Free-MOn30 Interface Plate White Paper:

Revised: February, 2008: *This document contains live HTML links.*

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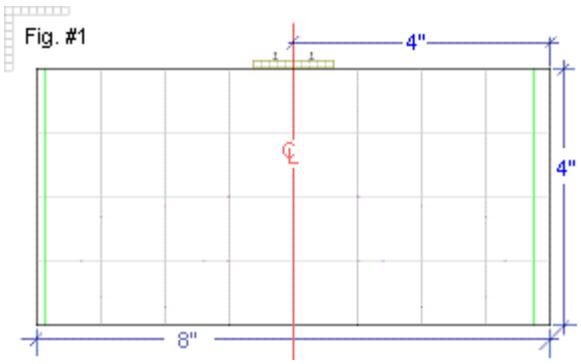


There is one item that distinguishes a Modular from a Sectional layout**:** The Interface and more specifically, the use of a common Interface Plate.

This paper discusses Interface Plate width and track orientation because they are two of the most important items that are central to Module Standards.

A Sectional layout is built in such a way that it can only be assembled in a certain order. Any omitted section will make the layout incomplete and/or inoperable.

With a standard Interface a modular layout allows each module to be placed or removed from an overall layout in any order. (*Well almost*, but I'll get back to this….)

Figure #1 illustrates the shape, size and track location for what is considered an absolute minimum Interface Plate. Free-Mo standards would consider this an interface plate for a "Mini-mo" module. As discussed on the Internet in a Yahoo! Group that was set up to establish module standards for On30, this would allow enough space behind the interface plate for the common bus wires and secure clamping as well as enough width to catch a derailed train before it takes the plunge to the bottom of the "concrete canyon". For the sake of argument, it was agreed that the Interface Plate could be even smaller but would require some sort of guard or barrier to protect the train from falling to the floor. These are the minimum dimensions, while no maximum was specified.

Why would you want to build a module so narrow? The most common and preferred width for the Interface Plate (and the overall module) is 24-inches, or for a little more scenic real estate 30-inches. However, in order to be all inclusive, it was desirable to allow any interested person to build a module and join with others. Some people have very limited time, resources and/or space and if they wanted their module to pull double duty as a part of a home shelf-layout it may be necessary that the module be only 12 or 15-inches wide.

By understanding how mechanical and electrical connections work in modules, it is realized that the shape and size of the interface plate really doesn't matter. As long as the tracks can be aligned, the wiring connected and the baseboards secured, the rest is mostly cosmetic.

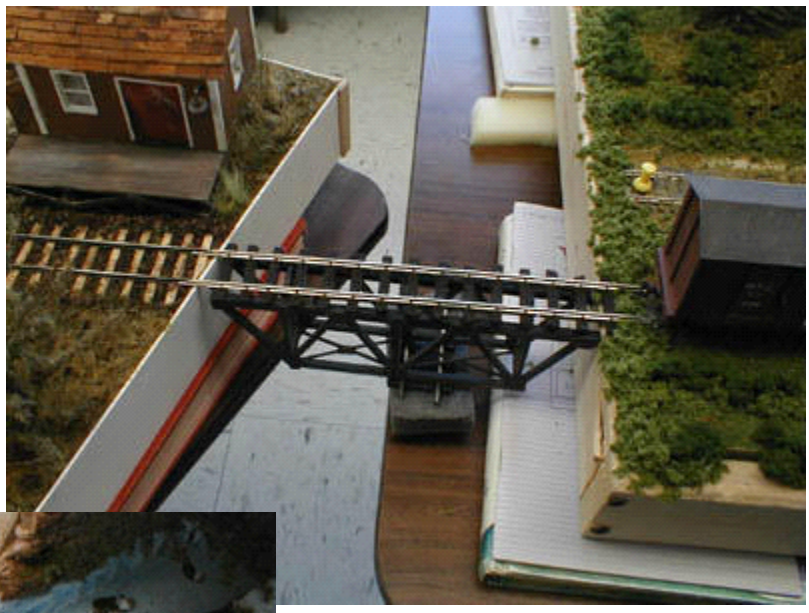
Using a common Interface Plate gives the whole modular layout a desirable uniform look and it is a valuable aid in connecting modules quickly and easily. It becomes more important to establish a uniform Interface Plate standard for modules when you have multiple tracks crossing the interface from one module to the next to represent Class-1 mainline railroading like the N-scale pioneer of modular model railroading N-Trak and NMRA module standards.

See Part II**:** Interface Plate Scenic Profile

However, for single track narrow gauge railroading, it is much easier to break away from this standard.

It was illustrated that Interface Plates aren't needed at all! A few years ago, Geren W. Mortensen, Jr., along with some fellow On30 modellers in the North-Eastern United States got together and linked up some dioramas with prefab HO bridges.

Photo A and B

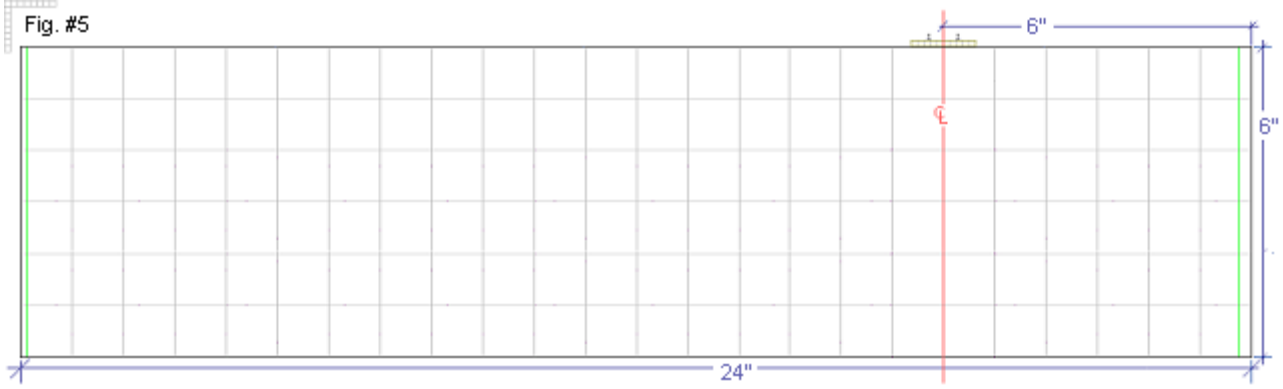


The dioramas were laid out on folding tables and shimmed with books and other items to level their heights, and then linked together with the bridges.

Around the same time the On30 Module Standards discussions on the Yahoo! Group were winding down, a group of fellows in Texas got together and started building On30 Modules with standards that they set themselves.

For their standard, they chose to use a 24-inch wide interface plate and also decided on a nominal "front" and "rear" by positioning the single track 6" from the "front" like in Figure #5 below.

Fig. #5



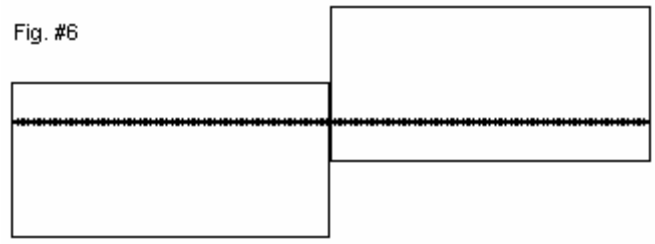
See Part II: Interface Plate Scenic Profile

The “Texas Outlaw” modular standard for On30 modules has taken off and is being adopted by several On30 groups in the South and West of the United States.

This brings me back to my earlier “*Well Almost*” comment regarding, “*With a standard Interface Plate, a modular layout allows each module to be placed or removed from the layout in any order*.”

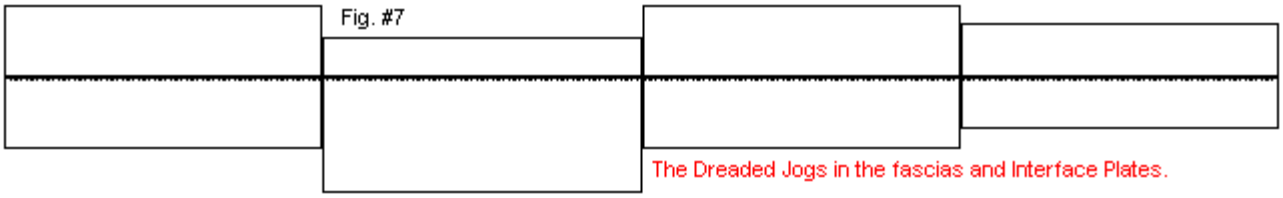
When you orient the track to one side of the Interface Plate and you want to retain a uniform aesthetic, then you have to arrange all of your modules according to “front” and “rear” which is a throwback to the N-Trak and NMRA module standards.

Fig. #6



By turning a module end-for-end, you get jogs in the fascia as in figure #6. This also happens when the interface plates have the tracks oriented in different places or are different widths as in figure #7.

Fig. #7

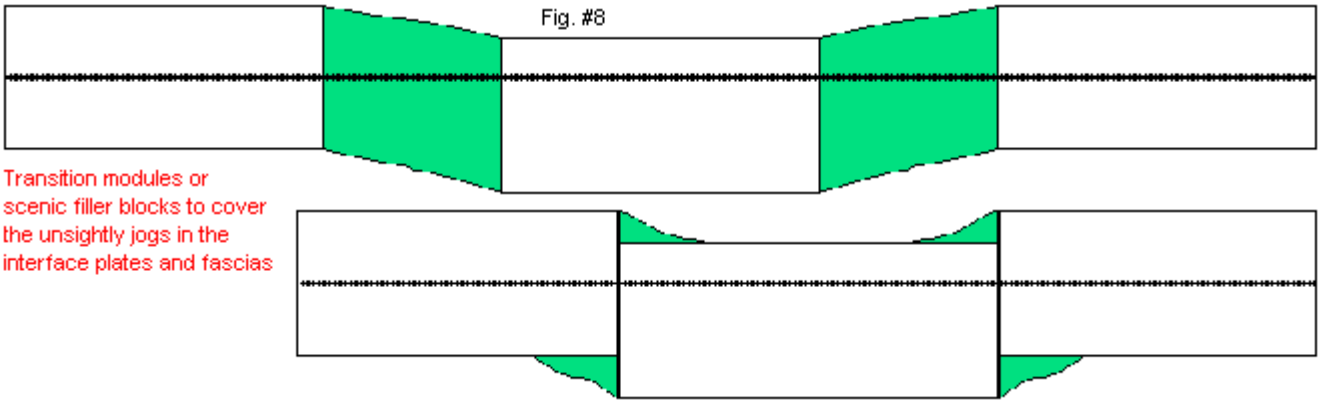


The Dreaded Jogs in the fascias and Interface Plates.

Mechanically and electrically, all of these modules can be connected and operate together, but there are jogs in the fascias and interface plates.

These jogs can be overcome by building transition modules or by employing Scenic fillers as illustrated in figure #8.

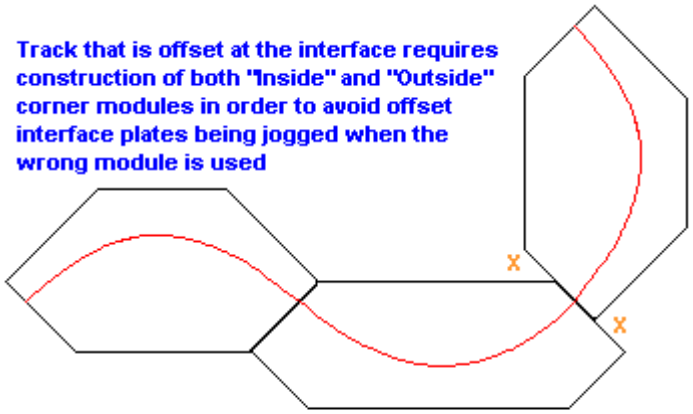
Fig. #8



Transition modules or scenic filler blocks to cover the unsightly jogs in the interface plates and fascias

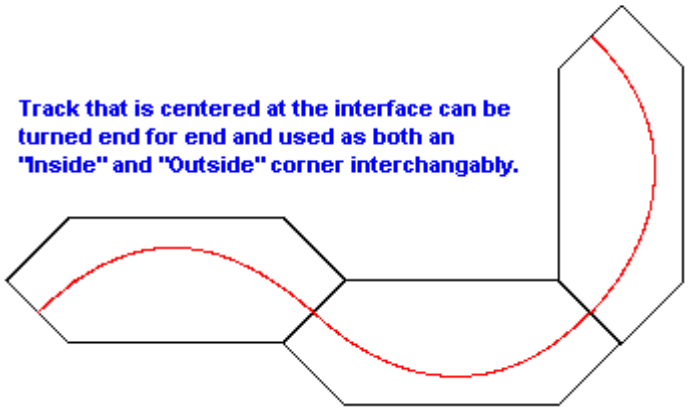
See Part II: Interface Plate Scenic Profile

Having the track offset at the interface isn't likely to pose problems for straight rectilinear modules. There isn't likely to be a need or want to turn them end for end, so issues won't arise unless the offsets are different or they are mated with modules with the track centered at the interface.



Where an issue is more likely to arise is when corner modules are needed within a modular layout.

Unlike traditional NTrak module set-ups where "outside" corners are most often constructed in order to create the "Fortress" type layouts for round-n-round operations, On30 modules are set up for point-to-point, point-to-loop or loop-to-loop operations.

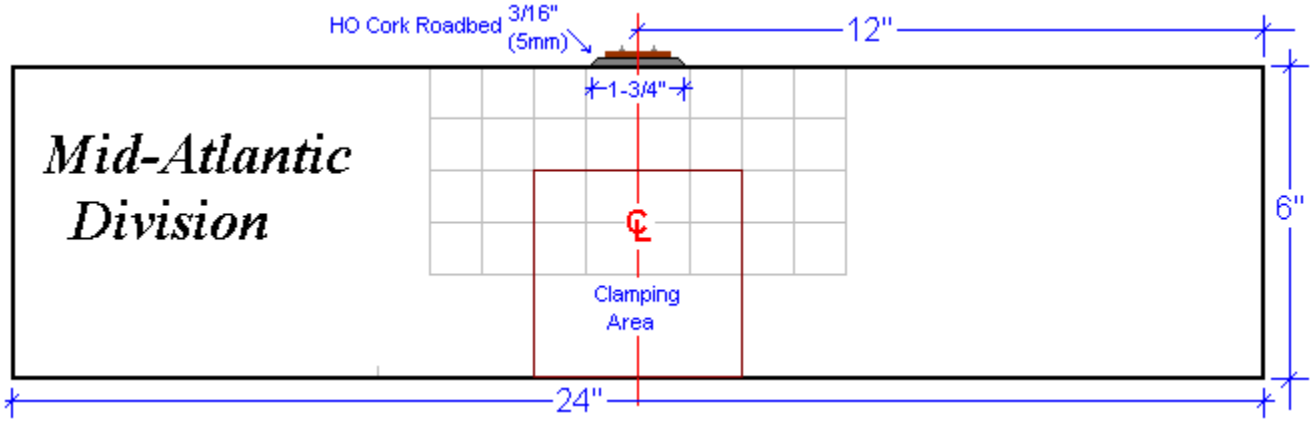


In this situation both "Inside" and "Outside" corners are desirable in order to curve the overall modular layout to fit into a given space at a meet or public show. This way a modular layout can be bent around obstacles and curved around irregularly shaped rooms.

This is when having the track centered at the interface becomes an advantage. It is not necessary to built both "Inside" and "Outside" corners. Having the track orientated at the center of the interface makes the curved modules fully interchangeable for use as both "Inside" and "Outside" corners on a modular layout.

Free-Mo standards allow modules to be turned end-for-end and still connect with the track oriented at the center of the Interface Plate and the fascias will still be in line with each other.

In the North-East, On30 modules are also being built with a 24-inch wide interface plates, but the track is oriented at the center of the Interface Plate in keeping with Free-Mo standards.



See Part II: Interface Plate Scenic Profile

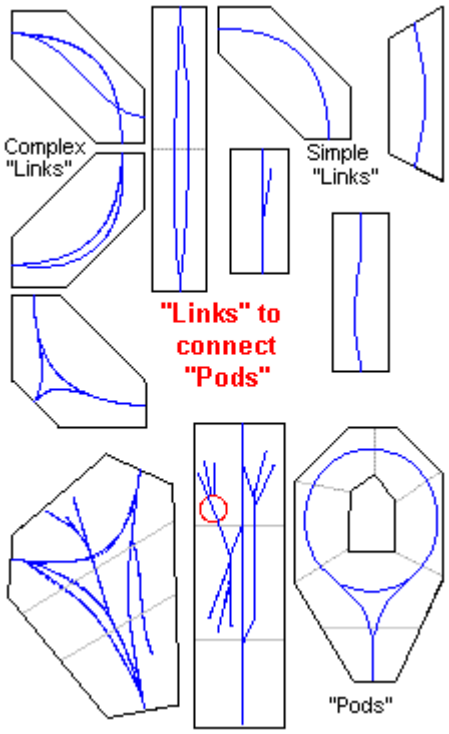
Regardless of whether the track is located at the center or offset to one side of the Interface Plate, there appears to be a consensus on the width of 24-inches which unfortunately leads to a propensity of 24-inch wide rectilinear modules.

24-inches in N-scale is a good piece of geography and it's even a fair deal for HO-scale, but in O-Scale things start to get tight. In terms of length, modules are usually at least four feet long and many modules are built in two or three sections, often reaching up to twelve feet (five-hundred-seventy-six scale feet) in three sections (or even longer). Rectilinear modules with sections that are roughly 24 by 48-inches are much easier to construct, transport and store but are creatively constraining. Six inches on one side of the track and eighteen inches on the other, or 12-inches on each side of the track means that real estate is alloted in thirty-six scale foot increments.

Some moduleers have widened their modules between the interface plates in order to gain more real estate but this appears to be the exception and not the rule.

For O-Scale narrow gauge, the ideal is for twisty-curvy track running through rough and rugged terrain. With set minimum radii curves and the confines of rectilinear modules it becomes difficult to achieve the ideal unless multiple sections are used to carry the trackage through convolutions and then bring it back to the proscribed location at the extreme interfaces.

Since the modules are set up to form point-to-point, point-to-loop *and* loop-to-loop layouts, the strictures of rectilinear modules being set to create a fortress no longer apply. This is liberating because interface plates no longer have to be set parallel to each other and can be angled instead. The overall layout no longer has to be linear, but can be sinuous and curvaceous. Unfortunately, this is also an exception and not the rule.



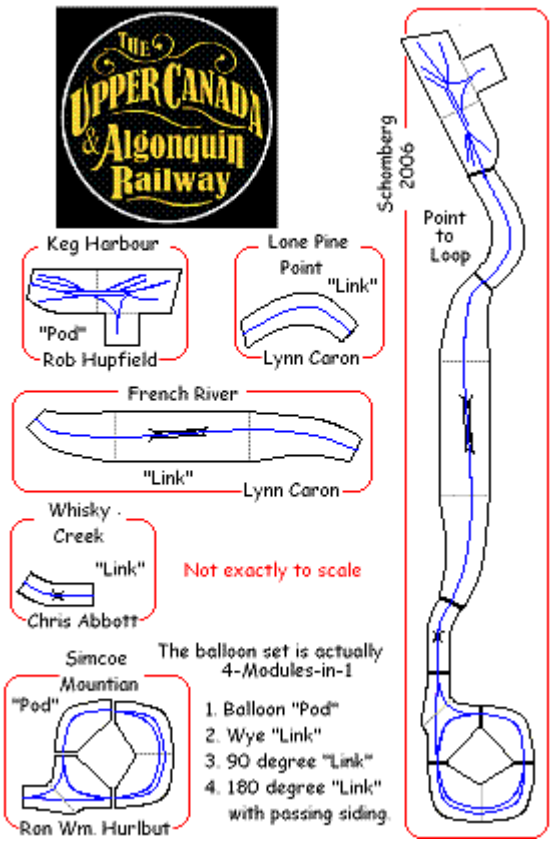
There is the temptation for each moduleer to build some sort of industry, camp or terminal that is a complex switching puzzle; thus leading to the danger of creating a layout that is made up of a daisy chain of Inglenooks and Time-Savers, without any running room in between.

Ideally, there should be a combination of “Pods” and “Links”. A "Pod" is a “Point of Departure” *or* “Point of Destination”. These are the industrial and interchange areas that generate revenue for your railroad. However, if you would like to participate in a module group and limit your contribution, then building a "Link" is recommend. No acronym here, just a module that provides some running distance between “Pods”.

Something small and manageable can still be very rewarding when you can concentrate on scenery and build a real show piece that you'll be proud to use as a diorama for posing and photographing your favourite motive power and rolling stock on...

See Part II: Interface Plate Scenic Profile

The Founders of the *Upper Canada & Algonquin Ry.* chose narrow 12-inch wide interface plates. Rectilinear construction has been rejected and "Link" modules are curvaceous and the overall module width between interface plates varies. The "Links" give the trains some running room between the "Pods". The illustration shows some of the modules of the UC&A as well as the way they were set up at the Ontario Narrow Gauge Show in Schomberg Ontario, Canada in 2006.

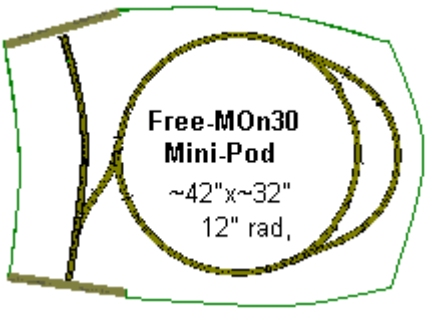


The choice of a narrow interface plate was initially considered because some of the UC&A members are living in confined quarters: In condos and one is living aboard a sailboat. Without any space for a basement empire, a module set can pull double duty as a shelf layout too.

Adopting a narrow interface plate means that the modules can be built-out to one or both sides of the track in order to fit a variety of track arrangements and scenic treatments. The real estate can be arranged to one or both sides of the track and still fit inside the usual 24-inch wide footprint.

Building materials have advanced since the advent of modular railroading. Heavy nominal dimension lumber, plywood and plaster have been replaced with engineered wood products, extruded foam board, high-tech adhesives and other light weight materials. The new materials available to moduleers make it easier to build modules that are strong and light-weight. The materials make it easier to construct them in different shapes and sizes.

Unfortunately, full advantage is not being taken of the new materials and techniques. "Plywood Plains" are being replaced with "Foam Flats" and rectilinear "dominoes" abound.



Another advantage to building modules with narrow interface plates is that mini and micro layouts can be adapted and fitted with interface plates. Operations on "Mini-Pods" allow set-out of loads and collection of empties from the mainline instead of perpetually chasing their tails or shunting back and forth within the confines of their baseboards. You can get a lot of ideas for mini and micro layouts from Carl Arendt's website**:** Micro / Small Layouts for Model Railroads.

The drawing shows a simple mini-pod design. The Interface Plates are 12-inches wide and the mainline passes through the straight leg of an industrial turnout and through a gentle 30-inch radius curve. The Industrial turnouts designed by Geren W. Mortensen, Jr., are 12-inch radius and so is the loop of track. The mini-pod can stand alone or be joined into a modular layout.

See Part II**:** Interface Plate Scenic Profile