

The Howard Terminal in N Scale

Rail-marine terminal on a hollow core door – and more!

by Byron Henderson

Although they are not widely known, the West Coast had its share of small “pocket” railroad terminals. Many of these were tucked into odd bits of real estate in harbor areas. One of my favorites was the Howard Terminal, located along Oakland, California’s Inner Harbor (see sidebar for more on the prototype’s history).

Perfect for modeling

My design is set in the 1950s, when there was still a little break-bulk rail-marine business and warehouse switching as well as significant scrap metal traffic. The Howard Terminal (HWDT) is almost perfect for modeling. The prototype was extremely compact, but had interchanges with both the Western Pacific (WP) and Southern Pacific (SP). The track arrangement included piers, warehouses, and a small yard – something for everyone!

Referring to the map (this page), probably the most unique element of the Howard Terminal was the running track that actually passed *through* a warehouse to reach a wharf (or quay). From the late 1950s until the ‘70s, the Howard Terminal switched a number of additional berths and marine terminals along this quayside line, including the Grove Street Pier.

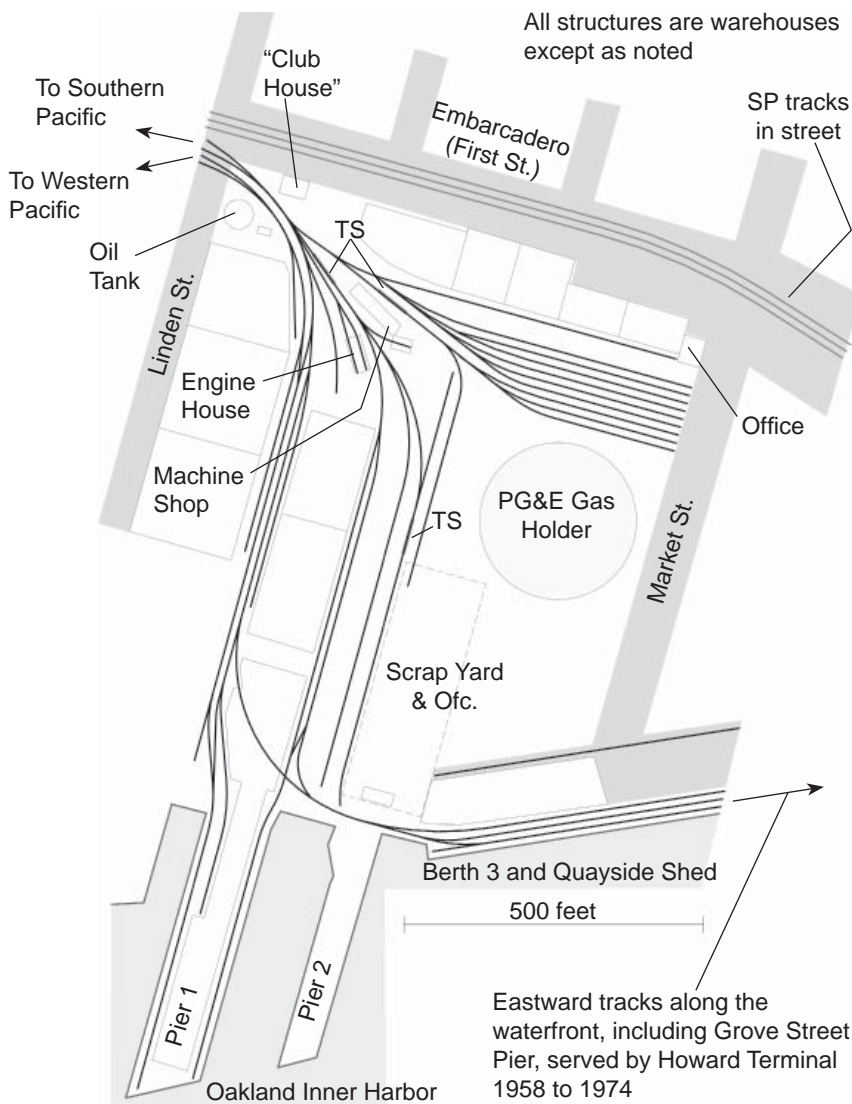
A “Z” for an “HCD”

Another of the unique elements of the prototype is that it is shaped something like a “Z”. There were two double-ended interchange tracks each for the Western Pacific and Southern Pacific to the west (the top of the “Z”), the main terminal itself (the middle of the “Z”) and the tracks out along the wharf to the east (the bottom of our “Z”).

A “Z” shape is a bit tricky to fit into a smaller layout space. I made it even a little trickier on myself by selecting a hollow-core-door-sized space (36” X 80”) for my N scale design. Hollow core doors (HCDs) are a popular “pre-fab” benchwork choice for many N scalers (and others, see *LDJ-40*). In order to make dropping feed wires a little easier, I’d probably actually build this using waffle-style benchwork (*LDJ-29*), but extruded pink or blue foam over a door would be another workable choice.

A “scrapy” little railroad

By the modeled era, scrap metal traffic was a very important business for the HWDT. Railcars loaded with scrap filled the small rail yard between ship arrivals or were switched directly to the pier when a ship was berthed. Scrap was also accumulated in the adjoining scrap



This map was redrawn by the author from a 1932-era illustration. Leads to the Western Pacific and Southern Pacific exit the property from the upper left. Continuing off to the lower right, the quayside tracks and a number of pier sheds were switched by the Howard Terminal from the late 1950s to 1970s. These additions to the mapped area create the overall “Z” shape of the prototype. And yes, the running tracks went right through one of the warehouses!

yard to be loaded into railcars and switched out onto the pier for loading into ships.

I also planned for shipments to-and-from the many warehouses found on and around Howard Terminal property. Although it was more prevalent in earlier eras, my plan even assumes some additional break-bulk rail-marine traffic. A massive Pacific Gas & Electric gas holder (not rail-served) is prominently featured in many prototype photos, so I wanted to include it in my design.

Door #1

My first hollow core door plan (above right) folds the Howard Terminal, its interchange tracks and the quayside tracks very tightly to fit. My priorities were to try to reflect the prototype track arrangement, especially the running track through the warehouse and the tracks out onto the pier. The scrap yard is also featured prominently, since it would be an important focus for operations.

Multiple quayside tracks on the other side of the layout provide welcome switching challenge. “Sure spots” requiring deliveries to specific doors or wharfside positions add to the interest.

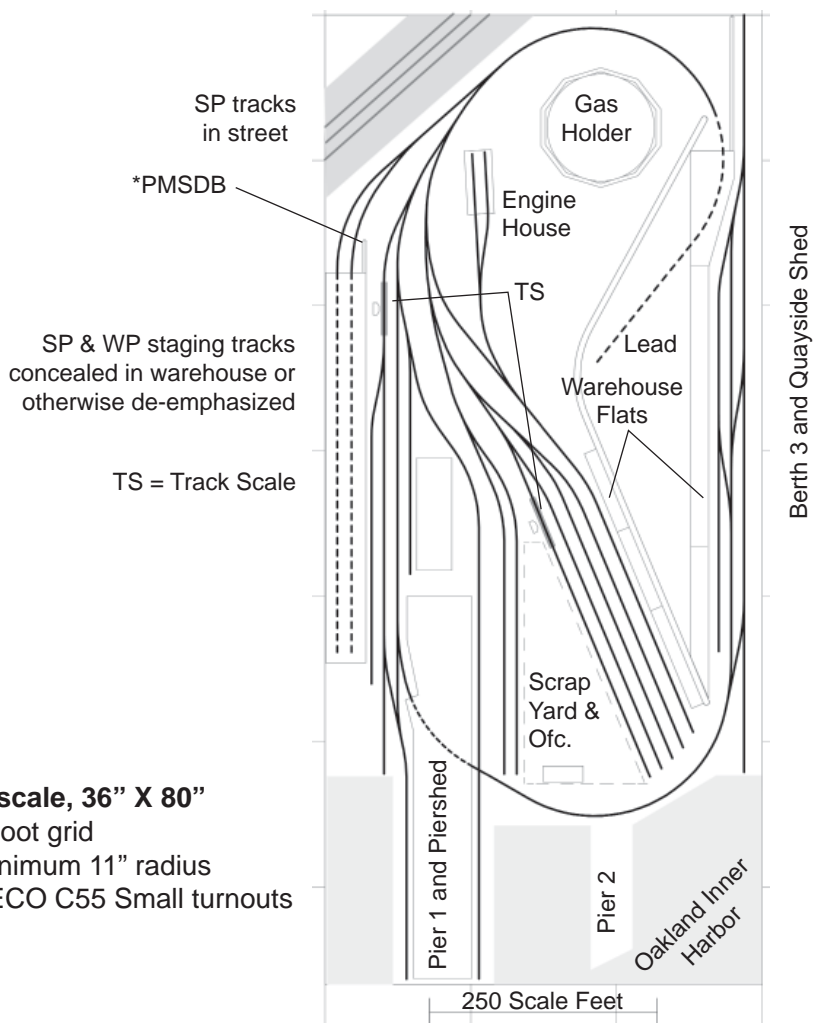
The overall track arrangement is mostly “one-way”: cars pulled from either the SP or WP stub-end interchange are then shoved into the various industry or yard tracks. A runaround isn’t really necessary except for switching the quayside tracks.

The disappearing lead

The long lead that facilitates switching winds its way into seclusion around the gas holder (that’s the Walthers HO model – assumed to be modified for N scale with different ladders and rails – and it’s still way too small!). The hidden tail end of the switching lead is a slight concern – I would probably make an engine length or two at the end of the lead “dead” unless a safety switch is pushed to avoid running off the end. Since the engine will usually be on the “bitter” end, that should work well.

To suggest the end-terminal nature of the prototype, I wanted the main switching lead to feel as if it were as far as possible from the end of the quayside track. Hence tucking it away between, behind, and under double-sided backdrops and warehouse structures.

The real-life Howard Terminal seems to have operated with one crew much of the time, at



N scale, 36" X 80"
1-foot grid
Minimum 11" radius
PECO C55 Small turnouts

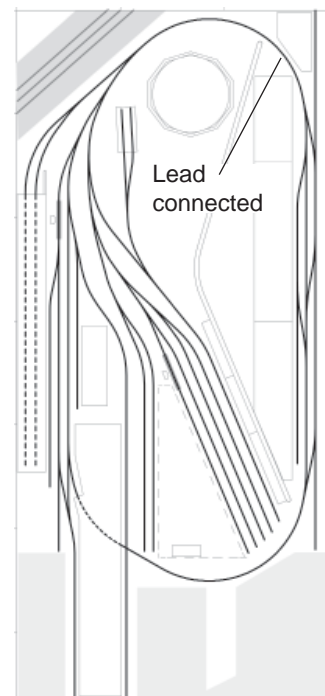
*In this hollow core door (36" X 80") Howard Terminal plan, a single switching lead serves both interchange tracks and the main terminal area. The end of the lead is obscured by the large gas holder, backdrops and structures. *PMSDB: Point of Maximum Suspension of Disbelief (see text).*

least in the modeled era. But with DCC, it might be possible for two crews to work during a “scrap rush” when a ship is imagined to be berthed, perhaps with one switching out on the quayside with the other working the main lead. They would occasionally need to swap cars back-and-forth.

*PMSDB

Of course, there are compromises to squeeze even this compact prototype onto the confines of a hollow-core door. One if these is the placement of the interchange tracks. These are hidden inside a fascia flat or sim-

This alternative HCD design at right joins the switch lead with the quayside tracks. Some realism is lost, but with the added benefit of a continuous run for display running or break-in.



ply placed on black-painted roadbed to help de-emphasize them. The point labeled “PMS-DB” on the plan is the Point of Maximum Ssuspension of Disbelief, where one must imagine that the modeled world ends and that the interchange tracks are “somewhere else”.

If the layout were placed permanently against a wall, these interchange staging tracks could

be extended along the wall on a narrow shelf as well. But once we open that genie’s bottle, other options in the space might well be considered (see below).

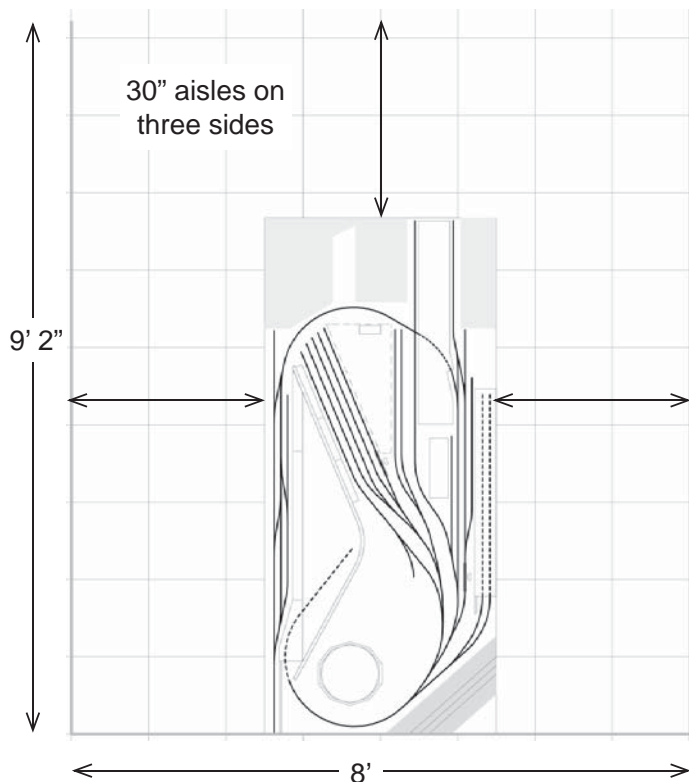
Turnouts that turn

The layout is based on PECO Code 55 components and flex track. The PECO C55 “Small” turnout has a generous #6 frog and a 12” radius curved diverging leg, so it’s a good match for our 11” minimum radius in N (equivalent to about 20” in HO). There are also a few “Medium” (in crossovers) and curved turnouts used.

With all the curving tracks, one might think that basing the entire layout on curved turnouts would be most efficient. But because the curved turnouts are significantly longer, this does not work out as well as one might expect. Since the “Small” turnouts are adequate in terms of frog number and diverging leg radius, they allow us to include more interesting elements within the given space.

Keep those railcars rollin’

The modest yard wouldn’t hold the sea of scrap gons typical of the prototype, but there’s a bit of room to work. Running with fewer than the maximum number of cars would help keep things fluid; and operators would need to think through their interchange moves to have space for incoming and outgoing cars. The prototype apparently had a lot of track scales for its size and simulating the weighing of a few cars per session can add interest and challenge, so I’ve



Hollow core door-based layouts are easy to transport, but they (and their aisles) take up a fair amount of space in a typical corner.

History of the Howard Terminal

The corporate precursor to the Howard Terminal Railway was founded in 1900 by John L. Howard as the first private operation within the growing port of Oakland, CA. In the beginning, coal was the primary commodity handled. This actually arrived from overseas destinations for distribution via railcar or locally. Later, outbound grain and then outbound coal from Utah were important.

With the coal business slowing after WWI, the coal bunkers were removed and the Howard Terminal turned to general cargoes (and took on the general arrangement shown in this article). One of the most unusual of these cargoes was copra, the hulled and dried meat of the coconut.

The Howard Terminal built four copra cars – essentially three-story-tall diesel-powered vacuum cleaners that sucked the copra out of a ship’s hold via a long flexible hose and blew it into the open door of a boxcar on an adjacent track. This took place on the quayside tracks. The copra was then shipped to firms that extracted the coconut oil.

Switching to the various warehouses on the property and some break-bulk ocean-going freight was also an important

source of revenue through WWII. By the 1950s, there was less break-bulk oceangoing freight, but scrap metal shipments became a key source of revenue for the Howard Terminal. Scrap came in via rail and also from adjacent scrap yards to be moved out to the pier or quayside for loading onto ships.

By the late 1970s, most oceangoing freight had moved to containers and many of the warehouses had been leased to companies that were shipping by truck, so the Howard Terminal shut down, selling the property (and the Whitcomb diesel) to the Port of Oakland. The main terminal area was paved and container cranes installed (see photo page 35). Although a railroad track remained through the terminal area, it appears that containers were driven by truck to the nearby large intermodal terminals. At one time import automobiles may have been off-loaded as well.

Today the Howard Terminal property is somewhat in limbo, with plans being floated for a harbor side ballpark for the Oakland A’s or other recreational use. – BH

made provision for a couple of track scales. Interchange tracks are designed to hold about ten cars each in the clear and the switching lead can handle these in one pull (even if the typical motive power might struggle a bit – see sidebar page 34). The staging tracks could be made a car or two longer as well.

Door #2

Although I like the end-to-end feel of the first door design, in some ways it would be more straightforward to simply connect the switch

lead to the end of the quayside track (page 31, lower right). One must again suspend their disbelief when working so that “east” does not also appear to be “west” at any point, but this option has the added bonus of providing a continuous run for break-in or display running.

Island fever

Island layouts, especially those based on a hollow core door, are reasonably transportable. But they don’t always make the best use of a typical room. In the diagram on the facing page, we see that a 36” X 80” “island” actually requires more like 8’ X 9’, if we allow 30” aisles on three sides. (Building the layout on casters to roll against a wall between sessions would help for storage, of course.)

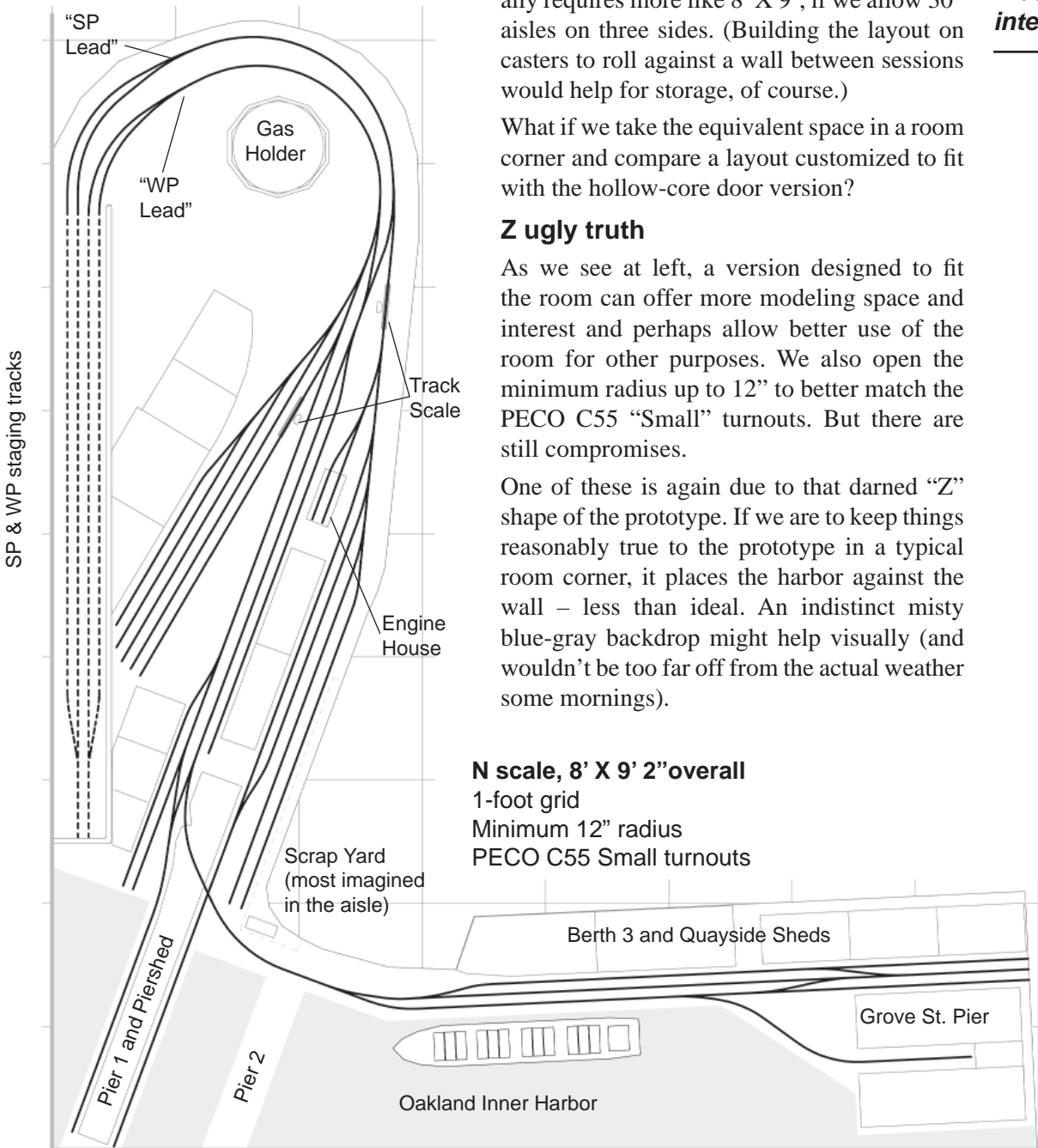
What if we take the equivalent space in a room corner and compare a layout customized to fit with the hollow-core door version?

Z ugly truth

As we see at left, a version designed to fit the room can offer more modeling space and interest and perhaps allow better use of the room for other purposes. We also open the minimum radius up to 12” to better match the PECO C55 “Small” turnouts. But there are still compromises.

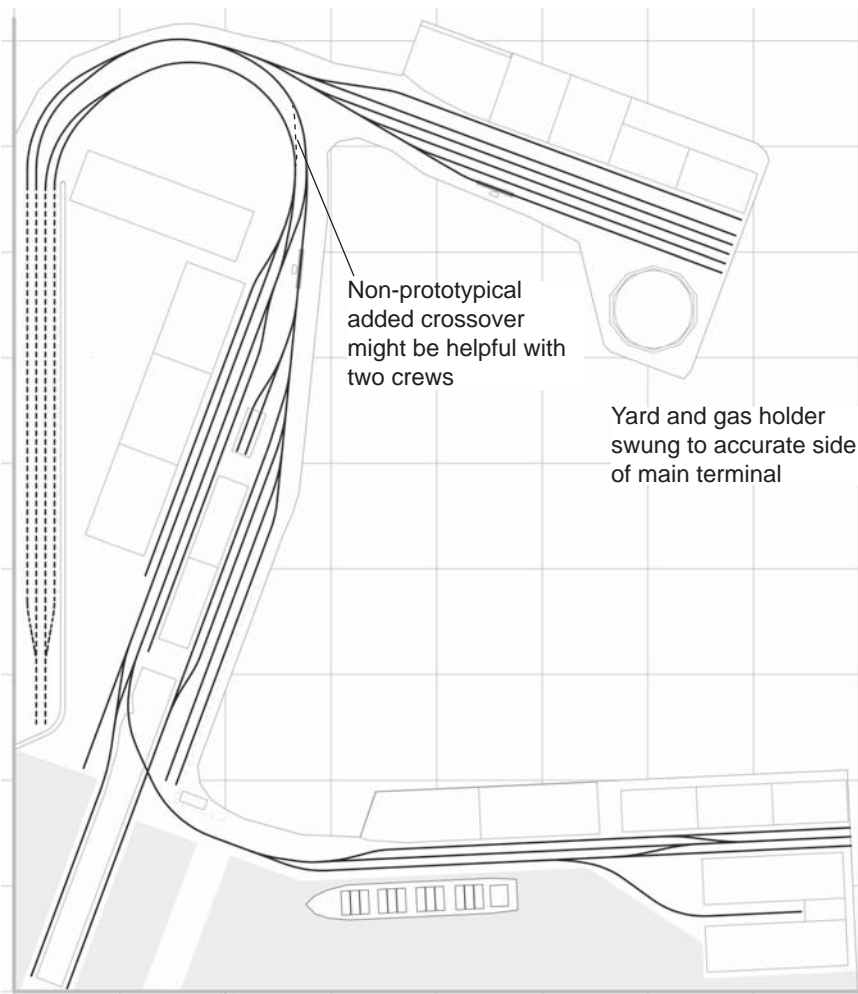
One of these is again due to that darned “Z” shape of the prototype. If we are to keep things reasonably true to the prototype in a typical room corner, it places the harbor against the wall – less than ideal. An indistinct misty blue-gray backdrop might help visually (and wouldn’t be too far off from the actual weather some mornings).

“ ... a version designed to fit the room can offer more modeling space and interest ... ”



In the same space as the HCD layout and its aisles, an along-the-walls arrangement offers longer tracks, a slightly larger minimum radius and more room for modeling. Yard tracks and gas holder are flipped to the opposite side of the terminal in a compromise to open floor space.

To keep the layout against the two walls, I flipped the small yard across the main running tracks as a mirror image. (The gas holder is also well out of position here – but still big!).



Another alternative using nearly the full area offers a more accurate suggestion of the prototype at the cost of other uses of the room.

Modeling the Howard Terminal in N

The Howard Terminal had a number of unique pieces of motive power, most of which aren't available off-the-shelf in HO, let alone N scale. Primary power in the 1950s was #6, an oil-fired 2-6-2T converted from a Sierra Railway tender engine. (This engine has been converted back to use with a tender and was restored and operated by the Pacific Locomotive Association). The #6 was replaced by a very small 4-wheeled Whitcomb diesel electric (formerly narrow gauge). Neither of these is available in N scale, and most N scale steam depends on the tender for electrical pick-up, so either would be a challenging project.

The Howard Terminal's final engine purchase was an ex-Petaluma and Santa Rosa 44-tonner, which is available in N scale in other liveries. These are small engines and might not be able to pull the full modeled interchange tracks in one shot – probably just like the real thing. And of course, the Howard Terminal leased WP and SP power occasionally, so one could use a Life-Like SW-9/1200 or Kato NW-2 for op sessions without too much disturbance of the space-time continuum.

Freight cars came from the nationwide interchange fleet, so the broad range of N scale equipment available today will serve nicely. – BH

On the plus side, the staging tracks are a bit longer and we can create runarounds to mirror the prototype's apparent practice of pulling the outbounds over to interchange engine-first, then shoving the inbounds in from the adjacent track. There's a little cleverness needed here with backdrops and structure walls to conceal the interchange, but nothing that hasn't been solved before. A mirror mounted on the wall above staging would allow operators a view when switching (an idea I first saw on the Reid Brothers' N scale Cumberland Valley System).

My two leads

Another nice feature of this plan is that we can better reflect the Howard Terminal's actual arrangement, with separate leads to the WP and SP. I've called these the "SP" and "WP" leads, but there's no indication that the prototype ever did so.

The resulting track plan could be operated by two people, but the two leads weren't really arranged for maximum flexibility with two crews on the prototype. An interesting challenge as-is, or one might rework the far right side of the layout a bit with an additional curved crossover or two to allow better access for each lead to the "other" side. When two crews did work the HWDT, one was usually out on the quayside tracks.

Down along the quayside

In this version, the quayside tracks really stretch out a bit and we can include a model of the Grove Street Pier. This was one of the large piers actually switched by the Howard Terminal after 1958. I've flipped the Grove St. Pier around 180° so we can still run leads into it even placed at the end of the benchwork.

Siting the structure in this way leaves us a little quayside room for a modest (~320 scale foot) ship model. (Rail-marine is even better when you can work in a little bit of marine!). Sure spots requiring cars to be placed in front of warehouse doors or at specific positions along the wharf add a lot of operating challenge in this area, with cars conceivably spotted on all three tracks.

And if only the real thing will do ...

If we allocate more of the square footage for the layout, it's possible to very closely reflect the real-life arrangement of the Howard Terminal (middle left). A small peninsula hosts

the yard and associated warehouses. We've also moved the gas holder to a more accurate location – but not only for appearance. This also gives us a reason to make the end of the peninsula wide enough to be a bit more stable. Whether built on a door or along the walls, the Howard Terminal offers an interesting rail-marine prototype with a definite West Coast flair! LDJ

Thanks to John Blunden and Bart Thurber for providing inspiration and research on the Howard Terminal. – BH

This 1980s view of the Grove Street Pier offers a look at both the interesting structure itself and the fate of the Howard Terminal. In the distance, we can see the container cranes installed on the quayside wharf of the Howard Terminal property. By this time the entire terminal area was paved over for container traffic and was later also used for delivery of imported automobiles. This waterside view shows typical construction for a number of nearby rail-marine pier sheds. Photo from the Library of Congress American Memory HABS/HAER collection: HABS CAL,1-OAK,23-5

Tips ...

- Rail-marine and similar “pocket” terminals can be great modeling topics, since they were compact by design (and necessity!).
- Although not accurate for most prototypes, turnouts with a curved diverging leg can be very space-saving.
- Don't be afraid of an unusual viewing perspective (such as harbor-to-the-wall) if it otherwise benefits the overall appearance and effect.

... and Trade-offs

- Compromising a distinctive prototype feature (here, the “Z” arrangement) is often necessary when working with a predetermined benchwork shape.
- Sometimes ya just gotta be willing to suspend yer disbelief!
- Equipment availability in some scales may strongly influence prototype and era. – BH



This article is reprinted with permission from the *Layout Design Journal*, the quarterly publication of the Layout Design Special Interest Group (LDSIG). The LDSIG is a 501(c)(3) educational organization whose goal is to act as a forum for the members' exchange of information and ideas, and to develop improved ways for hobbyists to learn the art and science of model railroad layout design. The LDSIG sponsors events at many regional and national NMRA meetings. To learn more, visit the website: www.ldsig.org

LAYOUT DESIGN Journal 45
Winter 2012
\$8.00 US

Official Publication of the Layout Design Special Interest Group, Inc.

Features

- Terminal and Switching Layout Focus: Breaking Marley's Chains - On2 to S 4 by Trevor Marshall
- SP on a Shelf - the Clinton Branch 12 by Greg Johnson
- Heavy Switching Design Challenge Tulsa 2011 17 by Charles J. Tapper
- The Copper Belt Railroad 18 by Charles J. Tapper
- Kansas City Southern in Neosho, Mo.; 1956 23 by Bob Madison
- The Pittsburgh Transfer Railway 25 by Charles J. Tapper
- Jacksonville and Union City 28 by David Salomon
- The Terminal Dock Railroad 30 by Olaf Melhouse
- Electrosteel Corporation 31 by Charles J. Tapper
- Gonowick, Bottoms and Bluffs 34 by Rick Muegler

News and Departments

- "State of the SIG" Update 3 by Seth Neumann, LDSIG President
- LDSIG at NMRA Grand Rails 2012 42 by Ron Hirkhund, LDSIG Vice President
- LDSIG Financial Report 43 by K. Travers Stone, LDSIG Treasurer
- In the Caboose and Looking Forward 44 by Byron Henderson

LAYOUT DESIGN Journal 44
Fall 2011
\$8.00 US

Official Publication of the Layout Design Special Interest Group, Inc.

Features

- Sectional, Modular and Portable Layouts: Sections Designed to Move - and Do! 4 by Doug Harding
- Modules for Home and Road 11 by Wolfgang Dautler, MMR
- Trenace: Compact English Terminals 16 by Nigel Mann
- Free-on-S LDEs at N2011 West 24 by Stephen Williams
- What Would you do Differently? 26 Ideas from Phil Galley, Robert Hoffman, David Parks, Jim Proskoczka and Jim Radkey

News and Departments

- New Ways to Help and Enjoy the SHG 3 by Seth Neumann, LDSIG President
- Taking it on the Road 3 by Byron Henderson
- LDJ Questions, Comments and Corrections 31 Tulsa 2011: Exploring Design Ideas 32 by Dave Salomon
- 2012 Meeting Plans: Bay Area, CA; Tulsa, OK 33 N2011W - Learning, Layouts and Outreach 34

LAYOUT DESIGN Journal 43
Summer 2011
\$8.00 US

Official Publication of the Layout Design Special Interest Group, Inc.

Features

- Designing a "Three-way" LDE on the BN 3 by Burr Stewart
- Lessons Learned: The Delaware & Susquehanna 8 by Phil Mount
- Lightweight Benchwork Ideas: Benchwork from Gatorfoam™ 24 by Greg Johnson
- "Bridge-based" Plywood Benchwork 27 by Joe Brann
- "Low-impact" Gatorfoam Sections 31 by Ted Dileo
- Planning for Signals, Part 2 35 by Seth Neumann
- Signal Repeaters 41 by Seth Neumann

News and Departments

- LDSIG in Person, in Print, and On-line 34 by Seth Neumann, LDSIG President
- Over Tonnage, with Helpers! 34 by Byron Henderson, LDJ Editor
- LDSIG Board of Directors Election Report 34
- LDJ Questions, Comments and Corrections 44