everyone, it has been one of the factors in maintaining my interest the past 25 years. Poring through old files and records, studying photos, talking to past

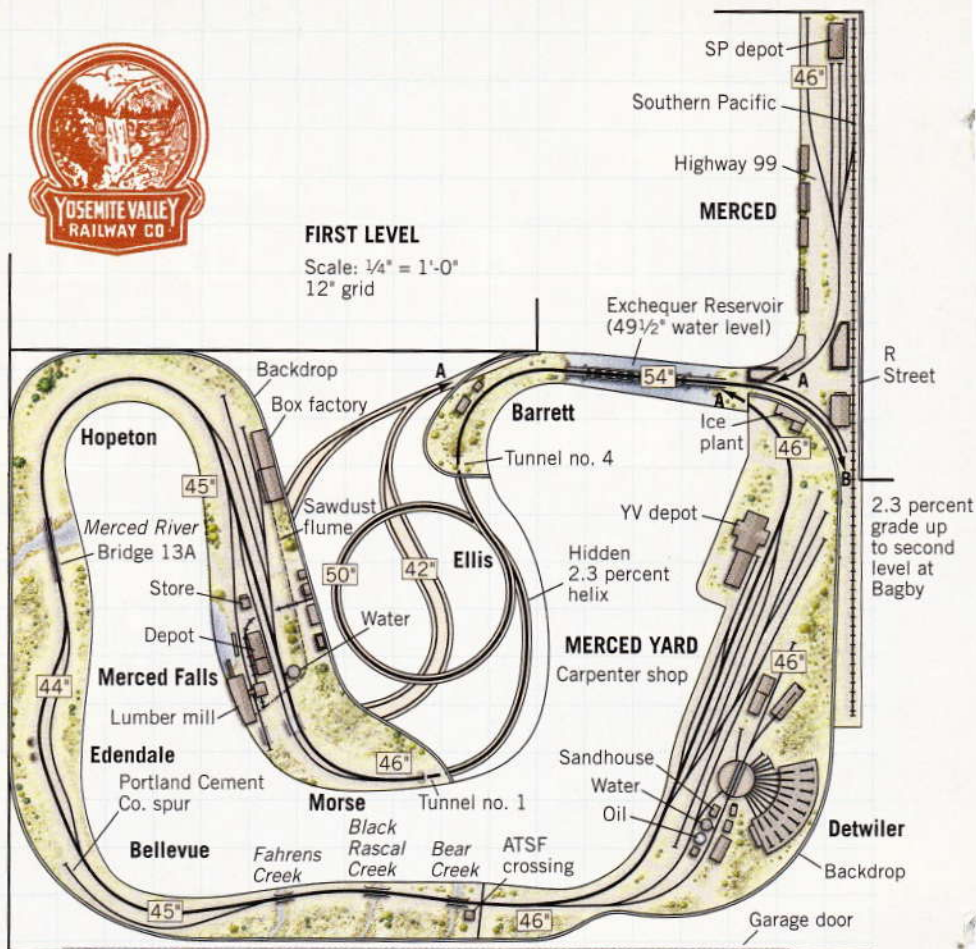
▲ 1. Engine no. 29, one of the Yosemite Valley's six 2-6-0 Moguls, arrives at El Portal, gateway to Yosemite National Park. The hotel is based on the real thing, as are all details on this carefully researched multi-deck layout set in August 1939.

YV employees, and researching how the railroad operated long ago have been rewarding experiences.

Many modelers prefer free-lancing or prototype free-lancing, but I always encourage considering a specific prototype instead. Accurately duplicating a real structure or freight car to the best of your ability and knowledge is very rewarding. Picking a specific era or, better yet, year to model makes history come alive as you begin paying more attention to clothing styles, business signs, and the hundreds of other details

## Layout at a glance

**Name of railroad:** Yosemite Valley RR  
**Scale:** HO (1:87)  
**Size:** 20 x 20 feet  
**Prototype:** Yosemite Valley RR  
**Locale:** California's San Joaquin Valley and Merced River Canyon  
**Period:** August 1939  
**Layout style:** multideck along the walls with peninsula  
**Length of mainline run:** 112 feet  
**Layout heights:** 44" at Merced to 61" at El Portal (6" stepped floor at El Portal results in height of 55" there); 82" at Camp 17  
**Benchwork:** open grid  
**Roadbed:** 1/2" Homasote over 1/2" plywood  
**Track:** handlaid code 70 with code 83 on SP and AT&SF mains and code 55 on Edendale siding  
**Turnout minimums:** no. 5, all controlled with slow-action switch motors  
**Minimum curve radius:** 22" with spiral easements  
**Maximum grade:** 2.3 percent  
**Scenery construction:** paper towels dipped in plaster and draped on screenwire  
**Backdrop:** handpainted on 1/8" Masonite hardboard  
**Control:** System One DCC with SoundTraxx decoders



ILLUSTRATIONS BY RICK JOHNSON AND ELISABETH ROWAN

related to specific periods. You may think that no one else cares if U. S. Post Office mailboxes were once olive green rather than patriotic blue, but attention to these little details makes the hobby even more satisfying.

## Planning

I'm a civil engineer, so it should come as no surprise that I did some relatively detailed track planning before beginning actual construction of my railroad, especially as I intended this to be my "ultimate" layout. I tested a proposed final design by fabricating a 3-D model, then remedied the problems exposed. A final track plan was then accurately drawn at 1" scale to be sure that everything would fit and to use as a guide during construction.

Partly as a result of this careful planning, few changes have been made from the original plan, which was published in the August 1987 MR. The only major change was enlarging and rebuilding El Portal when more space became available after I moved my modeling shop from the layout room to a spare bedroom several years ago. (I described this change in the 1998 issue of *Model Railroad Planning*, the annual layout design

magazine published by Kalmbach Publishing Co.) Also I deleted the turntable planned for Bagby (it wasn't used by the railroad in 1939 anyway), and made a minor change in the siding at Emory.

Although additional information sources have surfaced since I originally drew up my track plan, prototype photos and maps were used to develop all of the yards and sidings to ensure they closely duplicated the actual YV. This effort has paid off in a number of ways.

First, I have been able to replicate prototype operations in formal operating sessions which were finally started years after all of the track was in place. More importantly, copying the prototype was much easier than developing well-designed yards from scratch. Unless a designer has a good understanding of prototype yard design, track changes after operations have commenced are almost inevitable.

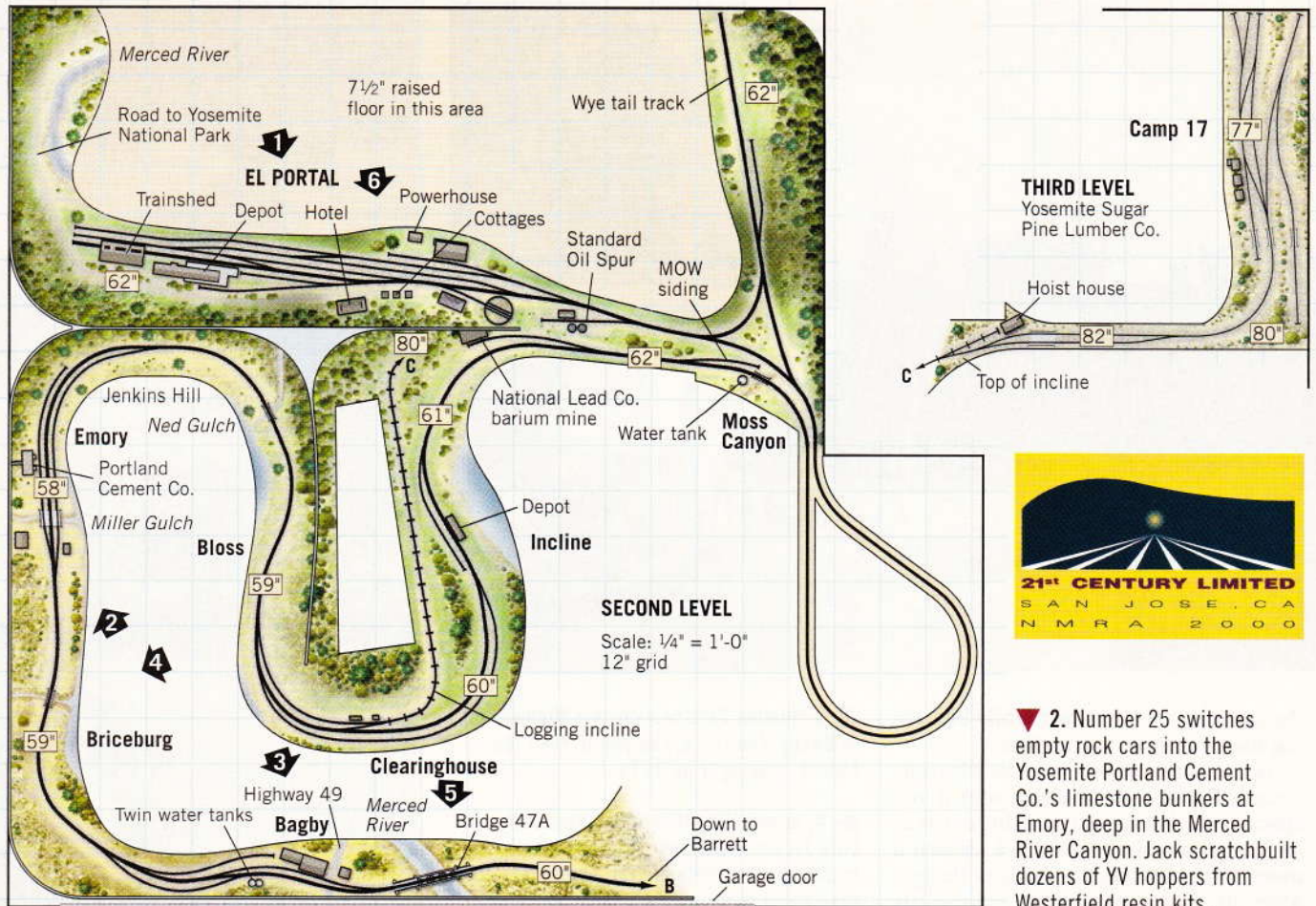
One area of my track planning which proved disappointing was that I didn't allow sufficient space for future buildings. When free-lancing, selecting structures is often simply a matter of finding buildings which generally fit the era, style, pocketbook, and space available after basic scenery is complete. How-

ever, when developing a track plan based on a specific prototype, scale building footprints need to be carefully considered during initial design.

While I included in my final track plan representations of all the prototype buildings I knew I eventually wanted, I really didn't pay that much attention to their actual sizes until years later. Unfortunately, I discovered I didn't have enough room to include certain buildings without either compromising their size or extending the layout. Where I couldn't expand the layout without encroaching on essential aisle space, I resorted to some building compression. It's not that noticeable, but I wish that I had given this potential problem more thought.

## Choices

Model railroading is a hobby of choices - from scale and gauge to era, equipment, and geographic setting. Early in the design phase, I decided on a multideck approach. This decision was driven by the limited space available (20 x 20 feet) and the desire to include a relatively long main line with enough track between towns and switching opportunities to avoid having





the caboose in one town while switching the next town up the line.

In the early 1980s, multideck layouts were a fairly new concept, and if my space had been two or three times larger I probably would have chosen a more conventional, single-deck design. After all, multideck layouts are slightly more difficult to design and construct, and some visitors or operators will invariably find one level too high or another too low.

It's also important to remember that each aisle must serve twice the amount of layout. Some space problems can be avoided by increasing aisle widths where possible and ensuring that major yards are offset between levels, but still operating crews must be able to pass each other at various times and places.

My aisles are narrow in some spots, limiting the number of operators to a maximum of five or so. Since the YV had only five freight engines (all 2-6-0s) and a couple of 4-4-0s which were only used occasionally during the summer, the limit on operators is not too serious. However, it also eliminates two-person crews (such as an engineer and a brakeman or conductor). If you plan to run a lot of trains simultaneously, wide aisles are essential.

Some modelers also express concern about the visual clutter of a multideck layout and argue that it can be distracting to viewers. I (and most visitors) have not found this a problem, especially since I varied the deck widths.

Having a free-flowing front fascia also helps. I find that most visitors and

▲ 3. Number 28 slowly crosses Highway 49 in Bagby. The signs, gas pump, even the bicycle, look right for 1939.

▶ 4. In modeling this bridge east of Briceburg Jack followed the prototype exactly. The resulting abutments are far more interesting than those most modelers would come up with on their own – and you know they're engineered right!

operators concentrate on a single deck at a time rather than scan from deck to deck like a supermarket shopper. The newer mushroom layout concept (decks above one another viewable only individually and from opposite sides) eliminates this concern but generally requires a higher ceiling than I have.

The two main levels on my layout are connected by a single-turn helix hidden in the center peninsula and a climbing grade hidden behind the yards at Merced, both with grades of 2.3 percent. Modeling a prototype which had only small motive power (especially steam) and incorporating a ruling grade of 2.3 percent can quickly and severely reduce train lengths.

However, selecting a ruling grade is interrelated with other choices. While I could have reduced my ruling grade by lengthening the run, this would have resulted in the train being out of view in the helix for a longer time.

In addition, longer trains require longer passing sidings – it does little good to be able to run 15 to 18 car trains if your passing sidings have a capacity of only a dozen cars.



But then longer passing sidings reduce the apparent length of the main line between towns and switching locations and will also require larger main yards to build up and accommodate the longer trains. And so it goes.

The combination of choices on my layout limits freight trains with a single 2-6-0 to five to six cars, depending on how freely the trucks roll. However, the passing sidings are also relatively short, resulting in fairly compact towns along the line.

I still occasionally run longer trains downhill from El Portal to Merced. However, since they are longer than most of the available passing tracks, any meets with uphill trains arriving first are accommodated with a saw-by maneuver, which simply adds to the operating enjoyment.



### **Benchwork, track, and other choices**

Benchwork design is another choice every layout builder must face. L-girder benchwork can be the best when making drastic design changes after construction begins and is also great for the builder without access to a power table saw or miter saw.

However, I chose traditional open-grid benchwork because I not only had the necessary power tools, but felt that it provides stronger, more rigid benchwork (important if the layout may be moved in the future in large pieces). I also feel that grid benchwork can provide a more secure attachment for the front fascia.

Modelers have a wide range of choices when it comes to track, even more now than when I started my layout. Flextrack is now available in code

70, code 83, and code 100 and is also a lot more realistic than that available 20 years ago. However, I chose to handlay all my track.

I had also handlaid track on my previous layouts, although that choice was primarily financial – 20 dollars' worth of track materials could provide a week's worth of hobby time, while the same 20 dollars' worth of flextrack and prefabricated turnouts could be laid in a single night.

My choice was thus based on previous experiences and the fact that I had never before used flextrack. Handlaying track can be very relaxing and if the time required is no problem, it may still be the preferred choice for many modelers. However, I really have to wonder if I would handlay if I were going to start over today.

### **Scenery**

From the beginning, I wanted to duplicate the distinct landforms and vegetation along the prototype. To establish the forms I draped plaster-soaked paper towels over screen wire. Cutting and tacking the screen takes more time than other techniques (such as using crumbled newspaper or a web of cardboard), but in many areas I am duplicating actual geographical features such as fills and cuts, and the screen's manageability makes it easy to match these features. Carving stacked layers of foam insulation board can also provide this degree of control, but may require additional work constructing supports for the foam.

Once the plaster shell was in place, I built the rest of the scenery with established techniques, including plaster



rock castings and plain old dirt bonded in place with diluted white glue.

### Control and operations

Essential to satisfying operations is an appropriate control system. It was obvious to me that walkaround, plug-in throttles would maximize the advantages of my linear track plan.

Initially I used memory walkaround throttles with a progressive cab control system, employing block occupancy detectors to automatically keep each throttle connected to the correct block. While this system required considerable wiring, it eliminated many of the non-prototype functions (such as selecting blocks with toggle switches) associated with cab control systems.

While this system worked well, operations were still constrained by the

inherent limitations of blocks, chief among them being that engines in the same block can't be controlled independently. Complex operations such as saw-bys and multiple switchers working the same yard were difficult and puzzled inexperienced operators

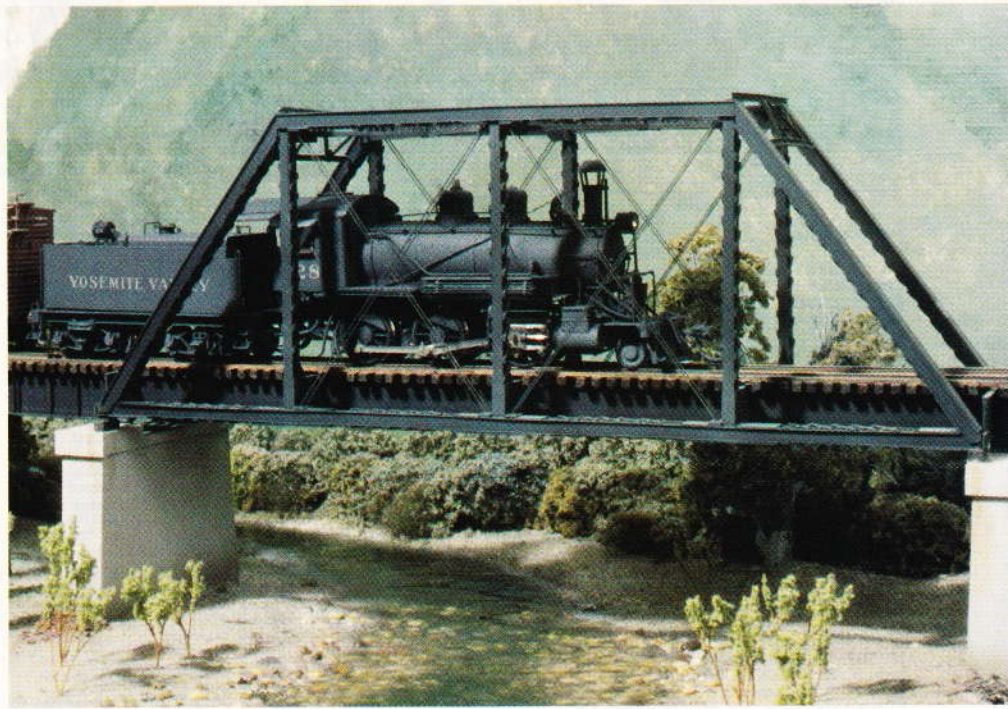
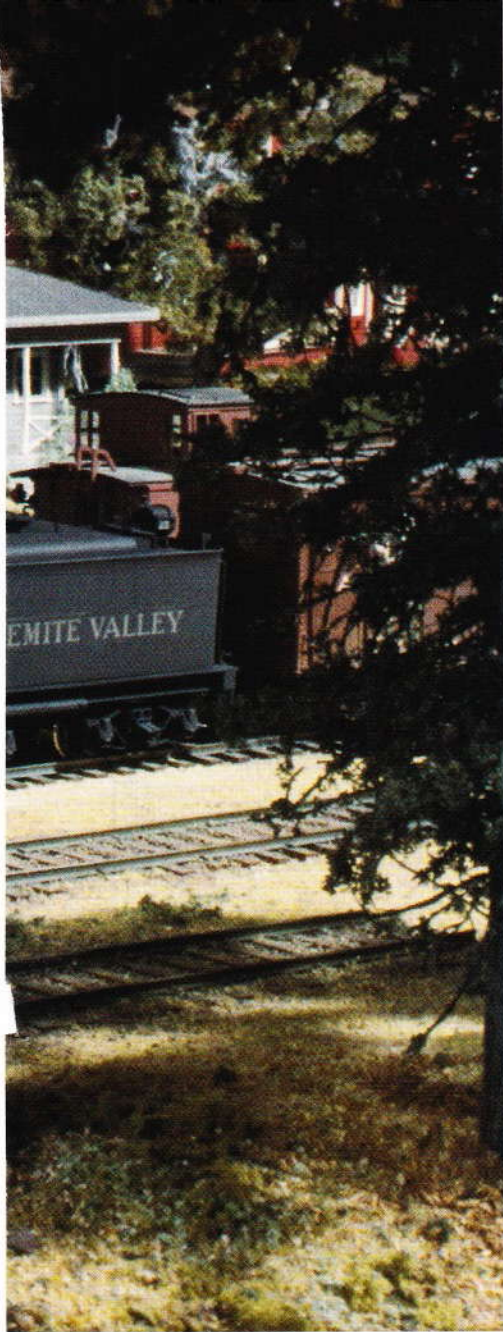
Meanwhile I was keeping an eye on the new DCC (Digital Command Control) systems. Having experimented with onboard sound systems such as Modeltronics back in the 1970s, I also wanted sound-equipped locomotives as part of the conversion. I therefore waited until SoundTraxx released its sound-equipped DCC decoders, then made the change.

The switch to DCC has been very rewarding. Operations are fluid and responsive to the needs of the train engineers. The timetable includes a

three-way meet with a saw-by, a fascinating exercise which would have been nearly impossible without DCC.

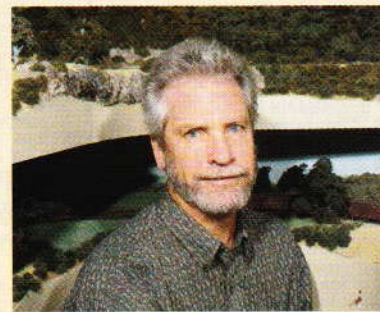
Sound also adds a whole new level of prototype fidelity – once you experience it you will not want to go back to locomotives without it. Some operators without experience on a layout running numerous sound-equipped locomotives simultaneously may be concerned about the distraction of the overall sound volume, but I have not found this to be a problem. The volume on the decoders is adjustable, enabling me to keep the overall volume relatively low.

The YV doesn't have a regular crew. Instead, I like to rotate through a long list of interested fans, an approach requiring that operations be logical and easy to understand. Toward this end I use copies of actual YV forms includ-



▲ 5. Approaching the small community of Bagby, engine no. 28 rolls across Bridge 47A spanning the Merced River. The river carved a route for the railroad eons before anyone set foot in California.

◀ 6. Engine no. 27 leaves El Portal in the early morning with the El Portal local. She's headed for Merced, out in the San Joaquin Valley. Those three identical cottages look like quite most comfortable places to stay while visiting Yosemite Park.



### Meet Jack Burgess

Jack has been interested in building models as long as he can remember. A Christmas HO train set inspired the start of a couple of layouts in his youth, but neither got much beyond the benchwork.

He took up the hobby again as an adult in 1965 and built three layouts, two of them small switching railroads, before embarking on his current multideck Yosemite Valley.

Jack's wife, Jacque, shares his interest in trains, and her first garden railroad was featured in the September 1995 MR. Together Jack and Jacque have three children and three granddaughters.

Jack has worked as a civil engineer for the City of Newark, Calif., for the past 35 years. He's active in the National Model Railroad Association and is an NMRA Master Model Railroader. He's writing a book on the real Yosemite Valley RR.

As I watched my only locomotive (a Santa Fe 2-8-0 lettered for the YV) roll through my first scenery efforts, little did I realize that the Beaver Creek Model Co. would someday release imported brass models of all of the YV Moguls. And while dazzling visitors with tape-recorded background sounds years ago, it was impossible to realize that these would someday be replaced with digitally recorded sound chips.

Model railroading has been a continuously challenging and rewarding hobby. Even after 20 years of enjoyment on my current layout, I still look forward to many more years of model building and operation. ♦

*Jack Burgess' layout will be one of dozens open for modelers attending the National Model Railroad Association's national convention in San Jose, Calif., July 30 to August 6, 2000. For more convention information, visit the Web site at [www.nmra2000.org](http://www.nmra2000.org), or write to 21st Century Limited, P. O. Box 2801, Alameda, CA 94501.*

ing clearance cards, dispatcher sheets, train order forms, and timetables.

Because I think they are easier to understand, I use switch lists instead of car cards for car forwarding. While this system takes a few minutes to set up before an operating session (filling in the pickups and setouts for each regular freight train), this approach also allows me to move cars around between operating sessions without concern.

### Summary

Even after I finished my track plan 20 years ago and looked around the empty layout room, I doubt if I was actually able to envision the layout as it now exists. However, each step, from the first benchwork to the first stark plaster scenery, helped clarify and validate my original vision.