

The Switch Tower

Vol. 26 No 1

January 2019

Seacoast Division NMRA www.seacoastnmra.org



Seacoast Division NMRA Winter Event Saturday, January 5, 2019, 10:00am-2:00pm **Westbrook Community Center** 426 Bridge Street, Westbrook,

Inside Contents

♦	President's Lantern	2
*	Winter Event	3
♦	Erich's Electronic Note's	5
*	Operating on the B&M	10
*	AP Report 2018	14
*	Membership Siding	14
*	Editors Ramblings	<u> 16</u>
*	New Members	17
*	Timetable	17
٠	Contact List	18



All Photo's of Prototype trains are by Harry Gordon . Many Thanks to him for their use. Editor

The President's Lantern by Tage Erickson

I have been a model railroader since my parents gave me my first train set for Christmas, when I was very young. I can still remember the Athearn hustler locomotive with the rubber band drive.

So here I am about 60 years later, trying to build my own model railroad empire and embarking on a hopefully successful tour as your Division President. Just being able to be a part of this Division has been a great help to me. Meeting as many of you as I can since I first walked through the door, has been absolutely wonderful. I am extremely grateful for your friendship and mentorship over the past few years.

As most of you know, our 2018 President, Chip Faulter, had to resign his position this year due to medical issues. Chip has been undergoing chemo-therapy for treatment of his cancer condition. I am happy to report that the treatments have had some success and the tumor on his pancreas has been significantly reduced. The final outcome of all this is still to come, once the treatments are complete.

My sincere thanks go out to Chip for all his hard work and devotion to our hobby and this Division, as he continues his battle with cancer.

As of this writing, I am the only candidate for President for the coming year. Glenn Mitchell has agreed to run for Vice President. Unless there are some last minute candidates, the Board of Directors will be electing us to these positions. At the Annual Meeting, 3 positions on the Board of Directors will be up for election. As of this writing, the 3 candidates are Mike Pedersen, Dave Kotsonis, and myself, Tage Erickson.

Over the years, the Seacoast Division has been blessed with excellent directors. Two of our best directors will be stepping down from the Board, effective January 5, 2019. Those directors would be Dave Sias and Larry Cannon. These two gentlemen have been solid supporters of the Division for many years and we will certainly miss their presence.

Planning is underway for a 2019 Maine Layout Tour. The tentative dates for the tour is the weekend of September 29-30, 2019. Mike Pedersen has agreed to continue the coordinator role supported by webmaster Stan Moody and a coordinating committee. The Seacoast Division NMRA has been the primary sponsor of the tour and I will be asking the BOD to continue this support, to include some modest financial support.

As the Seacoast Division President, I am now considered a Director for the Northeastern Region. I sit in on the NER BOD teleconference calls. Currently, there are several proposals on the table to change the way the NER treasury uses its money and conduct its business. An NER Finance committee has been established to study these recommendations, and will report its findings during this year. I will have more details at a future date and time. The NER is also considering changing its logo.

Thanks to Glenn Mitchell for organizing the Quarterly events, Thanks also to the presenters and clinicians as well as the Layouts hosts who made the events a great success.

Please consider volunteering a bit more of your time, in order to help the Division grow stronger. We have so many talented members out there. Your knowledge could be invaluable to other members who share the passion of this hobby. We need clinicians for our Events and help for the various committees that we have. We have a very strong and vibrant Division. Within the NER, we are the 3rd largest division with membership, and the 2nd largest in physical area. You should all be very proud of the talent and accomplishments of our members. My focus has always been to have each member take away from each event, additional knowledge that can be used to help further your enjoyment of our great hobby. Your time is valuable. I respect that. We had a great year in 2018, so let's have a productive and enjoyable 2019 as we move on. Please have a very Happy New Year! I hope to see as many of you as possible at our Winter Event on January 5,2019 in Westbrook, Maine.

Seacoast Division Winter Event by Glenn Mitchell

Seacoast Division Annual Meeting and Election

Every year three of the Seacoast Division's nine Directors are elected to three year terms. The nomination committee has put together a great slate of candidates – Tage Erickson an incumbent Director and new candidates Date Kotsonis and Mike Pederson. Any interested members are invited to throw their hat in the ring and run for a Director position.

SMMRC Module Display

The Southern Maine Model Railroad Club will set up a few of their modules. Seacoast Division members are invited to bring in their locomotives and try them out on the modules

Into the Woods: Some Notes on New England Trees and Forests by Dr. Jack Lutz, Forest Economist.

On model railroads, rivets get counted and buildings get compressed, but the trees and forests are often an afterthought. Jack will present some notes on modeling New England forests based on the prototype. Topics to be covered include Pointy Trees, Edges and Tree Heights—and why they matter.

Smartphone Throttle with Rasberry Pi by Dave Delorey

Dave will present a low cost alternative to proprietary technology DCC throttles (e.g. Digitrax DT500D, NCE-Procab, Lenz LH100, MRC Prodigy, etc.). Dave operates DCC using a smartphone and a \$35 Rasberry Pi 3 Model B small format computer instead of a proprietary DCC device.

Modeling the Paper Industry by Chuck Hastings

Chuck Hastings will provide an overview of the intricacies of modeling a modern day paper mill. For years the backbone of railroading in Northern New England has been the forest economy and even to this day pulp & paper mills continue to rely heavily on rail service as an important part of their supply chains. Depending on the production capability and type of mill, Chuck will break down various railcars that are common to mills, as well as different raw materials that come in and outbound products that exit the mills. Further, he will provide concept of mill layouts and how they function at a broad level.

Show and Tell and Ask: Everyone loves to see the modeling of our members. If you have something that you would like to show us, please bring it to the meeting and we will give you a few minutes to describe your efforts. If you have any modeling questions for the group, please bring those, as well. We have plenty of experts in attendance and we can certainly get you some answers to your questions.

For Sale!: There will be a table set up for any members that wish to buy/sell any surplus modeling items they may have. If you have any model railroad related items (loco's, rolling stock, buildings, etc.) that you

don't need and wish to sell, you are encouraged to bring them to the meeting. Please put a tag on each item with your name and the asking price. Maybe one of your fellow members might be interested!

Seacoast Division Winter Event by Glenn Mitchell

Layout Tours - Please take time to visit these layouts on your way home from the Fall Event!

Rob Selberg's St. James Sub (N)

The Port Asbestos Terminal "St. James Sub" is an 8x12 N scale layout built for operation, small trains but plenty of action! The layout is based "somewhere" in the northeast and was once a connection between the Canadian pacific and Conrail (now CSX). The layout can support 5 operator with none of them bumping into each other. The layout boasts an active port with car float operation, a midsized paper mill, a local town switch job, a yard switcher, and a road job (running trains to the port and back and the mill and back). **Lou Champagne's Cape Porpoise & Western (HO)**

The year is 1957 and the 32' X 13' Cape Porpoise & Western (CP&W) is a freelanced short line based in Southern Maine with connections to the Maine Central, Boston & Maine and the Canadian National. The CP&W's mainline runs from Westbrook, Maine to Dover, New Hampshire (N/East - S/West). The Maine Central connection in Westbrook allows the CP&W to utilize MEC's "Mountain Division" trackage for its northern routes to Berlin, NH and Newport, Vt. (via Lancaster, NH). The railroad's focus is on operations with 25-30 trains running in a 24 hour period. Traffic includes mainline way freight & passenger trains, local freight, passenger & commuter trains as well as several extras. In addition to freight, there is a lot of "head-end" traffic, RPOs, REA express reefers & reefers that require icing. Motive power is both steam and early diesel, controlled by NCE DCC, with 95% of engines having sound. Operations utilize the Micro-Mark car card system as well as other local forms plus a "fast clock". There are many structures on the layout and scenery ranges from minimal to very complete. Enter through the bulkhead. Welcome Aboard!

There will be a 30 minute break for lunch and socializing. Bring your lunch or visit food establishments within close proximity to the meeting.

There will be a drawing for door prizes, too!

A "Regular" Board of Directors Meeting will precede the program at 8:30 AM.

A brief Supplemental Board of Directors Meeting will follow the general meeting to address the appointment of officers per the bylaws.

Come to the Winter Event and Share the Fun of Model Railroading!

Next Event: The Spring Event will take place on Saturday, April 6, 2019 at the Newington Old Town Hall, 336 Nimble Hill Rd., Newington NH. *Mark your calendar and save the date!!*

ERICH'S ELECTRONICS NOTEBOOK

HUB Module Group Module Accessory DC Power Supply, Part 1

The HUB Module Group standard includes a low voltage alternating current (AC) accessory bus that each module can use for various low-voltage accessories. A few years ago, the HUB Division's RailFun program included a clinic on building an inexpensive linear regulated DC power supply that could be used to provide power for modules and many other applications. This article builds on that idea and describes a DC accessory power supply design for modules with more extensive DC power needs.

When you start designing a module and add up all of your DC power needs, it's not difficult to come up several voltages needed to run your signals, block detectors, cpNode/SMINIs, switch machines, building illumination, motors for automation, etc. Multiple devices that use the same voltage may use the same power supply—although I'll give you an example later where this may not be a good idea. Every different voltage requirement must be accounted for.

The HUB's AC accessory bus is designed to provide a significant amount of power to the layout but it's probably a good idea to try and minimize the amount of power your module requires by not burning power unnecessarily. One of the problems with using linear voltage regulators is that they burn power that's proportional to the difference between the input voltage and the output voltage. The lower the regulated voltage, the more power is wasted as heat in the regulator. One solution to this problem is to use a device called a switching regulator. These devices can easily operate at efficiencies well over 90%. Within the hobby market there are many power supplies that incorporate switching regulators available at affordable prices.

Another issue to consider when you're designing the DC supply needs of your module is how you might want to be able to isolate accessories for debugging purposes. When you're at a show and you're faced with things not working as expected, it would also be handy to have some kind of status display to let you know that everything is operating properly.

This article will take you through the design of a modular, flexible, efficient, and debug friendly power supply for your next module project. In part 1, I'll walk through the design and in part 2, I'll cover the printed circuit board and the power supply assembly.

AC-DC Rectifier

As I mentioned above, the accessory bus that comes into each module provides low voltage AC power. This power is in the range of 18-24 volts AC (approximately). The first thing you need to do is convert AC to DC with a rectifier. This will give you an unregulated DC power supply that you will need to regulate down to each of the voltages that you need for module. If you need more than one DC regulator, then it makes sense to use a single rectifier ahead of the individual DC regulators. In this design, I incorporated a main power switch that's double pole, single throw (DPST) which opens both AC wires when the switch is open for complete isolation. There's no reason not to oversize the bridge rectifier and a nice large capacitor to provide a decent amount of filtered DC to the regulators. The following figure shows the diode bridge and capacitor that makes up the rectifier portion of the circuit. The dots labeled MH1-4 are the PC board mounting holes which are grounded.

ERICH'S ELECTRONICS NOTEBOOK

DC Ammeter

Each DC regulator module provides a meter that measures the input voltage, output voltage, and output current. An external DC ammeter (shown below) provides a total amount of input current to the power modules. This should be used to monitor the total power currently being consumed by all the power supplies. A DC ammeter is inserted in series between the rectifier and the rest of the ground to the board (AOUT and AIN in the circuit diagram below). The DC ammeter I chose also requires a small amount of 12VDC which is provided by a small linear regulator (IC1) shown.

Solid-State Circuit Breakers and Status LEDs

I incorporated solid-state circuit breakers (also known as PTC fuses) to cut the power if any of the DC regulators pull too much current. The circuit board is designed to accommodate a choice of either 1.6A or 2.5A circuit breakers. The nice thing about PTCs is they can be reset by simply removing the input power briefly (i.e. turn off the power switch).

One problem with these PTCs is they don't have any visible indication when they trip. So I designed a small circuit that monitors the voltage at the output of the PTC and turn on a bi-color LED to let you know if that breaker has tripped (glows red) and when the DC output is ok (glows green). Each DC regulator module has its own PTC.

DC Switching Regulator

The following image shows a DROK 180051US Numerical Control Voltage Regulator DC 5-32V to 0-30V 5A Buck Converter, which has an input voltage range of 5-32VDC and can output 5-32VDC. The regulator can supply up to 5 amps (limited to 2 amps without a head sink). I found these on Amazon.com but they were much less expensive ordering them directly from the manufacturer. At the time of this writing these were priced at \$6.38.

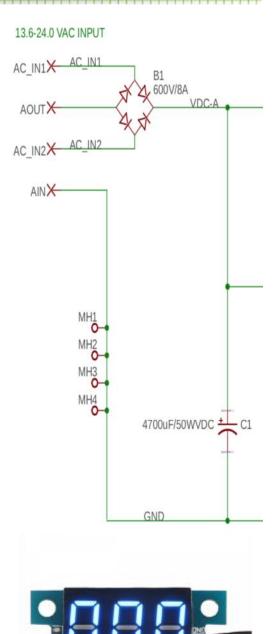


Figure 2 DROK 100245 DC Ammeter

ERICH'S ELECTRONICS NOTEBOOK

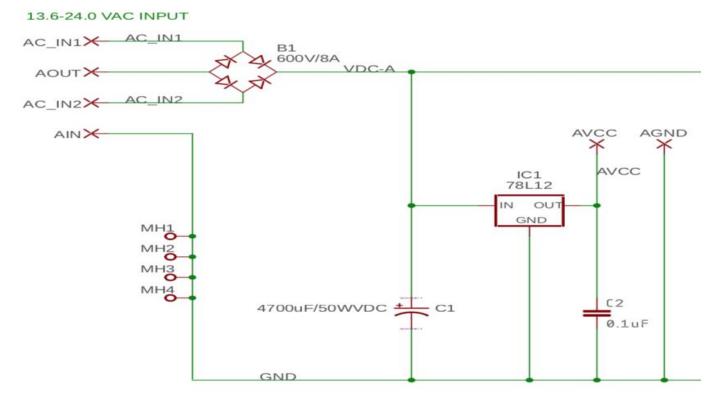


Figure 3 Ammeter power and series connection

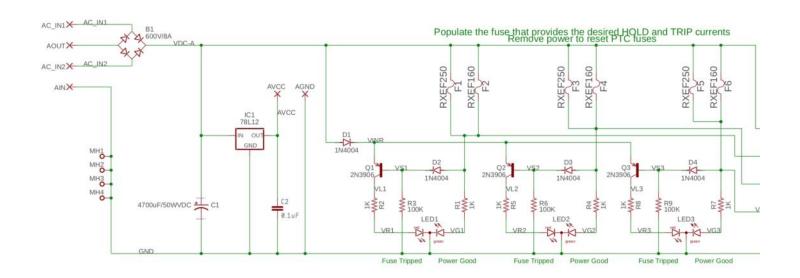


Figure 4 PTC fuses and status LED circuit

ERICH'S ELECTRONICS NOTEBOOK

This module has some really convenient features. The buttons allow you to accurately set the output voltage. The voltage digital display can show either the input voltage or output voltage and current by pressing the pushbuttons as shown—the input and output voltage indicators tell you which voltage is being displayed. The buttons and LEDs are documented below. The rectifier circuit board provides screw terminal connections for each DC regulator and at the edge of the circuit board is a single modular screw terminal connector that makes a convenient quick disconnect for all of the DC connections to the module.

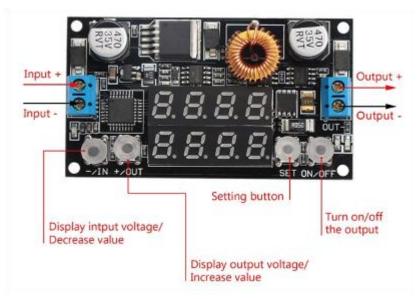


Figure 5 DROK 180051 DC Voltage Regulator

State	Left LED	Display	ı	Right LEDs	Output	Comment
	Indicates whether meters show input (red) or output (off)	meters show input or	Turns blue if Output is on	Turns red if meters are indicating output voltage and current		Press Button 4 to tum output on and off Press Button 1 to show input V & C (left led tums red) Press Button 2 to show output V & C
A	Red	Input V & C	Off	Off	Off	Press Button 4 to turn on output (State D)
В	Off	Output V & C	Off	Red	Off	Press Button 4 to turn on output (State D)
С	Off	Output V & C	Blue	Red	On	Press Button 1 to show Input Voltage, State D
D	Red	Input V & C	Blue	Off	On	Press Button 2 to show Output Voltage, State C

To set Voltage or Current, Press Button 3 alternatively, Then Press Button 1 to decrement, Button 2 to increment, Press Button 4 when done. The output voltage and current can be set whether the output is on or off

Figure 6 DROK 180051 Switch and LED Descriptions

Low Voltage AC Input to DC Output

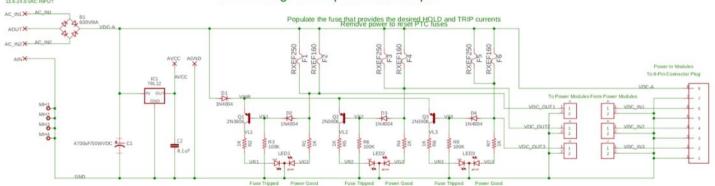


Figure 7 Complete circuit board schematic

ERICH'S ELECTRONICS NOTEBOOK

Selecting Voltages

Once you have determined how many different voltages you need, the next step is to figure out how many power modules you need. The first thing you need to check is how much current each supply needs to provide. If you have the documentation for your accessories, it should give you some idea of the power requirements. If you don't have any documentation you can try Google and if that doesn't help you could use an ammeter and measure the current.

The regulator specification states that the maximum switching current is 5 amps. What the specification doesn't tell you is how much power the module will provide. DC power is simply the product of the volts times the amps. So, if you have set the module for 12 volts and you need 2 amps, that would be 24 watts $(12 \times 2 = 24)$. All that being said, it's highly unlikely that you'll need more than 2 amps to power your accessories. The one thing I can think of that would test this limit would be a long string of LEDs (i.e. strip lights). But the signals, switch machines, and cpNodes/SMINIs draw much less than that.

A consideration when designing your power supply is the type of device you are powering. It's generally not a good idea to run a motor off of the same regulator that's powering a computer. Motors can produce a fair amount of noise on the power lines that can confuse the crap out of a computer. This isn't usually a problem because the motors tend to use a different voltage but it's something to keep in mind.

Another example of this separation would be for supplying power to the LEDs in your signals. We typically use either 12V or 5V to drive the LEDs but you might find it handy to use a separate supply and slightly adjust this voltage up or down to control the brightness of the signals. Look for a future article on how to select the correct voltage and resistor values for LEDs as well as how to connect them.



By Dave Sias

Operating a model railroad prototypically while having a good time is a great way to enjoy the hobby with others. Here are a few snap shots of some friends taking part in a session at the Boston & Maine model railroad in Meredith, NH. We don't claim to be "Pros" at this but we have fun pretending to be real railroad men for a few hours (we actually have two former real railroaders in our group). If you think you would like to join us you are always welcome! Just get in touch with Dave Sias at 603-303-5365.



: Engineer Nelson Kennedy shuttles cars while conductor Richard Parshley (a former real RR conductor) studies his switch list. They are working the Lakeport Switcher job. Traffic is getting busy in Woodsville. Buch Taggart brings in the Barre & Chelsea mixed from Vermont. New operator Bill Clark glides the crack passenger train "The Alouette" to a stop in front of the station.



By Dave Sias



: Woodsville Yardmaster Matt Keiser has become an expert in Woodsville. In 1954 this was still a real Railroad Town.



"Real" engineer Tony Keegan takes a photo op in Ashland while John Newick works his train on the Lincoln Branch.

By Dave Sias



: Lakeport can be a busy place on this model railroad as it was in real life in the 1950's. New operator Tom Fuller watches the action while John Newick switches Lakeport with the "Pompy", a train that originated in White River Junction . "Little John" Tyndall waits for his Paper Train to appear from around the corner. This early morning train brought newspapers, empty milk cars and mail to the many small towns north of Boston.



By Dave Sias



"Little John" has brought the Paper Train to its final destination in Woodsville. Yardmaster Matt will break it down and leave one baggage car on the station track, which later in the day will be picked up by train 4301 and delivered to Berlin, NH.: Tony! Ya can't run a train while "unplugged"!



AP Report for the Seacoast Division 2018 By Larry Cannon and Tom Oxnard

SEACOAST DIVISION 2018 ACHIEVEMENT PROGRAM ACTIVITY REPORT

Certificates - 7

Chip Faulter - Official

Paul Lessard - Structures

John McHugh - Volunteer, Electrical, Civil

Peter Mckinney - Dispatcher

Glenn Mitchell - Dispatcher

Golden Spikes - 7

Bruce Campbell, James Ehlen, Tage Erickson, Nelson, Lemay, Mike Pedersen, Rich Teer, Brenna Whitney

Additionally, the AP Coordinators and other volunteers have provided program support for Divisional meetings and individual member counseling and advice. Activity since the Fall Seacoast meeting includes Certificates for Paul Lessard and John McHugh (Civil). Congratulations to all.

Membership Siding: Lou Champagne

The start of a new year is always a good time to do some reflecting. Your Division is now up to 182-184 individual members as well as 6 member Clubs. My hope for 2019 is to see that number grow to 200+ ... and, you can help. Most of us probably haven't thought much recently about all the benefits we get by being members of the NMRA. That being the case, I wanted to do a quick review of those benefits for you ... the list is long, plus everything you get from the Seacoast Division is a bonus !! Please keep these benefits in mind when you're talking with friends & acquaintances who currently don't belong to the NMRA ... encourage them to join or at least attend one of our meetings ... they'll be glad you did !! Should you have any questions or desire materials to use, let me know. I'll also be happy to follow up personally with anyone you recommend who has expressed some interest in joining the Seacoast Division.

Now ... on to your benefits ...

Camaraderie: <u>Fellowship & Assistance</u> from 18,000 members worldwide and 182+ Members and 6 Clubs locally.

Industry Standards: For over 80 years, the NMRA has set the standards of the model railroad industry; easing new product development and compatibility from manufacturer to manufacturer.

NMRA Publications:

NMRA Magazine: news, modeling articles, new product announcements

North Eastern Region newsletter: "The Coupler" Seacoast Division newsletter: "The Switch Tower"

January 2019

Membership Siding: Lou Champagne

"NMRA Turntable": monthly round up of interesting model railroad websites, videos & blogs "NMRA eBulletin": latest association news

Online Video Library: Hours of "how-to" videos produced by professional video companies, as well as over 100 videos of clinics presented at national conventions.

Kalmbach Memorial Library: One of the world's largest "railroads only" libraries. Contains prototype & modeling books and magazines + out of production kit instructions.

Conventions: National & RegionalClinics, Contests, Prototype tours, Visits to & Operations on local model railroads, meet the experts in the hobby, manufacturer displays, etc

Model Railroad Directory: Whether at home or traveling, allows you to connect with other NMRA members for layout visits, to talk trains or even join an operations session. Includes maps, descriptions, photos, videos & more.

Pike Registry: Members can register their model railroad name in the Official Register of Model Railroads (ORMRR).

Partnership Program: Brand name manufacturers offer NMRA members generous discounts — some up to 45% ... from Micro-Mark to Rusty Stumps, see NMRA website for current list of partners.

The Achievement Program: Arguably the best way to learn and hone modeling skills. Those who earn 7 of the 11 Achievement Certificates are awarded their Master Model Railroader Certificate (MMR)

Online Forums: The ability to interact with and discuss various model railroading topics with other NMRA members

NMRA Online Archives: Tens of thousands of archival quality photos, diagrams, plans, erection elevations, paint schemes, art and more ... all available for download at very affordable prices.

Annual Model Photo Calendar: Free to every US NMRA member, 12 of the year's best model railroad photos taken by our NMRA members. Includes dates for conventions & more.

Modeling with the Masters: Multi-day regimen of instruction by MMRs: hands-on experience in techniques + helpful tips and advice.

Beginner's Guide: The "Beginner's Guide" pages on www.nmra.org offer those new to the hobby help in learning the basics.

Special Interest Groups (SIG): Take a deep dive into an area or topic of special interest with other like-minded members (operations, railroad industries, signaling, Ntrack, specific prototype, etc).

Member Aid Program: A place to seek answers to questions about any detail on modeling in this fantastic hobby.

Data Sheets: General, scenery, trackwork, motive power, rolling stock, structures, electrical, operational, prototype information

Collection Insurance: NMRA members group property insurance for collections, layouts, live steam, tools, slides & photos, books and more.

January 2019

Membership Siding: Lou Champagne

Club Liability Insurance: \$1 million in liability insurance is available free for NMRA-sanctioned meets and shows, and for \$50 per year to 100% NMRA clubs.

Heritage and Living Legends Cars: The NMRA periodically issues special scale model cars lettered for famous model railroads, current and historical. Limited and available through the Company Store.

Company Store: Many items, from apparel to mugs to gauges & turnout templates, for NMRA members only.

Editors Ramblings Geoff Anthony

Just a few thoughts as the year closes. My apologies to Tage in having to edit his Presidents message so heavily because of lack of space. He said that he would email the whole message later this month. Thanks to all who have contributed to past issues of the Switch Tower. I could not put together the newsletter without such great contributions. I encourage members to send me articles and ideas as this is your news letter. Also a great way to get that AP author certificate.

I have been busy getting ready for Springfield for my club the Eastern Maine Model RR building BAR chip cars and hope to see you there . We will be in the Better Living Center .

On a more somber note I want to add to Larry Cannon's article about estate planning. I have been dealing with an estate of a club member and it has been an eye opener. Please do not throw out your boxes. It makes it so much harder to sell your equipment. Start an inventory! Make a plan on how you want to distribute your trains. Tell your family that the most you can expect in most cases is .50 on the dollar. Yes I know that might cause some friction now but will save heartaches later.

I hope that the New Year is a good one for all and may you have a green signal through the year.

Seacoast Division NMRA Engraved Name Tags Now Available

The Seacoast Division of the NMRA is now making available to members engraved name tags with up to three lines available, 25 characters per line. The badges will be \$5.00 per badge and \$3.50 for postage or you can wait and pick them up at a Division event. Orders will be held until we have ten badges ordered. Badges include the attractive Seacoast Division logo.

Please mail orders to Geoff Anthony, PO Box 187, Blue Hill ME 04614 –0187.

Make checks payable to SEACOAST DIVISION NMRA Please include your mailing address if you want it mailed.

9	MIKE GRAHAME
	Director
	Director

Seacoast Division NMRA Engraved Name Tags Available

You may have up to three lines on your name tag. Badges will be at cost to Seacoast Division NMRA (currently \$5). If you wish the tag mailed to you, add \$3.50. Otherwise, your tag will be handed to you at the next regular Seacoast Division NMRA meeting that you attend.

Orders will be submitted to engraver in batches of a minimum of 10.

First Line
Second Line
Third Line

Make check payable to: Seacoast Division NMRA Mail order form to: Geoff Anthony PO Box 187 Send completed name tag to:

PU BOX 187 Street _ Blue Hill, ME 04614 City

ty _____ST _ Zip _

The Switch Tower

New Members Welcomed Lou Champagne Membership Chair

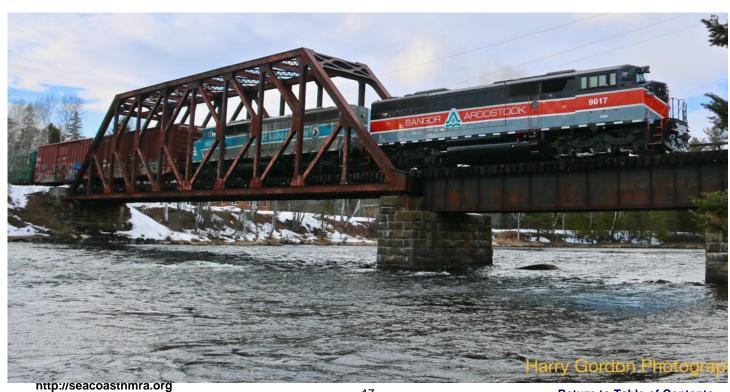
Tim Swenton	Grey ME			
Brian Jewell	Winthrop ME			
Lawrence Vollor	Sanford ME			
Southern Maine Model Railroad Club				
Fredrick Oliver	Biddeford ME			
William Wernick	Alstead NH			
Rerails				
Richard Gordon	Randolph ME			
Ron Wood	Manchester NH			
Jim Fusco	Auburn NH			
Robert Gould	Littleton NH			

January 2019

Timetable

Jan 5	Seacoast Winter Event	Westbrook ME
Feb 16	Whitfield Lions Club Train and Doll House Show	Augusta ME
March 30	Maine 3 Railers Show	Augusta ME
Jan 26 & 27	Amherst Model Railroad Show	Springfield MA
Jan 1—6	Model RR ex- hibit Museum of Science	Boston MA
Feb 24	Worcester Model RR club show	Worcester MA
March 9-10	South Shore Model RR Club	Hingham MA

Show



Seacoast Division NMRA Leaders







President	Tage Erickson etagee11@earthlink.net		207-635-2157
V. President			
Treasurer	David Kotsonis	ko2b@comcast.net	603-431-7044
Secretary,	Rick Mills	rickmills9@gmail.com	207-619-0855
Director, & AP Coordinator NH	Tom Oxnard	Tfoxnard @gmail.com	603-770-1329
Director & AP Coordinator- Maine	Larry Cannon	larrycannon@roadrunner.com	207-786-3929
Director	Paul Lessard	plessard74@comcast.net	603-674-1822
Director	Ralph Brown	rbrown51@mainerr.com	207-775-3294
Director Membership Chair	Lou Champagne	Lucien.champagne@roadrunner.	207-229-5475
Switch Tower Editor	Geoff Anthony	editor@seacoastnmra.org	207-374-2786
Asst. Editor	Stephen Russo	Stever603@gmail.com	603-878-9922
Webmaster	Stephen Russo	Stever603@gmail.com	603-878-9922
Director	Dave Sias	Indsisas@gmail.com	603-537-1120
Director	Erich Whitney	Ecwhitney @icloud.com	603-537-1120
Director	Chip Faulter	faulters@comcast.net	207-443-3135



Seacoast Division NMRA
PO Box 187
Blue Hill, ME 04614

