

CLUB STANDARDS AND OPERATING RULES

[Adopted 14 March 1995]

[Revised 16 November 2000, 15 September 2004, 01 November 2006]

ARTICLE I: PHYSICAL STANDARDS FOR MODULES

NOTE: See accompanying diagrams to clarify standards.

Section 1. GENERAL: Construction of the individual modules shall conform to the following:

- A) Standard modules shall be 30" wide, 2, 4 or 6 feet long, and 42" high at the top of the road-bed. 8-foot long modules will be considered under special circumstances, as will wider modules (such as the 36" w yards).
- B) Corners shall be 48" square with an 18"x18" corner cut off to the inside. "Standard" (straight-line) modules may be constructed like a corner if additional depth is required.
- C) Modules shall utilize self-contained legs (e.g., folding, etc.) where feasible. If not feasible, legs shall have the ability to transport with the module. 6'-0"+ and corner modules shall have 4 legs; 4'-0" modules may have three. All legs shall be equipped with tool-less leveling devices with a 3/4" minimum adjustment.
- D) Modules shall use 1x4 (or similar plywood) construction for the framework, with the "interface" ends to be straight and level so as to match with any other module adjacent to it. Module front and rear may deviate from level as desired.
- E) Modules shall have a permanent backdrop, of 1/4" lauan plywood or hardboard, and 1x4 framework, that shall double as a clamshell crating device. Backdrop shall extend 12" above the benchwork standard. Modules with special requirements for transport, including corners, shall be exempt from this rule, but shall still be required to have some kind of backdrop. Backdrops, as a minimum, shall be painted light blue, similar to F&F "Bonnie Blue". Clouds, photographs and other embellishment is optional but encouraged.
- F) For known pairs of modules that will crate together, affix 2-1/2" rubber casters to the backside of one of the module backdrops, for easy transport. Pairs of corners sit on "corner carts", constructed out of 1x4's and plywood, with wheels on the bottom (and optional folding legs so it may be used as a table during the show). In all cases, paired modules should be locked together for transport using 2" removable-pin hinges and cotter pins.
- G) Modules shall have 5/8" diameter holes in their fascias, 12" from the ends and 24" o/c thereafter, on a level line, to accommodate the 36" standoff dowels. The dowels will be inserted approximately 14" into the module – provide a post with hole or other device to secure the end of the standoff under the module. Standoffs are typically provided by the club; if the module requires non-standard length standoffs due to construction restrictions, those standoffs shall travel with their module.
- H) Modules may be of open grid or flat plywood construction. If module is flat, 1/2" plywood shall be used, minimum four-ply CDX. Open-grid modules should use plywood gussets to strengthen the frame and keep it from "racking". Sheets of EPS foam (the pink or blue stuff) may be used as the top surface provided it meets the 42"h requirement, and the edges are protected to mitigate damage during transport.
- I) No more than three (3) adjacent modules, or 12' of modules, whichever is greater, shall be made to be *required* to be connected together (see item "K"). This rule is to allow maximum flexibility in assembly. Groups of modules may exceed this requirement if they can be optionally broken up and used as individual pieces with no loss to standards.
- J) Provide clearance under the module interface for clamping; 3-1/2" C-clamps are provided by the Club. Two clamps are typically required at each joint (one front and one back).
- K) Pairs or groups of modules that must always be connected together shall have a form of tool-less alignment device between them to ease the setup process. Such alignment devices shall

not interfere with the normal crating or assembly procedures as outlined above. Such devices may be dowel pins, hinges, hasps, bolts, or other similar hardware.

- L) Yards are common Club property and will not be constructed for individual members.

Section 2. TRACK: Track on modules shall conform to the following:

- A) There shall be two primary mainlines (A & B) and an **optional** third industrial mainline (C) that shall be located 4", 6", and 8" from the front edge of the layout to their centerlines, respectively. In general, adjacent parallel tracks shall be 2" o/c minimum.
- B) On either end of the main yard, there is a "facilities" track located 20" from the front edge of the layout to its centerline. This track may be extended to serve railroad-related buildings and service areas on modules designed as such.
- C) Mainline radii on corners shall be 42", 39-1/2", and 37" for A, B, and C respectively. In general, adjacent curved track shall be 2-1/2" o/c minimum. Maintain a minimum 8" section of straight track in the middle of an "S-curve" and provide easements in particular to sharper sections of curved track.
- D) Mainline track shall consist of nickel-silver code 100 flextrack. Sidings and additional track may be code 83 or smaller; transitions between code sizes must be smooth and gradual. Handlaid rail should be avoided for mainlines, unless for example the geometry of a specific turnout precludes a commercial unit.
- E) All turnouts should be of the insulating type. Mainline turnouts to and from A & B shall be #6 or larger; crossovers to C shall also be #6. Turnouts from C may be #4; yard tracks and industrial sidings may use #4 turnouts. In general, sidings and yard tracks typically carrying passenger service or intermodal should use #6 turnouts; all other turnouts can be #4. Wyes should be #3 minimum and "slip switches" should be avoided for the mainlines.
- F) Solder all rail joints and cut gaps later where required; fill gaps with CA or styrene and file to shape. Install feeders on the outside of the rail, using a good clean solder joint. Buff or grind soldered joints and feeders to present a uniform appearance and assure no interference with equipment running on the rails.
- G) Mainline tracks and additional tracks between modules shall be held back 3" from the end of the module to accommodate the 6" sectional pieces used when modules are assembled. Special tracks connecting non-mainline track on pairs or groups of modules are the responsibility of that owner. Railjoiners used at module joints shall be the "property" of the connecting section piece rather than the ends of the track on the module.
- H) Roadbed shall be 1/8" cork or equivalent; roadbed shall be held back where the 6" sectional pieces are used so that ballast material does not interfere with the connections.
- I) Turnouts, unless powered, shall use a Caboose Industries N-scale rigid ground-throw (#105R) or other operable switchstand to control them. Electrically-operated turnouts shall utilize Circuitron "Tortoise"-type machines; in no case shall a turnout be left "free", i.e., without a control device of some kind. Staging and other non-scenic turnouts may use spring or snap-switch controls.

Section 3. SCENERY: Scenery shall conform to the following general guidelines:

- A) While grade may deviate from level on each module or group of modules, track and scenery shall return to zero (42") at the end of the module or group. Mainline grade shall not exceed 1%; siding/spur grades shall not exceed 3%.
- B) Mainlines A & B shall have Woodland Scenics "Medium Gray" ballast, or equivalent. Optional industrial mainline C shall use a 70/30 mixture of "Fine Brown" and "Fine Cinders". A sprinkling of other colors to mainline ballast may be used for effect; other tracks may use any ballast as appropriate. Glue ballast down with diluted white glue; be careful around turnout points and flangeways!
- C) In general, rigid extruded polystyrene insulation board (**not** white beadboard) should be used for contouring, with plaster or plaster gauze as the evening agent. Keep in mind that the modules will be subject to a limited amount of abuse, so keep the scenery simple, strong, and light. (Cardboard strips and newspaper probably will not hold up for long.) Note that regular white glue will not cure if sandwiched between layers of foam; use yellow "carpenters" glue or foam-friendly construction adhesive.

- D) Scenery and structures, unless removable, shall be limited to 3-3/4" in height above the 42" top. Under certain circumstances, such as when two modules nest together for transport, scenery may be up to 7" high. Modules with special requirements or those that will be "traveling" alone are exempt from this requirement. Owners are responsible for the integrity of their scenery and structures. If packing structures separately, make sure to include packing and setting instructions or diagrams to make sure others can duplicate your efforts.

Section 4.

WIRING: Electrical components shall conform to the following general guidelines. See separate wiring standards for more specific information. These are the standards for individual modules only; head-end power and main connectors are proprietary and do not affect the modules.

- A) Modules shall utilize a standard ten-conductor "power" bus, carrying power for A, B, and C mainlines, an 18VDC lighting/accessory bus, and a 12VAC tortoise-power bus. The bus shall utilize "exposed" conductors as opposed to "constrained" conductors (i.e., ribbon cable or multiple zip cords as opposed to a 10-conductor jacketed cable). Bus conductors shall be minimum 18-gauge. A second ten-conductor "signal" bus with 9VDC power and sensors for grade-crossing and track signaling shall run parallel to the main "power" bus and otherwise conform to similar requirements [standards not yet finalized].
- B) The "power" bus shall terminate at each end with a 12-pin "molex" connector, such as the kind found at Radio Shack. The "male" connector shall be at the east end (standing facing the public), and the "female" at the west. As much as practical, the bus shall line up directly under the A & B mainlines for maximum accessibility; allow 6" excess length at each end for reach to adjacent modules. The "signal" bus shall utilize nine-pin "molex" connectors, with the male and female ends opposite of those for the "power" bus [standards not yet finalized].
- C) Jumpers to track and accessories shall tap into the bus using compression-style ("Scotchlock") crimp taps. Jumpers may be soldered to bus, however a screw-terminal strip must then be used directly off the bus. In no case shall the bus be interrupted or cut within a module. Jumpers shall be minimum 24-gauge; all unsoldered track sections require jumpers.
- D) The DCC "LocoNet" bus requires an 8-wire "Cat5" cable with male plug on the east and female socket on the west. Mount the cable towards the rear of the module, with 6" excess length on each end for connections. If a walkaround jack, turnout control module, or other LocoNet-connected accessory is used on the module, daisy-chain the accessories together between the ends of the module.
- E) Any switches or controls required for operation on a module shall be self-contained and are the responsibility of the owner. Power on a mainline shall not be dependent upon a switch setting on an individual module, except for crossover control and where a switch may be required for module integration into the member's home layout.
- F) If the modules require or will otherwise use a separate power pack for switching or other operation, the pack must be powered from 120VAC, not tapped off any accessory bus. Any tracks operated by the pack must be switchable between that pack and the mainline cabs as required.
- G) All buses, accessories, and other wiring shall be securely attached to the underside of the module and arranged so as to not interfere with the operation of the legs or insertion of the standoff dowels. All accessories shall not protrude beyond the lower edge of the module so as to mitigate being snagged and damaged during transport.
- H) If a module has an excessive amount of accessories, it is recommended that a separate 120VAC power transformer be installed under that module for operating the accessories. Corner modules and yards shall have installed a 120VAC power strip and a set of walkaround jacks that can be connected to the rest of the system; power strips on other modules are optional. The 120V power system will be strung between modules separately after the layout has been set up.
- I) All members are required to learn how to use the layout's control systems effectively, particularly the DCC system and the yards. Modules with complex controls that affect mainline operations should be reviewed as well.

ARTICLE II: OPERATING RULES AT SHOWS

Section 1. ROLLING STOCK: Rolling stock / engine protocols shall conform to the following:

- A) Members may bring as much rolling stock and as many locomotives as they wish, but are fully responsible for transportation and security of their property. Notify the person making the running schedule what kind of equipment you plan to run.
- B) All rolling stock intended for use shall be staged on the layout in either the main yard or the "HOG" yard, with the latter being preferable. In no case shall rolling stock be set on the layout on a mainline. Rolling stock, if used for static display, may be set on sidings, provided the sidings aren't being used for a specific operating session. All persons operating during the show will be assigned a yard track or tracks, depending upon the amount of equipment available and the number of participating members.
- C) All locomotives intended for use shall be placed on the layout in one of the engine facilities, if provided, or on yard tracks (not ladders). In no case shall locos be set on the layout on a mainline; if used for static display, they may be set on sidings, provided the sidings aren't being used for a specific operating session. All persons operating during the show shall be assigned an engine track in the "HOG" yard and/or a roundhouse stall, if provided. Additional slots in the engine facilities are to be available on an as-needed basis.
- D) If a member wishes to place his equipment on a siding or track other than one on his own module, permission must be granted by the "host" module owner and the dispatcher in charge at the time, if one is present.
- E) Rolling stock to be used in mixed consists shall conform to typical NMRA guidelines (weight optional but preferable) and have Kadee-compatible knuckle couplers *set at the correct height*. The latter requirement may be waived if the owner is running a unit train with rigid couplers or drawbars in between. In no case will "horn-hook"-style couplers be allowed. Metal wheelsets on all equipment is strongly suggested, as is some kind of owner-identifying mark on the bottom of the equipment. There are "rip tracks" provided for poorly-running equipment; defective or consistently troublesome equipment will be promptly removed whether the owner is there or not.
- F) If you plan to run multiple-unit consists, particularly with mixed manufacturers, please make sure the DCC programming has equalized start-up and running speeds, as well as direction. Members are responsible for tuning their equipment prior to the show! There is a programming track provided for this purpose; there may also be a member with a laptop computer running DCC programming software.
- G) Members shall clean the wheels of their engine units prior to running on the layout. There will be cleaning fluid provided for that purpose. Check wheels periodically for grime buildup.
- H) Keep the volume on sound-equipped locomotives to the minimum required for given sound levels in the exhibit hall. Do not generate excessive irritating smoke from locomotives so equipped.

Section 2. OPERATION: Operation of trains shall conform to the following:

- A) Only an operator fully familiarized with the layout controls and DCC system will be allowed to run trains. The Show Operations Director has full authority over layout operation and is responsible for schedules (if provided), track assignments, dispatching, and making sure members are actually running when scheduled.
- B) In the absence of a dispatcher, only three operators will be allowed to run trains at a time: two on the mainlines, and one running the industrial line or yards. Operators are not allowed to "steal" another operator's train or do something to deliberately cause an accident, however minor it may be.
- C) Two or more operators running two or more separate trains on a common mainline is only allowed when a dispatcher is present and when all operators and spotters know exactly what is transpiring. Playing "chicken" with opposing trains is strongly discouraged.
- D) During an operating session one operator may double as a dispatcher, or (preferably) an additional person shall act as a dispatcher if conditions merit. All operators shall follow that dispatcher's instructions. When a separate dispatcher is used, additional operators may be authorized over and above the basic three.

- E) All operators (“engineers”) and the dispatcher shall wear the wireless headset radios during their time slot; such radios are provided by the Club. If the batteries go dead, replace them immediately with fresh or fully-charged batteries; place dead rechargeables back on the charging units. Helpers, spotters, and other active participants are strongly encouraged to also wear headsets if available. Dispatcher shall assign the channel based upon interference from other organizations and building conditions. (Do NOT talk over a channel being used by another organization!)
- F) During a show, an operator may run his or another member’s equipment, provided permission is granted. In no case shall an operator run another member’s equipment unless that member is present or otherwise authorizes such use. The operator then assumes all responsibility for that other member’s equipment.
- G) Trains shall be limited to approximately the length of the longest layout side; anything longer requires special dispatcher clearance and additional “spotters” around the layout. Passenger trains shall be limited to the length of a siding or yard track they can “park” on. In general, if you cannot keep track of the entire train at a glance, don’t run it that long! Keep in mind that these are **maximums**; if a long train is running poorly, shorten it!
- H) Unless manpower is short, operators should not be required to run trains longer than two hours at a time. If there are several operators available to rotate positions, cut the time down to give everyone a chance to run. For larger shows, a printed running schedule with trains rotating on a staggered timeline is encouraged; the Show Operations Director may complete this or assign someone to complete it prior to the show.
- I) If a running schedule is provided as above, members are required to follow that schedule! If you cannot, and wish to trade slots with another member, **inform the dispatcher** or an officer! Members must be ready to operate a train when their timeslot is up; timeslots should not be spent setting up your train! Operators **must be present** and alert at all times during their timeslot. If you have to go to the restroom or leave for some other reason during your timeslot, find another member to take over for you while you are gone; inform the dispatcher immediately! **Do not walk away from your train!** Operating your train from a “remote” location (where it is not obvious who is operating or where you are essentially hidden) for “kicks” is strongly discouraged.
- J) Regardless of who is running trains, one owner’s equipment shall not be run longer than two hours at a time, unless rolling stock is in short supply or special permission is granted by the dispatcher. When equipment will not be running for a while, it shall be stored in the “HOG” yard, main yard, or taken off the layout.
- K) Dispatching and staging must be done from inside the layout. Engineers using tethered throttles must operate from inside the layout as well; engineers with wireless throttles may operate from the outside perimeter. Spotters and helpers may assist from inside or outside, as conditions permit.
- L) A Digitrax DCC system is provided; however, bring your own throttles or arrange to borrow someone else’s. Make sure the wireless radio frequency and channel matches the Club’s (it may not be set to default). There are spare & rechargeable batteries provided for the throttles.
- M) Members may start “taking down” trains and packing away one hour prior to the dismantling of the layout, host permitting. Trains, regardless of consist, shall be limited in length one hour prior to take-down to the length of a siding or yard track they can be “parked” on. Please make sure at least one train is running until the close of the public show!
- N) Members may leave equipment on the layout overnight for two-day shows at their own risk. In such a case, all trains must be taken off the mainlines into a yard or siding.
- O) Prior to running **anything**, operators shall clean the mainline trackage at the very least; track “erasers” and cleaning cars are provided. (Typically, this step will be part of the setup process anyway.) The track-cleaning car(s) should be run periodically during a show to keep the rails and wheels clean.
- P) After the setup process is complete, immediately run a “test train” around the layout to help locate possible trouble track and electrical problems. Typically such a train should be “finicky”, like an intermodal or passenger set.
- Q) Note that for operations, “North” is out from the layout towards the public aisle. Therefore, “Eastbound” is to your right and “Westbound” is to your left if you’re inside the layout. Mainlines may be referred to as “A, B, and C” or “North, South, and Industrial”.
- R) If exiting the layout through the liftgate during operation, please be on the lookout for approaching trains. Do not unnecessarily stall operations by leaving the liftgate in the open po-

sition! If a long train is keeping the liftgate down, exit by going underneath an uncluttered module, watching for public that may be standing in the way.

Section 3. GENERAL: The following general rules shall be observed during an event or show:

- A) All members are expected to help set up and take down the layout unless circumstances prevent it. The Show Operations Director shall either assign specific duties or come to some general organization as to who-does-what. Members are responsible for packing up their own rolling stock and other ancillary equipment.
- B) All members shall wear their club shirts and/or nametags during a show, particularly if operating. All members are expected to be clean and reasonably well dressed. For a few dollars, Greg Amato can embroider the NEWER Industries logo and your name on any shirt you provide; Club standard is a medium-blue polo, however any suitable "casual" shirt may be used (no tee-shirts please!).
- C) All members present at a show are responsible for security! This applies especially to keeping track of young children and over-exuberant train buffs. Watch all equipment as if it were your own.
- D) When approached with questions, answer courteously. If you cannot answer a question, refer the person to someone who (probably) can. Accept donations graciously but note that such are not tax-deductible at this time. Make sure the Secretary or President gets all application and membership forms.
- E) Any contact with the host organization or building management and security shall be the responsibility of the Show Operations Director (and/or the officers) unless otherwise delegated by the Board of Directors.
- F) When observing from outside the layout, members shall be ready to assist operators in the case of derailments, other train problems, and security.
- G) Any eating shall be done at a table inside the layout, preferably somewhere other than a workstation around equipment or tools. Do **not** eat or place food or beverages directly on the modules. Throw away all trash and keep the area clean and tidy.
- H) Keep equipment boxes, coolers, storage boxes, etc. out of the way and under the layout if possible. Keep clutter, casual seating, and work areas from getting in the way of operators.
- I) All equipment repairing or model building shall be done at a table inside the layout, unless it directly affects your module or if you are demonstrating to the public. Use chairs provided by the host facility; stools are reserved for the operators.
- J) Do not attempt repairs or modifications on another member's module or equipment -- inform that member, get permission, or leave a note. Refer problems with common club modules to the Show Operations Director prior to any disruption of layout and club activities. If it will affect operation, notify the dispatcher.
- K) Respect all other members' equipment, rolling stock, and tools. Return all borrowed tools to their place of origin.
- L) Sales of a member's equipment are the responsibility of that member, and then only if the host permits such sales. If you collect money from a sale, make sure that money gets to the owner of the equipment sold.
- M) If a visitor requests that something of theirs be run on the layout, it shall be checked for NMRA standards and Kadee couplers, and permission from the dispatcher or operator shall be obtained before placing on the layout for running. If a member of the public approaches the Club to test a newly purchased locomotive for them, place the unit on an unused yard track and run it back-and-forth; do not insert it into a train.
- N) Act responsibly, courteously, and logically. Above all, have fun and allow everyone else in the Club to have just as much fun!