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### President's Message Geof Smith

Time and again I hear pleas for help constructing Ntrak modules. Some of us don't have the tools, or the ability to cut anything approaching a straight line, but fortunately others do. If you need help, ask. Don't just give up and say, "I can't do that." This is what being a club is all about: helping each other.

Speaking of modules, I came across a set of step-by-step instructions for the construction of lightweight modules that may be of interest. They were developed by the North Raleigh (North Carolina) Model Railroad Club, and can be found on-line at [https://nrnrc.org/sites/default/files/publications//lightweight\\_ntrak\\_module\\_construction.pdf](https://nrnrc.org/sites/default/files/publications//lightweight_ntrak_module_construction.pdf). The modules use a foam top and luan plywood for sides, but look to be strong enough to withstand the inevitable racking that can occur during show set-up. Check it out! What's nice about these modules too is that they are designed to have fold down legs, eliminating loose hardware and speeding set-up at a show. I'm sure there are other plans available for lightweight modules, and I'd welcome anyone that has found what they consider a good set of plans to share them with the group.

Roland has published this year's show schedules for Ntrak, Ttrak, and MaiNe Track, and I really encourage you to contact the show coordinator and participate where and when you can. Let's see if we can get everyone in the club to bring a module to at least one show this year!

And now, for something completely different . . .

Nobody – and I mean nobody – wants to think about the end of the line, but eventually we'll all get there. So here are a couple of thoughts to consider:

- Keep an inventory of your collection and keep it in a safe location available to the estate executor when the time arises. A simple table listing each piece of equipment, manufacturer, and recommended disposition (a specific person or club you would like to direct the model toward). Be sure to include modules and your layout and all its various elements - like the DCC system, etc. This inventory is important because chances are your estate custodian will know very little about what you own or the details of your hobby.
- Consider donating some or the entire collection to a non-profit organization such as the Boy Scouts or Girl Scouts. Some troops have modeling groups and could possibly benefit from the use of the donation. It could also be the spark of inspiration of young future modelers. Also consider a donation to a local town or county museum. There could be potential tax advantages to these types of donations, so consult a tax professional before proceeding.
- Donate your module and/or some or all of the collection to a modeler who is just starting out. This will insure that the equipment is displayed and continued to be enjoyed.
- Sell the collection. This is perhaps the most difficult and time consuming thing to do. Please understand that some equipment in the collection may be of value but some will be very common and not have much (or any) residual value. (continued page 2)

## T-TRAK Train Show Schedule - 2016 & 2017

If you wish to be part of the T-Trak layout contact Fay Chin Show Coordinator at e-mail [faywchin@gmail.com](mailto:faywchin@gmail.com)

- September 25, 2016.** Old Colony Model Railroad Club, Taunton Holiday Inn, Taunton MA  
Show 10:00 am to 3:30 pm
- October 2, 2016,** Peperell Siding Model Railroad, Varnum Brook Elem. School, 10 Hollis St., Pepperell MA  
Show 10:00 am to 4:00 pm
- October 8, 2016.** North Shore Model Railroad Club, American Civic Center, Main St., Wakefield MA  
Show 10:00 am to 3:00 pm
- October 29-30, 2016,** Southshore Model Railroad Club, 19 Fort Hill St., Hingham, MA  
Show Sat & Sun 10:00 am to 4:00 pm
- November 5, 2016,** Wellesley Community Train Show, 219 Washington St., Wellesley, Ma  
Show 10:00 am to 3:00 pm
- November 6, 2016,** Metro South Train Show, Temple Beth, 671 North Main St., Randolph, MA  
Show 10:00 am to 4:00 pm
- November 19-20, 2016,** Greenberg's Train and Toy Show, Shriners Auditorium, Wilmington MA  
Show Sat & Sun 10:00 am to 4:00 pm
- December 3-4, 2016,** NMRA HUB Div Model Train Show, Best Western Royal Plaza Trade Center, Marlboro, MA  
Show Sat & Sun 10:00 am to 5:00 pm
- January 28-29, 2017,** Amherst Railway Society Railroad Hobby Show, Eastern States Exposition Fairgrounds, West Springfield MA  
Show Sat 9:00am to 5:00pm - Sun 10:00am to 5:00pm
- February 11-12, 2017,** American Heritage Museum, 33 Marrett Rd., Lexington MA  
Show Sat 10:00am to 4:30pm - Sun noon to 4:00pm
- March 11-12, 2017,** Southshore, 19 Fort Hill St., Hingham, MA  
Show
- March 18-19, 2017,** Greenberg's Train and Toy Show, Shriners Auditorium, Wilmington MA  
Show Sat & Sun 10:00 am to 4:00 pm
- April 2017,** NMRA Spring Training, TBD
- April 23, 2017,** Hooksett Lions Model Train Show, Crawley Middle School, Hooksett NH  
Show 10:00 am to 4:00 pm

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Finally, please share with your spouse or executor the names of this club's officers. We'd be honored to help you find a happy home for your railroading legacy – and maybe even provide a few extra dollars for your estate.

## 2016-2017 NENtrak SHOW PARTICIPATION SCHEDULE

### October 2, 2016 Pepperell Siding Show, Varnum Brook Elementary School, Pepperell, MA

Set-up: 7:00am - Show 10:00am to 4:00pm

Coordinator: John Doehring - 978-433-6337

### November 19-20, 2016 Great Train Expo, Shriners Auditorium, Wilmington, MA

Set-up: Fri 1:00pm - 5:00pm - Sat 7:30am

Show Sat 10:00am to 4:00pm - Sun 10:00am to 4:00pm

Coordinator: Frank Dignan - 508-866-9660

### December 3-4, 2016 - NMRA HUB Division Model Train Show, Best Western Royal Plaza Trade Center, Marlborough, MA

Coordinator: Rob Selberg (MaiNtrak) 207-272-0390

### Jan 28-29, 2017 Winterfest, Springfield, MA Amherst Railway Society - Big Railroad Hobby Show

Big "E" Exposition Center, West Springfield, MA

Set-up: Fri noon to 5:00pm & Sat 7:00am to 9:00am

Show Sat 9:00am to 5:00pm - Sun 10:00am to 5:00pm

Layout Coordinator: Dan Pawling Jr., 617-244-5261

Winterfest Chairman: Bob Fallier - 603-465-3785

### Feb 11-12, 2017 National Heritage Museum, Lexington, MA

Set-up: Fri 1:00pm - 4:30pm & Sat 7:30am to 10:00am

Show Sat 10:00am to 4:30pm - Sun noon to 4:00pm

Coordinator: Bob Pawlak - 781-862-2485

### March 18-19, 2017 Great Train Expo, Shriners Auditorium, Wilmington, MA

Set-up: Fri 1:00pm to 5:00 pm - Sat 7:30am

Show Sat 10:00am to 4:00pm - Sun 10:00am to 4:00pm

Coordinator: Frank Dignan - 508-866-9660

### April 23, 2017 Hooksett Lions Club, Cawley Middle School, Hooksett, NH

Set-up: 8:00am - Show 10:00am to 4:00pm

Coordinator: Geof Smith - 603-762-1874

Show Dates **Subject to Change**...Check Newsletters for Updates. Please check schedule for errors and send up dates to Roland at: [northeastntrak@msn.com](mailto:northeastntrak@msn.com) Thanks for your help.

## MaiNe TRACK

**Nov. 7, 2015,** Auburn Middle School, 38 Falcon Dr., Auburn, ME Set-up 8am Layout 8x16 ft.

**Dec 4-6, 2015** Hub Division Model Train Expo, 181 Boston Post Rod, Marlborough, MA Set-up Friday 3pm 12x24 ft layout to include 16 ft of Northeast NTRAK straight modules (see Hub Division web site for Hotel info and discounts).

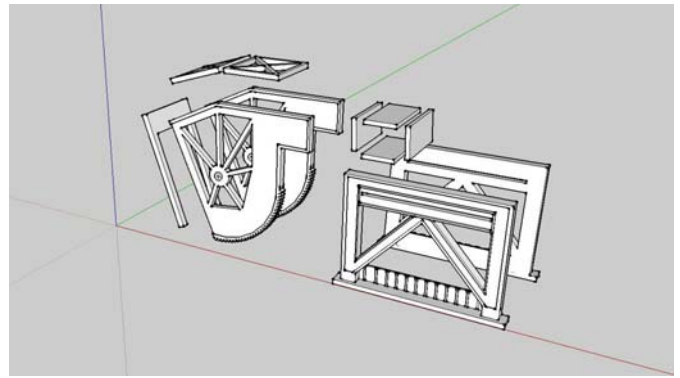
**Jan 29-31, 2016** Winterfest at the Big E (details depending on Layout coordinators needs)

**Apr 23, 2016** Mount Ararat High School, 73 Eagles Way, Topsham, ME Set-up 8am Layout 12x20 ft.

\*\*\*For the 2 Maine shows contact Rob Selberg, 207-272-0390 ahead of time as we try to meet for breakfast. Times and locations of that may change.

## Making a 3D printed Operational Drawbridge By Fay Chin

For 45 years, I've been taking the commuter train into Boston, Massachusetts and crossing a drawbridge over the Charles River to North Station. I decided to build a 3D print model of the drawbridge for my T-TRAK layout. The two Charles River Bridges are double track railroad single-leaf, rolling bascule bridges connecting North Station to the [MBTA Commuter Rail](#) lines in northern Massachusetts and the Amtrak train to Maine. The 92' span bridges, which opened in 1931, were designed by Keller & Harrington of [Chicago, Illinois](#) and built by the Phoenix Bridge Company of [Phoenixville, Pennsylvania](#). Each bridge uses a 629-short-ton (a short ton is a unit of weight exactly 2000 pounds) overhead concrete counterweight. Originally, there were four bridges, but only two of them remain. The following is a photo of the two remaining bridges in the raised position.



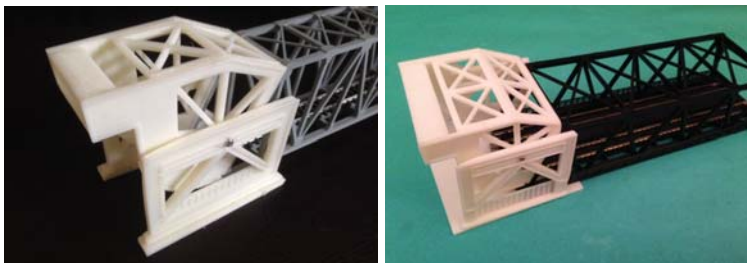
**3D Printer Bridge Assembly Diagram**

To make the drawbridge operational, I used a servo motor with linkages to raise and lower the counterbalanced bridges. Then, I had to design and build a pulse width modulating circuit to operate the servo motor. The pulse width modulating circuit uses a basic 555 timing integrated Chip (IC), capacitor, few resistors and a potentiometer (variable resistor). The servo will track the position of the potentiometer which varies the number of pulses. The circuit, also known as proportional control, allows the bridge to be positioned at prototypical speed. Below are photos of the proportional circuit and control box.



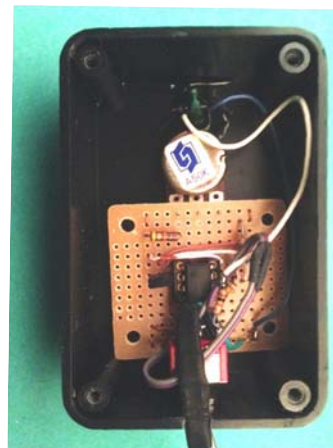
**Photo of the Two Charles River Bridges.** The single track in gray is their model 20-434. To the immediate right is the double track in black is their model number 20-438.

Instead of building the complete bridge, I decided to build motorized adapters to fit commercially available Kato bridge model 20-434 (single track) and Kato bridge model 20-438 (double track). The adaptors were designed to be glued to the Kato bridges without modification to the bridges. The photos below show both the single and double bridge 3D printed adaptors.



**3D Printed Adaptor for Kato 20-434**

Using the drawbridge photo above, I drew the adaptor parts with a free downloaded 3D Sketch-up Make software. After printing all the 3D parts, the components were assembled and glued together (see the assembly figure below) including the Kato bridges. The adaptor and bridge pivot points were then screwed to the base and free to rotate.



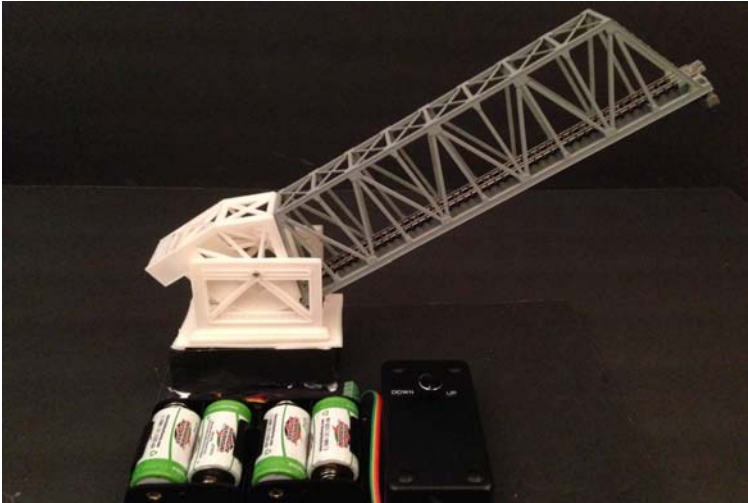
**Proportional Control Circuit**



**Control Box**

This project took a few weekends from design to fabrication. Below is the completed bridge ready for painting and installation on a future T-TRAK modules. If you have any questions or would like a 3D printed model, contact me at:

[faywchin@gmail.com](mailto:faywchin@gmail.com)  
(continued on next page)



**Completed Operational Drawbridge**

As a point of interest, Boston Four Point Channel has four different type of bridges: Swing Bridge (90 degree rotation), Vertical Counter Weight Lift Bridge, Slide Bridge (45 degree slide out diagonally), and a Concrete & Steel Bridge. Below are some photos of the different bridges.



**Slide Bridge with side tracks**



**Concrete and Steel Bridge**



**Swing Bridge**



**Vertical Counter Weight Lift Bridge**

**Ernie Pooles Home Layout**

