Over the years, many small layouts have been designed to focus on maddening puzzles and tricks. But operation on small layouts can be challenging, fun, and prototype-inspired. The key is taking care to include layout design “best practices” even in small layout design.

Reconsidering the classics

Two of the most famous small layout concepts are John Allen’s “Timesaver” (circa 1966) and the Inglenook Sidings (A.R. Walkley, 1926; Alan Wright, 1980s). Variations on these designs have been built and written about for many years.

Timesaver

An interesting classic contrast with the Timesaver is Linn Westcott’s “Switchman’s Nightmare (1956). While it fits in roughly the same space, there is more opportunity to operate realistically. We can imagine the tracks at lower right as a small interchange yard and the tracks at lower left as a large industry with multiple spots.

Beyond a puzzle

If we apply the same best practices for layout design and operation that we would use in a larger layout to a more compact design, the result may be more realistic and engaging in the same space. Some of these ideas include:

- Staging, Major Industries, Interchange, Prototype Inspiration (the Four Cornerstones)
- Realistic scenery opportunities
- “Fine scale” operations for lasting interest

The Cornerstones

The layout design concept of Staging is using track arrangements and operating procedures to represent a connection from our modeled layout to the rest of the world. This may be as simple as a single Interchange track that we imagine connects to another railroad. Between “sessions, swapping a few cars on that track leads to a fresh start to the next job.

It may seem crazy to talk about Major Industries in the context of small layout design, but even in a very compact space it is possible to incorporate the feeling of a large industry though the creative use of building flats or imagining industries to be “in the aisle”. In the compact N scale T-Track module below, a large brewery requiring many different types on cars delivered to individual spots is represented in about four square feet.

As noted above, Interchange tracks can serve as a portion (or all) of the Staging for small layouts. In addition, they may help set a time and place through the choice of interchange partners.

Prototype Inspiration does not require duplicating the real-life scene track-for-track. But a healthy dose of prototype study can help make our small layout seem more plausible and realistic – and thus more fun!

Applying the cornerstones

My own small (18”X72”) N scale switching layout provides examples of all the cornerstones. Inspired by real areas on the Western Pacific (WP) in San Jose, California, it includes a number of relatively large industries, staging on the WP lead and additional staging via an interchange track with the southern pacific (SP). Individual sure spots at industry doors and the oil tanker spot add to the switching challenge.

Adding atmosphere through realistic scenery

As mentioned earlier (and seen above), larger structures may be represented by flats, partial
structures, or even only a loading dock. Realistic touches such as asphalt or concrete around team tracks and street crossings can add a real-life feel, even in a small space.

Operating more slowly for more fun

The emerging concept of “fine scale” operations involves working our layouts (even small ones) more like the real life railroads operate. This can involve the timing and sequence of movements, as influenced by diverse imagined factors such as seasonality, industry shifts and access to private tracks, icing and perishables movement, placement of cars at specific “sure spots”, weighing and cleaning cars, etc.

In addition, we may imagine ourselves to be a part of a real crew. This involves thinking about how crew members would be positioned and how far each brakeman must walk, for example.

If we recognize that each uncoupling or movement of switchpoints requires a “man on the ground”, it adds the new challenge to operating even a small layout to deciding how to make our movements. All of this converts bashing cars around to thoughtful, purposeful railroading.

Give me the runaround

Speaking of switching, runarounds are handy things on the real railroads and on the small layout: they permit the engine to get on the “correct” end of cars to switch industry spurs in either direction. This adds more challenge to a small layout than having all the spurs in the “same” direction.

Many real-world towns and industrial locations incorporate one or more runarounds because of their flexibility. A few recent published switching layouts of modern industrial areas do not include a runaround, and from this some observers have concluded that runarounds “aren’t prototypical”.

But it is worth noting that there is often a runaround or yard just “off-scene” where crews arrange their train for the short run to the modeled switching area. Personally, I like switching with an engine rather than by hand, so I prefer to organize my cars on the visible layout rather than with the 0-5-0 before the session.

Overlapping operating elements

In small layout design, I am always looking for opportunities to trade benchwork depth (of which we have relatively more, even on small model railroads) vs. overall length (which is always precious). Often this means overlapping functions where possible to minimize the length of the switching area, using the same linear stretch of shelf for runarounds, switching leads, and industry tracks alongside one another. This can incorporate more fun and interest in a given length of layout.

The siren song of the switchback

Switchbacks with industries on each “wing” requiring cars already spotted to be removed create a lot of switching frustration, for me at least. Nearly non-existent in real life, they are very common on small switching layouts. It’s much more typical to have two switching leads cross over a diamond rather than via a switchback, so that’s an arrangement I often favor.

Don’t settle for a puzzle

Focusing on the same layout design principles found on larger layouts provides more realism and operating on small switching track plans. I hope you’ll use these ideas for your own designs – and have fun!

References

Layout Design SIG -- [www.ldsig.org](http://www.ldsig.org)
LDSIG Member Services; 668 Snyder Hill Road; Lititz, PA 17543
Operations SIG -- [www.opsig.org](http://www.opsig.org)
OpSIG; PO Box 67; Wood Dale, IL 60191
The late Carl Arendt’s MicroLayouts site – [www.carendt.com](http://www.carendt.com)

Articles (alphabetical by author)

"Prototype Track/Industry Maps as a Design Resource" by Byron Henderson; *Layout Design Journal* # 26; March 2001. Published by Layout Design SIG (see above). Also online at: [www.layoutvision.com](http://www.layoutvision.com)

"ALCOs in the Alcove" by Byron Henderson; *Model Railroad Hobbyist*; July 2009 (Free download at [model-railroad-hobbyst.com](http://model-railroad-hobbyst.com))

"A Waterfront Yard in N and HO" by Bernard Kempinski; *Model Railroad Planning* 2002

"On the Waterfront" by Bernard Kempinski; *Model Railroad Planning* 2003

"Voodoo and Palmettos" by Lance Mindheim; *Great Model Railroads* 2009.

"Taking an Industrial Branch on the Road" by John H. Wright; *Model Railroad Planning* 2008.

"The Pennsy in Britain" by John H. Wright; *Model Railroader* May 2003.

Books (alphabetical by author)

*Track Planning for Realistic Operation* by John Armstrong (Kalmbach, 1998)

*Creative Layout Design* by John Armstrong (Kalmbach, 1978 -- out of print)

*How to Design a Small Switching Layout* by Lance Mindheim (Amazon CreateSpace, 2009)

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