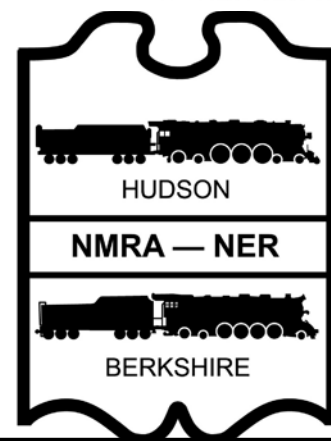


# FORM 19

**The Official Newsletter of the  
Hudson-Berkshire Division  
of the NER NMRA**



Order Number 338

May 2018

Next Division Meeting Saturday, May 19, 2018 at 9:00 a.m. - noon.

## James Gardner Jr's O-Scale Layout & Antique Cars

**67 Sturges Road, Altamont, NY 12009**

Direction bottom page 5



My layout is an "O" gauge three rail operation and it runs on MTH DCS system and is 29' x 14' currently on two levels. It has about 40' of rock casting and scratch built trestles and buildings, including the village of Altamont train station, gazebo, and the Altamont Enterprise. It features logging operations with Shays, Climax and Willamette engines. This is a (loosely) steam era layout with articulated's and 4-4-0's, Camelbacks, Northern's, etc. It also has an electric catenary system currently running a PA GG-1 green 5 stripe. Scenery is intricate and includes scratch made trees and a WW-1 airport! Also incorporates operating accessories, sound and a ventilation system.

You'll notice I am fond of passenger car sets but also have coal drags and other freight trains running also. This is not a strictly prototypical layout but does follow actual running guidelines such as the trestle keeps to a 10% grade, normal for logging locomotives, which my wife Sharon and I have enjoyed riding on.

I am also a repairman, the Train Doctor, and vendor at the GTE show as well as at the York TCA show twice a year. I especially enjoy working on Lionel Postwar equipment and am currently looking at restoring an "O" gauge 2-rail collection at the Altamont Fairgrounds among other projects that are always in motion.

I have also been an antique automotive restorer for many years specializing in Henry Ford's Model T's. I have a 1924 Model T one-ton truck we can give rides in. I also am working on a 1909 engine and transmission for a touring car for a customer along with two 1914 Touring cars (one is mine) and a 1926 Roadster and a 1924 Mercury bodied speedster and another 1924 one-ton truck. There are also about 4 or 5 other projects pending of my own.



[www.hudson-berkshire.org](http://www.hudson-berkshire.org)



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## Form19

The *Form19* is published eight times per year for members of the Hudson Berkshire Division.

The opinions expressed do not necessarily reflect those of the Division. Products and publications mentioned in *Form19* in no way constitute an endorsement by the Division.

### Contributing to the Form19

The *Form19* staff welcomes all contributions. Letters, articles, photos, and other items may be mailed or e-mailed to the editor. Please include a note if you would like materials returned. Suggestions also welcome.

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# The Ready Line

By Paul Hoffman

I had the pleasure of being in Baltimore in April and took the opportunity to visit the B&O Railroad Museum. Wonderful! I hadn't been there since the early 2000's, right after they restored the damage to the round house. Much was the same but the exhibits were coherently grouped by subject and actually told a great narrative about the B&O and its history. I highly recommend a trip there if you find yourself in the inner harbor area. I'm putting together an article for the *Form 19* including some pictures and videos I took.

For those of you who travel, a short travelogue of your trips makes for fine reading in the newsletter. For those of you who don't get on the road much, anything on your bench or layout would be a subject of interest to your fellow members. A few pictures, a couple of paragraphs and bingo, you have a submission. It really is fun and easy and it comes with benefits. You get to tell us about something that truly interests you and our readership gets to explore something they might not have ever thought of. We aren't looking for life changing or ground-breaking articles, although those are welcome too. We are just looking for interesting subjects associated with modeling and railroads. Send us the ideas and we can help you pull an article together.

### In Division news:

Bob Mohowski's coal load clinic was very informative and Bob was as entertaining as we have come to expect. I learned a couple of things, always a plus, about coal loads and Bob's display models were pretty impressive.

We have completed the turnover of the Great Train Extravaganza. The show is now officially ours, lock, stock and barrel! Rich Smith is meeting with our new show chair James Lauser to discuss planning for the 2018 show, set for Sunday, December 2, 2018. Yes indeed, things are already underway for the Extravaganza.

Member Ben Maggi has willingly agreed to take over the Treasurer's position. Ben has been the treasurer for the Adirondack Live Steamers and is an attorney by profession, in addition to being a fine modeler. He will be a great asset to the Division's leadership team as we transition to a stronger economic position with the acquisition of the GTE. Welcome aboard!

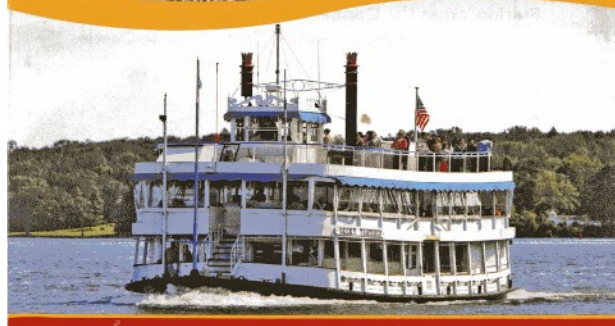
And Rich Smith has been in training for the 2018 Pan-Mass Challenge (PMC), an annual bike-a-thon that raises money for research and care at Dana-Farber Cancer Institute (DFCI) in Boston. For more information or to make a donation, please follow this link: <http://profile.pmc.org/RS0384>

To those that have filled out the member information form, THANK YOU! I have left the link below for the convenience of those of you who haven't had the chance yet. Please take the time to fill out this form and return it us. It is vitally important. The Member Information form is on our website, [http://www.hudson-berkshire.org/Documents/MemberInfoSheet\\_030318.pdf](http://www.hudson-berkshire.org/Documents/MemberInfoSheet_030318.pdf)

Don't forget the Essex Steam Train outing in June. Get those registration forms back to us ASAP.



# ESSEX Steam Train AND RIVERBOAT



Each year the Hudson Berkshire Division, NMRA, has scheduled a family focused activity to close out our schedule of modeling centered events. This year the event is the Essex Steam Train and Riverboat Ride. This is perhaps the closest venue consistently using a steam engine. Some of the people we bring along may never have seen one. What an opportunity.

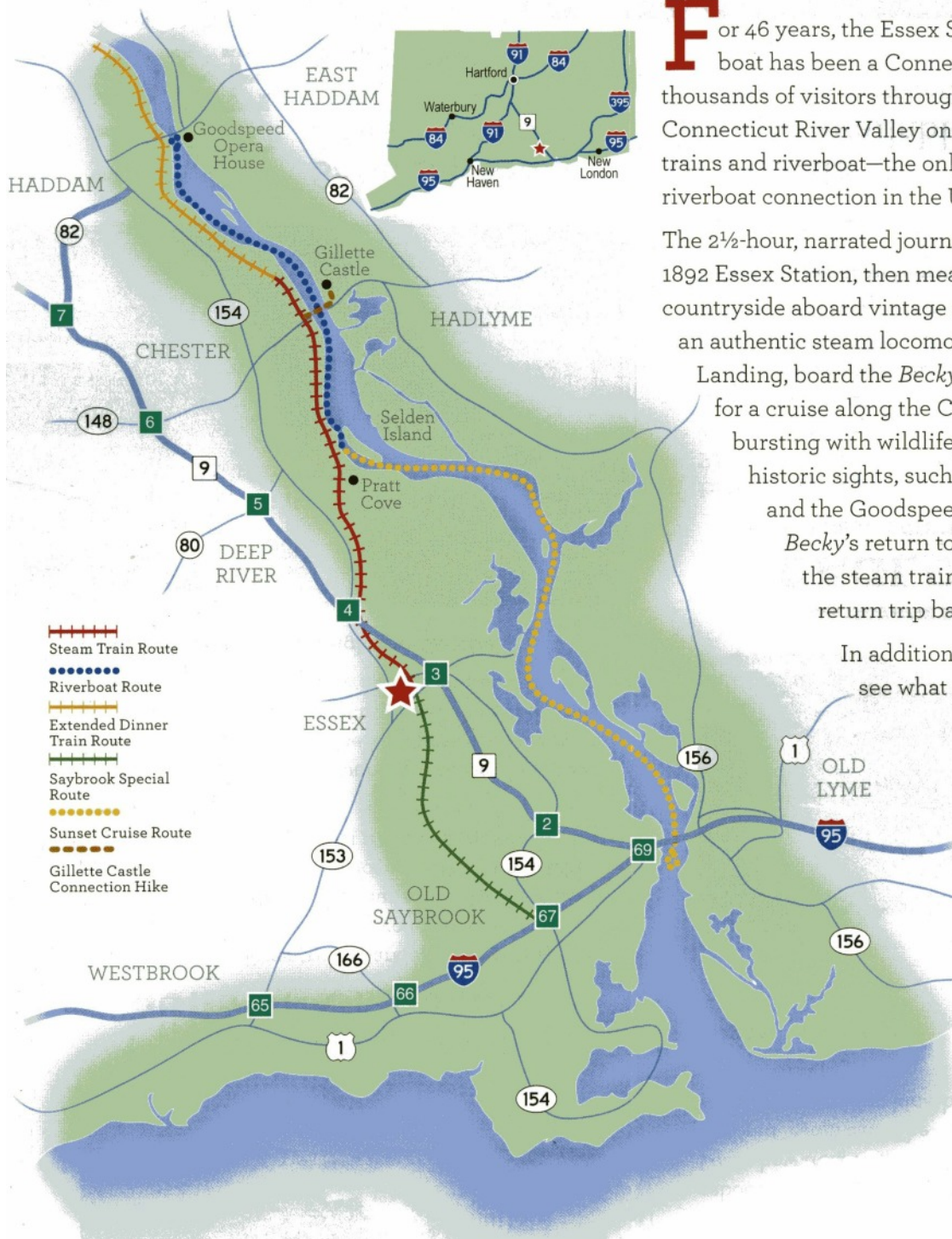
Here is some of the material from the brochure provided by the operator. On page nine you will find the details and form for signing up for this group event.

The drive is about one-half hour longer than our travel to the Amherst Railroad hobby Show in Springfield. Longer, yes, but much more pleasant this time of year.

The intent, as with other such functions, is to provide a train centered experience that we can share with family for the day. Besides the ride, we have arranged a shop tour. And you might be interested in talking to the operator about their steam locomotive driver program for yourself or as a gift to a Form19 staff member. There are other Essex Train activities - dinner train, caboose ride, fall excursions - that you might also find interesting and worth the drive. There can also be a visit to a nearby castle or you may find other places to visit in Connecticut or along the way.

In any case, we wish you a wonderful experience.





For 46 years, the Essex Steam Train & Riverboat has been a Connecticut icon, escorting thousands of visitors through the unspoiled lower Connecticut River Valley on our antique steam trains and riverboat—the only steam train and riverboat connection in the United States!

The 2½-hour, narrated journey begins at historic 1892 Essex Station, then meanders through the countryside aboard vintage rail cars pulled by an authentic steam locomotive. At Deep River Landing, board the *Becky Thatcher* riverboat for a cruise along the Connecticut River—bursting with wildlife, lush scenery and historic sights, such as Gillette Castle and the Goodspeed Opera House. Upon *Becky's* return to Deep River Landing, the steam train welcomes you for the return trip back to Essex.

In addition to the train and boat, see what else we have to offer....

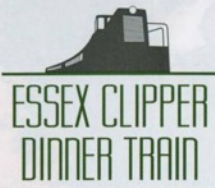
This is not going to be a "Day Out with Thomas," but for younger generations - including grand-children through millennials - this may be their first (and maybe only) opportunity to see, smell, hear, and experience a steam locomotive.

Or maybe you have a relative or neighbor that would like to experience train travel the way it used to be (or something close to it).

Guests are welcome and at the group rate.

Consider the possibilities.





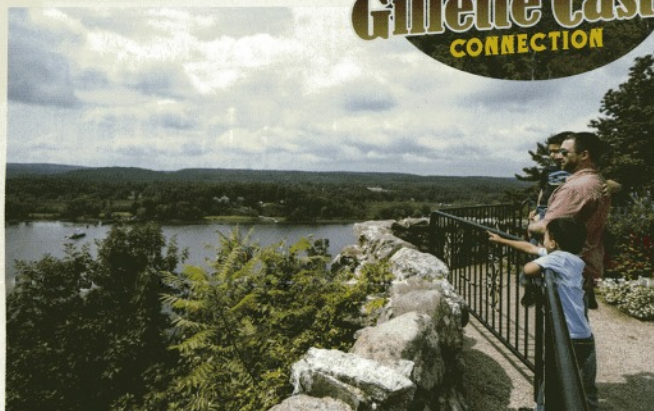
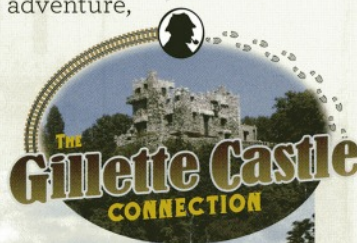
Step back in time aboard the elegant Essex Clipper Dinner Train! Ambiance, impeccable service, and fabulous food—our recipe for a fine dining experience—is enhanced by a breath-

taking 2½-hour journey through the pristine Connecticut River Valley. A delicious four-course seasonal menu is freshly prepared on-board and served in beautifully restored 1920's Pullman cars. The Essex Clipper is also available for private parties, charter or events.

**May through October. Reservations Recommended.**

If the road less traveled calls...climb aboard the Gillette Castle Connection. Travel by train to the Hadlyme Station, cross the Connecticut River aboard the ferry, *Selden III*, and take a ¾-mile hike to Gillette Castle. Pack a picnic lunch for a true adventure, off the beaten path!

**Memorial Day Weekend - Labor Day.**



Directions for James Gardner's: From Albany area follow Route 20 west to Route 146 and follow through village of Altamont (watch the road signs; there are 2 turns) toward Gallupville. About 2 1/2 miles after you cross the railroad tracks look for Sturgess Road on your left and it is the last house in. From the west follow Route 146

## Essex Steam Train & Riverboat Schedule

### Spring Schedule (May - mid-June)

	10:00	11:00	12:30	2:00	3:30
Saturdays					
Sundays & Memorial Day					
Caboose Ride* (first weekends)					
Saybrook Special* (first weekends)					

### Summer Schedule (mid-June - late Aug.)

Sundays - Fridays					
Saturdays					
Caboose Ride* (first weekends)					
Saybrook Special* (first weekends)					

### September Schedule

Fridays & Sundays (plus Labor Day)					
Saturdays					
Caboose Ride* (first weekend)					
Saybrook Special* (first weekend)					

### Fall Foliage Schedule (late September - late October)

Fridays & Sundays - Tuesdays					
Saturdays					
Caboose Ride* (first weekend)					
Saybrook Special* (first weekend)					

\*Special Fare

Train & Boat or Train only

Train only/No Boat Connection

**Go to [EssexSteamTrain.com/Events](http://EssexSteamTrain.com/Events) for prices, information and schedule.**

Senior Discount 10% everyday; Double Senior Discount 20% Mondays (age 65+).

Schedule, equipment and route subject to change. Train runs rain or shine.

### Groups and Charters

Train, boat and gallery space are available for groups and private events. Call for information and reservations.

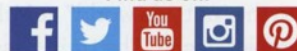
### Directions

**From Shoreline:** Take I-95, Exit 69. North on Route 9 to Exit 3.

**From Hartford:** Take I-91 South to Exit 22S. South on Route 9 to Exit 3. Essex Steam Train is west of Route 9 on Route 154.

**Connecticut**  
still revolutionary

Find us on:



1 RAILROAD AVENUE, ESSEX, CT 06426

east through Township of Knox and look for Sturgess Road on your right. From south in Voorheesville area follow Route 156 to Altamont and take a right, cross the railroad tracks and take the left on Route 146 and follow the same toward Gallupville and it will be on the left. From north (Schenectady area) follow Route 158 to Route 146 and follow into Altamont as earlier stated.





## The Days They Changed the Gauge A Most Incredible True Story of American Railroading

From the August, 1966 issue of Ties  
the publication of the Southern Railway Company

May, 1886. President Grover Cleveland was making final preparations for his wedding. Jefferson Davis, in a rare public appearance, was drawing large and enthusiastic crowds of admirers. Throughout the nation, final preparations were being made for the celebration of Memorial Day.

And in the South, plans were nearing completion for one of the most complex and dramatic two-day periods in railroading history-changing the gauge of an estimated 11,500 miles of track.

It was a little over a half-century since the South Carolina Canal and Rail Road Company had inaugurated steam-powered freight and passenger travel on a regularly-scheduled basis. Horatio Allen, the railroad's chief engineer, had departed from the 4-foot 8-1/2-inch gauge used in England by prescribing a 5-foot gauge and in the years that followed, most of the South's railroads copied his example.

But in the North, the British example was dominant. It made little difference in the years preceding the War Between the States, since the two regions exchanged few goods requiring rail transportation. But as the South began its recovery from the war, it became readily apparent that complete economic reconstruction would require easy commerce with the rest of the nation-an impossibility so long as differences in gauge existed.

At first, the problem of interchange had been temporarily relieved by laboriously loading freight from one car to another at interchange points between railroads of different gauges. But the growing trade between the South and the rest of the nation soon required faster and less costly methods. A crude form of containerization was devised, with freight remaining in the same car throughout the journey-with the wheel trucks being changed at interchange points as necessary. Soon, as a contemporary writer pointed out, "not a prominent point could be found on the border without its 'hoist' and acres of extra trucks."

Variety in gauge size wasn't uniquely a difference, between North and South. In 1871 no less than 23 different gauges existed in the United States, ranging in width from three to six feet. Within the South, the state of North Carolina prescribed by law a gauge of 4 feet 8- 1/2 inches to encourage a traffic flow to its own ports, rather than those in Virginia or South Carolina (each of which were primarily served by rails spaced five feet apart). Goods going between Virginia and South Carolina had to go through at least two interchanges on the way.

It was clearly a condition that could not continue. In 1884 the Illinois Central-which operated in both regions-found it necessary to begin changing the gauge of its lines in the South to conform with the northern width. The need to compete soon forced the Mobile and Ohio to change-putting direct pressure upon the Louisville and Nashville and the Cincinnati Southern to match the improved service of their competitors.

In effect, the pressures of free competition had provided a catalyst, and the stage was set for changing the gauge of practically every road in the South-a change that, ultimately, would be accomplished in less than 36 hours.

February 2-3, 1886, marked the first step. As agreed the previous October at a meeting of the Southern Time Convention, operating officers of the South's railroads met at the Kimball House in Atlanta in a "Convention ...called for the purpose of fixing date and arranging details for change of gauge."



Track Level Board & Gauge

Made at the Chattanooga shops of the Alabama Great Southern Railway, a predecessor of Southern, the level board and track gauge pictured here were used by Superintendent Dan McLarn to standardize all level boards and track gauges used during and after the AGS' changing of the gauge on May 30, 1886.

E. B. Thomas, general manager of Southern's predecessor, the Richmond & Danville, served as chairman of the committee charged with determining the date of the gauge change. On the Convention's first day he reported: "That Monday, May 31st, and



Tuesday, June 1st be designated as the days for general change of gauge. ...Lateral lines may change exterior or subsequent to the dates named by arrangement with connections."

On the members of three Convention committees Transportation, Roadway and Machinery-fell the burden of planning for the tremendous task just four months away. All motive power and rolling stock would have to be removed from the affected tracks, wheel spacing would have to be adjusted to fit the new gauge, and logistics for feeding and equipping a virtual army of workers would have to be carried out with military precision.

But the most important decision of all involved the exact width of the new gauge. Although the nation largely had adopted the 4-foot 8 1/2-inch width, the Pennsylvania Railroad-with which many of the South's roads required an interchange-used a 4-foot 9-inch gauge. For this reason, and owing to minor engineering difficulties encountered by the 4-foot 8 1/2 -inch width, the Convention had voted to adopt the Pennsylvania gauge as its standard.

One farsighted man rose on the Convention's second day to ask that the gauge-size decision be reconsidered. He was John C. Gault, general manager of the Cincinnati, New Orleans & Texas Pacific, and he made some persuasive arguments

"I deem it of greatest consequence that the standard gauge of the country could be adopted by the Southern Roads. ...This is the first opportunity that the Southern roads have had to correct the unfortunate mistake made when the five foot gauge was adopted, and in correcting it we should take such action as will result in solving the question for all time. I insist upon saying "to this Convention that the adoption of a 4 ft. 9 in. gauge is only a partial correction of the mistake. ..." Nonetheless, the Convention chose to go ahead with a standard gauge of 4 feet 9 inches.

With the Convention's end, four months of intense activity began. Differing in some specifics between the various roads, plans were worked out in minute detail for reducing the width between rails, and between the wheels, by 3 inches.

Only one rail would be moved in on the day of the change, so inside spikes were hammered into place at the new gauge width well in advance of the change,

leaving only the need for a few blows of the sledgehammer once the rail was placed. As May 31 drew near, some spikes were pulled from the rail that was to be moved in order to reduce as much as possible the time required to release the rail from its old position.

Rolling stock, too, was being prepared for rapid conversion. Contemporary accounts indicate that dish shaped wheels were provided on new locomotives so that on the day of the change, reversing the position of the wheel on the axle would make the locomotive conform to the new gauge. On some equipment, axles were machined to the new gauge and a special ring positioned inside the wheel to hold it to the 5-foot width until the day of the gauge change. Then the wheel was pulled, the ring removed, and the wheel replaced.

To shorten the axles of rolling stock and motive power that could not be prepared in advance, lathes and crews were stationed at various points throughout the South to accomplish the work concurrently with the change in track gauge.

A few days before May 31, all roads began clearing cars from their lines and reducing the gauge of all areas of track that could be freed of cars and engines.

Finally, in the early morning hours of May 31, the concentrated work began. Men worked in crews of various sizes charged with various goats-some given specific mileages to cover, others under instructions to begin at a specified point and work in a specified direction until they met another crew working toward them.

Along thousands of miles of track-approximately half of which was operated by predecessors of today's Southern Railway System-spikes were pulled, rails moved in to the new gauge, and more spikes hammered into place. At shops and rendezvous points throughout the South, motive power and rolling stock were being altered to fit the new gauge. Wheels of cars were moved in, steam engine brakes and tires were altered-and the screeching of axles being narrowed on lathes joined the ringing of heavy hammers.

In less than three days, standard-gauge trains were serving the South. "The work was done economically," an article in the Journal of the Association of Engineering Societies pointed out, "and so quietly



that the public hardly realized it was in progress. To the casual observer it was an every-day transaction. It was, however, a work of great magnitude, requiring much thought and mechanical ability. That it was ably handled is evidenced by the uniform success attained, the prompt changing at the agreed time, and the trifling inconvenience to the public."

And the Richmond & Danville told its Annual Report readers: "By agreement and prearranged concert between the Southern Roads operating the 5 feet gauge of tracks, about June 1st last the gauge of all the 5-foot tracks of this Company's lines was changed to the standard adopted of 4 feet 9 in. This important work was effected under the direction of the General Manager with great promptness and entire exemption from accident or damage, and with hardly a perceivable interruption in the regular movement of traffic throughout the entire connection of this Company's Roads."

Horatio Allen had written in 1884 that his use of the 5-foot gauge for "the South Carolina Railroad determined the gauges of the Southern road, which continues of that gauge to this time; but it is to be anticipated that the commercial advantages of uniformity of gauge will eventually narrow the gauge down to the coal mine gauge of four feet eight and a half inches."

The final half-inch reduction, though, had to wait for the formation of the Southern Railway Company. Then, because of the closeness of the South's 4-foot 9-inch gauge to the standard gauge, it was accomplished in the normal course of track maintenance and repair. It completed the job begun many years earlier.

But the real drama lasted only two days-two days in which the fields and villages of the South echoed the clanging of countless hammers driving thousands of spikes-the days they changed the gauge.



## Commentary on the Article You Have Just Read

The subject of changing the railroad gauges of the southern states railroads to that of the nation all in one weekend was mentioned to a *Form19* staff member some time ago. The idea was totally new and stirred the curiosity. It took a lot of searching to identify the article in the Southern Railway Magazine. The article itself is the only content of the August, 1966 issue that is posted on the website of a private individual. Portions of the article show up on two other websites.

There is no author listed for the article, which evidences a deep interest in history combined with significant research and writing skills. Remember, this was well before the Internet. The author must have had access to something that spurred his interest and provided details. The *Form19* could find no other material on this subject online.

As you have read, this is a 'story' of tremendous planning and organization and discipline. One can recognize that this organization and discipline was a direct result of the military experience of the War Between the States, as was earlier proven necessary and successful during the construction of the Transcontinental Railroad two decades before.

When one considers this idea for the first time, one thinks of track - but that is only part of the story. As you have read, there was tremendous and urgent work to change the rolling stock. And if that weren't done, there was no place for that rolling stock to go.

A monumental and unique event for which there is no monument.

The astute reader will realize, of course, that a program of this type was later repeated and for the same reason - the importance of extended trade. More about that in a later issue of the *Form19*.







## Essex Steam Train & Riverboat Annual HBD Family Outing

For our annual family outing this year, we have chosen the Essex Stream Train & Riverboat Cruise on Saturday, 23 June from 11 AM to 2 PM in nearby Essex, CT, which is about 2.5 hours/150 miles from Albany. For more details see the photos and text in the electronic edition or the brochure enclosed in the printed edition.

We intend this to be an enjoyable day out with family and friends who share our interest in trains and modeling. Transportation is by auto and ride-sharing is encouraged.

The train leaves promptly at 11:00 and you are requested to arrive at least 30 minutes early. The combined train & boat ride is approximately 2.5 hours round trip with a 40 min train ride, then a 1hr & 20 min boat ride, and then a 20 min train ride back to the start.

As part of our group activity, we have arranged a behind-the-scenes shop tour that lasts about 30 minutes and begins as soon as the train returns to Essex Station.

We also are hoping to raffle off two cab rides - one person, each way - to be confirmed on the day and dependent on operations for that day. Raffle proceeds go to Toys-for-Tots.

The discounted group prices are \$22 for adults and \$14 for kids 2 -11. (Normally it is \$30 for adults, \$27 for seniors 65+ and \$20 kids.)

There is no dining service on the train so you can bring your own sandwiches etc. or dine at snack bar on the boat.

Because this is a group activity, registration is required: Please use Registration Form below and please note the firm deadline! (this seems like a reasonable request).

If you have any questions, you can contact Irwin Nathanson at (518) 668-9892 or at [irwindnathanson@fastmail.fm](mailto:irwindnathanson@fastmail.fm)

### ESSEX STEAM TRAIN AND RIVER BOAT RIDE Saturday, 23 June 2018 REGISTRATION FORM

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Phone: \_\_\_\_\_ E-Mail: \_\_\_\_\_

	<u>Number</u>	<u>Price Each</u>	<u>Total</u>
Adults	_____	\$22.00	_____
Children (2-11)	_____	\$14.00	_____
Grand Total			_____

Make checks payable to: HBD

Mail check & form to: Irwin Nathanson  
P.O. Box 356  
Diamond Point, NY 12824

Deadline for receipt of check is 16 June 2018

And so another 'modeling season' is nearing an end as evidenced by the calendar and the upcoming Family Day outing. The Officers, Board of Directors, and many volunteers have brought you several fine layout visits, monthly meetings that encouraged your modeling endeavors (including at a new meeting place), and the *Form19* Staff has worked hard to provide interesting reading and timely announcements.

Work has already begun on next season's activities and articles. Yes, there was another time when a railroad changed its gauge - a similar operation on a smaller scale (no pun).

Someone has documented his construction of a craftsman kit and we will bring that to you for interesting reading - and perhaps a bit of motivation. And someone else has taken a train trip - quite unique - and will be presenting some details and impressions.

And others read the *Form19*, too. You may remember that just a while ago the *Form19* Staff brought you an article on the Madison Railroad and the Reuben Wells steam locomotive designed by one of the railroads engineers (engine drivers) to

meet the special requirements of the railroad and named after him. So, if you go to Youtube.com and search on 'The Madison Incline', you will find a video of the current Madison Railroad's Operations Manager discussing this still very unique rail operation... as if someone there had read the *Form19*.

Having problems with your layout? Track not doing well? Need to repair a section or two? Then you can sympathize with Norfolk Southern Corp, which bought 4.7 million wood ties in 2011 and started installing them in 2012 .

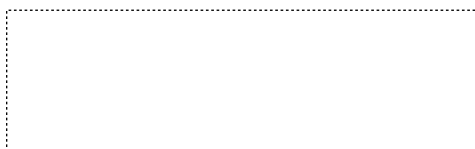
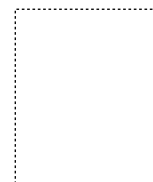
And now those ties are deteriorating and will need to be replaced. Inspections and analyses have shown that the wood was treated with 'a blackening agent' and not pressure treated with creosote as was require and as was done to the samples presented to earn the contract award. Most of the delivered ties had the correct appearance but not the resistance to weather and rot.

Norfolk Southern has recently initiated a lawsuit against the Alabama firm that sold the ties. And you thought your track was troublesome.



## FORM 19

Hudson Berkshire Division  
PO Box 83  
Clifton Park, NY 12065-0083



First Class Mail





## The Track Level and Its Use in Super-elevation

In order to help compensate for the undesired effects of centrifugal force on trains as they follow curves in the track at speed, the outside rail on such curves is "super-elevated" or raised above the level of the inside rail on access and main running tracks on which, in general, the speed limit is 20 miles per hour or more. While the lower or inside rail holds the established grade of the track, ballast is added under the ties supporting the upper or outer rail thereby "tilting" or "banking" the track toward the center of the arc of the curve.

The amount of super-elevation employed is derived by the equation  $E = CDV^2$  where:

E = the super-elevation of the outer rail in inches

C = 0.0005 (for curves less than 3 degrees) or

C = 0.0004 (for curves of 3 degrees and above)

D = the actual curvature of the track in degrees

V = the maximum allowable speed in miles per hour

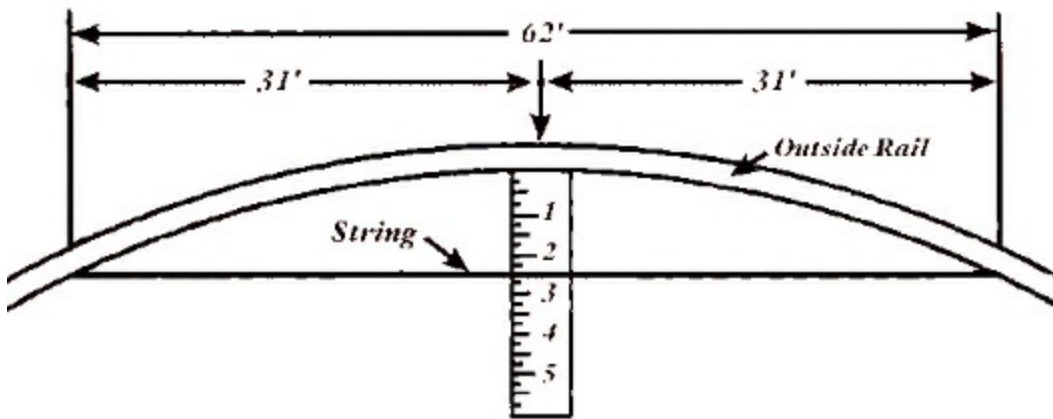
One method to correctly super-elevate the outer rail on a curved track using the track level (illustrated above) is as follows:

With the track laid on a good surface, all the low joints on the inner rail of the curve are caught up. To first level the track, the fixed edge plate (a) of the track level (above) is rested on the top of the outer rail, and the adjustable edge plate (d), with the graduated "slide" (c) collapsed so that it is flush with the level, is rested on the top of the inner rail. When perfectly level the bubble (b) of the spirit level will rest in the middle of the tube.

To then establish the correct super-elevation of the outer rail the 8" graduated slide (c) of the track level is adjusted and locked to the value predetermined by using the formula explained above. The outer rail is then raised with a track jack and ballast thoroughly tamped under the ties until the bubble of the spirit level again rests in the middle of the tube. (If necessary the elevation of the outer rail may then be increased by up to 1/2 inch in excess of that required in order to provide for settlement.)

In dressing the track after it has been super-elevated the "crown" of the ballast should not be more than one-third of the width of the gauge from the outer rail in order to secure drainage. The raising of the outer rail reduces the outer slope and increases the inner slope of the ballast. If the curve is sharp, the ballast on the outer half of the track is practically level and holds water, instead of shedding it. By crowning the ballast as directed, thorough drainage is insured.

If the outer rail has been super-elevated 5 1/4" above the grade of the inner rail, according to the formula noted above, this would be the appropriate super-elevation for a track with a curvature of 6 degrees 30 minutes and a speed limit of 45 MPH. The curvature in degrees may be measured directly as shown on the next page.



## Measuring Track Curvature in Degrees

The measurement (2 1/2") of the distance between the gauge face of the outer rail and the midpoint of the 62-foot string in this diagram represents a curvature of 2 degrees 30 minutes. (Diagram not to scale.)

The curvature in degrees may be determined by stretching tight a 62-foot string which is being held against the gauge side (inside) of the outer rail and measuring the distance in inches between the midpoint of the string line and a point perpendicular thereto on the face of the outer rail, 5/8 of an inch below the top. Each inch of this measurement represents one degree of curvature.

( In HO scale, the string is about 8.5 inches long and .011" represents 1 degree. )



From the April Meeting

Above: Bob Mohowski was entertaining the audience with his 'wit and wisdom' prior to the start and as members rushed in the door to get one of the few remaining seats.

Right: Paul Hoffman opened the meeting and (again) requested the members to fill out one of the Member Information Forms that he had available and that have been printed in the *Form19* and are available on the Division's webpage. Several were turned in at the meeting.







**Left:** VP Irwin Nathanson reviewed some of the details for the June 23rd Family Day outing and plans for the early meetings of next season.

**Below:** Bob discussed how thick felt chair leg pads can be attached to a block and used for cleaning rail surfaces. Since the pads are thick, a screw can be used to attach to the block or pole is your cleaning solution of choice may dissolve the pad adhesive.



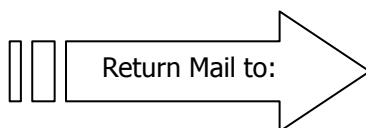
**Above:** Bob discussed the types of coal, how small amounts can be obtained, and prepared for creating realistic coal loads.

**Right:** Bob answers a question. Note LARGE block of coal on table.

Bob brought and displayed about 20 different hopper cars with distinctive loads based on time period, railroad, and regions served by the railroad.



MEMBER INFORMATION		
CONTACT INFORMATION		
Name:		
E-Mail address:	Phone: <i>Phone type :</i>	
Current address:		
City:	State:	ZIP_Code:
MODELING INFORMATION		
Primary Scale:		
Do you follow a prototype, if so which one:		
Do you have a layout: <b>Yes No</b>	Name of layout:	
Would you be willing to host a Division visit: <b>Yes No</b>	Web site address:	
DIVISION NEWSLETTER INFORMATION		
Do you wish to receive the Form 19 via email (full color, more content) or via regular mail (B&W, less content):		
<b>E-mail      USPS</b> <i>(Please check only ONE)</i>		
Would you like to be included in the Hudson Berkshire Yahoo group: <b>Yes No</b>		
May we share your e-mail address with other members: <b>Yes No</b>		
May we share your phone number with other members: <b>Yes No</b>		
SPECIAL SKILLS/ADDITIONAL INFORMATION		
Do you have any special skills that could benefit our Division?		



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