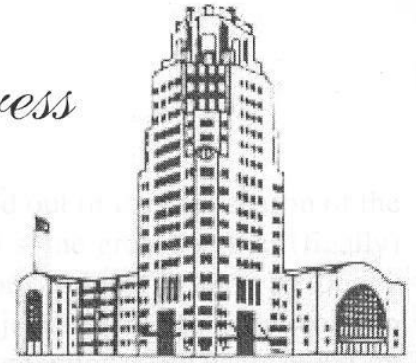


## Empire State Express



June 2018

PUBLICATION OF THE NIAGARA FRONTIER CHAPTER NRHS, INC.

Editor: John C. Dahl Email: [newsletter@nfcnrhs.com](mailto:newsletter@nfcnrhs.com)

The meeting of the Chapter will be held at 8:00 pm on Friday, June 8, 2018 at 8:00PM at Buffalo Central Terminal.

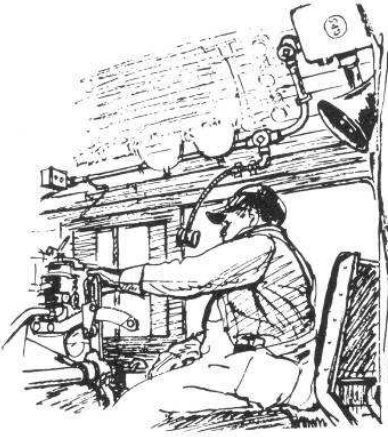
## MOVIE NIGHT AT CENTRAL TERMINAL



Chapter member Devan Lawton will be presenting this month's public program and the last for one for the season in true tradition in Central Terminal at 8:00 PM, Friday, June 8th. Devan will be showing his super 8 sound movies that he had taken in the summer of 1978--40 years ago this month !! With the pending approach and taking over of Amtrak's newly to be delivered EMD model F-40PH diesel-electric locomotives he set out to cover the last months of the sleek E-8 model by builder EMD. The passenger "covered wagon" will be proudly doing their best, tired now after their many passenger miles throughout their lifetime. Devan's camera covers Amtrak trains from CNR's International Bridge to Corfu, New York. You will see many locations along the old New York Central Railroad familiar to railroader's and railfan's eyes in Western New York. Historic block towers, CP points, scenic areas and of course Central Terminal will be covered for your viewing pleasure with these streamlined E units leading the charge. We will see you on the 8th and don't forget to bring a friend or two!!

*Above: Buffalo, NY Central Terminal track 22, Amtrak train 64 (eastbound) on August 1, 1978 with E8A #411 on the head end. The station sign, seen at right now resides in our museum. Photo by Devan Lawton.*

## MESSAGE FROM THE PRESIDENT



On the fifth of May, Greg and I attended the Annual Congress of the Niagara County Federation of Historical Societies. It was a great networking event. Representatives from all the towns in Niagara County attended. The program was most interesting.

On the twelfth of May the Chapter held its Annual Spring Chicken Barbeque fund raiser. The treasury benefitted to the tune of \$1,193.00. This is some kind of record for this event. Thanks to Becky for being our Chairperson, to all those who helped out, Beth Scott, Al Starkweather, John Dahl, Jon Rothenmeyer, Devan Lawton, Al LeTeste, Dennis Hurley, Greg Gerstung and Dave Skoney. Thanks also to Betsey Ball for printing

the tickets and the loan of her tent. Thanks to all of you who purchased chicken dinners to help make this work. We had a good day, overcast, but not windy and we didn't get any rain.

Now that the sun is shining and the trees and grass are green again, outdoor season on the Niagara Frontier is in full bloom. There is a veritable explosion of festivals, fairs, and fun things to do. Life becomes hyper-busy as we try to cram as much in before it begins to fade again. Please remember that we have our Museum open every Saturday during June, July, August and September. We continue that into October as the weather allows. The Museum needs bodies in the building to be open. Please call Becky at 434-5665 if you can volunteer a Saturday afternoon. You won't be there alone and the other work can go on in the background.

Speaking of work going on, the students from the Iroquois Job Corps. have been working on EL-2 for a couple of weeks now. They are removing the crumbling and loose old mortar from the joints and replacing it. It's a lot of labor. They are honing their skills to be craftsman someday and we are the benefactors. The window replacement program goes forward at its own pace. The Archive Room expansion project is again working. The Board approved the expenditure of \$1,118.42 for flooring and framing materials. This should get us to the stage of having a shell erected. If you will recall, we have the drywall and the doors in house. A lot of rearranging of stuff and cleaning up in the north end will precede this. This is ongoing. We have to make the north most sliding door operable because we will lose the one next to the archive room when the framework goes up. There is "Lots of stuff..." to do.

Marcus continues to restore the NYC bay window caboose. As of this writing the flooring that was temporarily replaced some years ago, is being properly redone. He tells me that he hopes to get the roofs of both cabooses repainted this season.

Inside the Museum there are a couple of new displays, notably one on the Niagara Junction. Stop in and see. We are still in need of programs for next season. If you have a presentation or a suggestion for one, please let us know.

Until then, I'll see you at the meeting. Remember that it will be at Central Terminal, Friday June 8<sup>th</sup> at 8 PM.

*Jim Ball*

## SEMAPHORES

By: Robert Barnett

The semaphore signal was, until the 1930s, the primary means of railroad signaling in North America. It is still in use in other parts of the world. Although it has been supplanted in U.S. and Canada by other types – searchlight, position light and color light signals - it can still be found in some isolated areas.

There were two general classes of semaphores: lower and upper quadrant. The lower quadrant was in common use in the late 19<sup>th</sup> Century. This type is shown in Figure 1 (left). All indications in this figure display “Clear”. The upper quadrant semaphore which displaced the lower quadrant is shown in Figure 1 (right). Upper or lower refers to the arc through which the blade swings when traveling to the clear position. In both types the Stop indication is a horizontal blade displaying a red light.

Red has been used as the “Stop” since earliest times. Some sources say that the human mind instinctively associates red with blood and as a result red means danger. The opposite to “Stop” is “Proceed”. One way of looking at this is to say that the opposite of Stop is Not-Stop. In early semaphores this took the form of a non-red light. In other words, no lens was used. See Figure 2 which shows an early semaphore with no lens in the Clear position. Figure 3 shows the same arrangement in an upper quadrant semaphore. Although this was often referred to as a white light the actual color depended upon the source of illumination. For a two-position semaphore like the lower quadrant version, the Clear indication was given when the blade dropped to about 60° below horizontal. Things were simple in the 19th century – you either stopped a train or you let it go. Only two aspects were required. But using no lens meant that the arm had only to drop to a point where it no longer showed Red. This could easily happen when a buildup of wet snow caused the arm to drift down and give what appeared to be a Clear indication. Several other conditions could give a false clear. A broken operating cable would allow the arm to drop. A buildup of snow on the red lens could also cause trouble – it could make it appear white. The red lens could be broken or fall out. When much of the trackage was in rural areas and the sky was black at night the tiny pin point of the semaphore’s light could be easily seen. But as electric street lighting became the norm in larger cities this light could not easily be distinguished from that of the semaphore. White street light could easily be mistaken for a Clear signal.

Some measures were taken to try to fix the problem. An additional red lens was added to lower quadrant signals so that even when the blade drifted down it still showed red. Two red lenses were used for this reason. A counter weight on the operating mechanism for the arm helped to eliminate the problem of the broken operating wire. The use of a color other than white for Clear was also tried. But there was no agreement on what color to use. Yellow was tried. But it soon became apparent that this color was not significantly different from the color of the light source. Some incandescent lights have a large amount of yellow. This led to green becoming the Clear indication and when there was a need for such an aspect, yellow being used for Caution.

By the beginning of World War 1 most heavily trafficked junctions had been interlocked. This was intended to expedite traffic by bringing a large number of switches and signals under the control of a small number of operators. These early interlocking plants were purely mechanical using two position (normal – reverse) levers to directly operate the switches and signals. Since two position signals lend themselves to operation by two position levers, all was well.

But traffic density kept increasing. To further expedite train movements, power interlocking was devised. Now signals were not operated in a direct mode. The operator merely “reversed” the signal lever and an auxiliary system (usually an electric circuit) decided what signal aspect to display. Because of this the signal aspects were no longer limited to two, by the two positions of the operating lever. More aspects than just “Stop” and “Proceed” could be displayed. The “Approach” or cautionary aspect became necessary to expedite traffic. But adding this aspect to the lower quadrant semaphore was not easy. This was another drawback with the lower

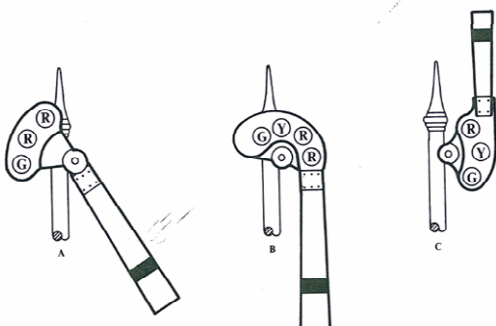
quadrant semaphore – it was really a two-position signal. A three position lower quadrant semaphore was never in wide use. The upper quadrant semaphore eliminated the above-mentioned defects of the lower quadrant. It made sense to change to this form.

In both types of semaphore, the position of the arms is known as the “day” indication; the color of the lights is the night indication. The colors were easy to distinguish. A considerable amount of thought was put into making certain that this was the case. The wavelength of the light for each of these colors was studied by the major railroads in conjunction with the scientists at Corning Glass to agree on a standard color specification.

Mistaking the position of the blades was not so easy a problem to solve.

Because of commuter movements, traffic around cities was generally heaviest during daylight hours – during dawn and dusk when light was fading. It was during this time of high traffic and poor visibility that the lower quadrant semaphore fared poorly. Figure 4 compares the aspects of the upper quadrant (a, c, e) to those of the lower (b, d, f) with each of the three aspects displayed on the upper arm. The lower arm remains at “Stop” as it would for the control of movements over a high-speed route. Each is shown as it might appear to the locomotive engineer at each of the three distances. At (a) and (b) the high-speed route is cleared. Notice the large separation between the blades at (a) and the minimum separation at (b). This becomes more apparent as sighting distance increases to 0.25 miles at (g) and is particularly evident at 0.5 miles (h). With the upper quadrant arm above the mast (a), its aspect is easier to perceive. As train speeds increased resulting in increased braking distances, long range sighting ability became very important. Figure 4 represents ideal conditions. Under adverse conditions such as smoke or fog a bad situation was made worse.

But traffic kept increasing. More aspects were needed. Automatic block signaling was put into operation. At first only one arm was used. The Caution aspect meant that the next signal was at Stop. When block signals and interlocking plant signals were used on the same line a means for distinguishing one from the other was needed. This was done by several means and there was no universal method used. Generally, interlocked signals had square blade ends. This was typically referred to as a “Home signal”. If the distance between trains was large a “Distant signal” was used to warn that the engineer and give an indication of what aspect the Home signal displayed. The blade of this signal was usually had an inverted V cut in them. These were commonly called “fish tail” blades. Blade colors differed from road to road but were often red for home and yellow for distant signals. Soon the traffic density required more than three aspects. Two and three signal heads were mounted on the same mast. For signals at interlocking plants the heads were mounted on the same side of the mast. In some cases, block signals were distinguished by having the top heads were on the right and the low head on the left. The variations in lens position and blade shape were many. In some cases, the head configuration was changed. An example of this is shown in Figure 5, an upper quadrant semaphore commonly in use on the Chicago and Northwestern Railway.



Better light sources using lenses to focus the light reduced the engineer’s dependency on the blade position for day indications. But in the end the drawbacks of the semaphore caused it to be replaced by a light signal in which day and night aspects were the same. Where semaphores survived they did so where these signals could be easily seen, such as where there was little fog, smoke or competing traffic or street lights. The western plains were one such area where the Santa Fe (AT&SF) and Espee (Southern Pacific) were typical long-time users.

**Figure 1**

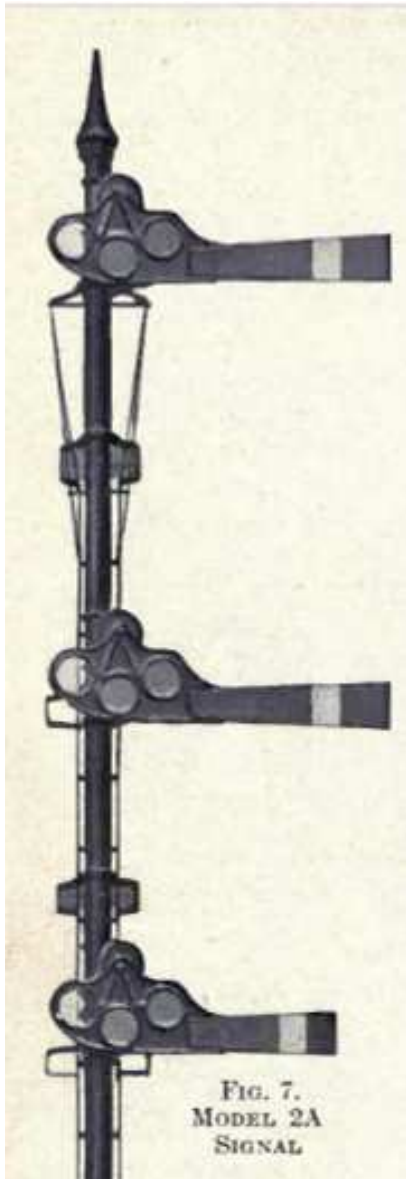


Figure 3

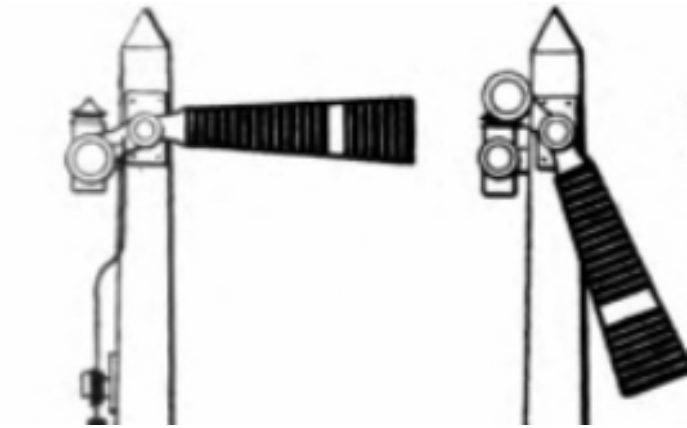


Figure 2

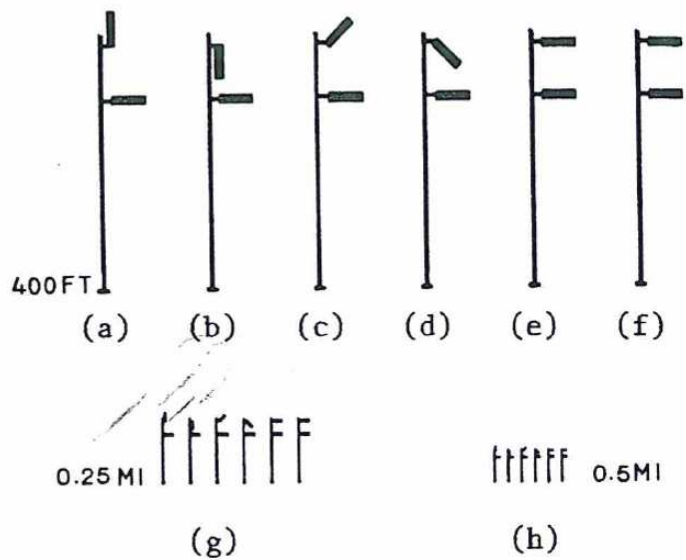


FIG. 4 SIGNAL ASPECTS



**Figure 5**



Photo above: Veteran's Day, November 11, 2017 finds 0-4-0 Viscount #6 on an excursion special at the Eden, NY depot. The tracks are former Erie RR (Buffalo & Southwestern), later Erie-Lackawanna, then Conrail, and now operated by shortline Buffalo Southern. Although the railway names have changed, there's nothing like steam and a semaphore signal to complete a classic scene. Photo by John C. Dahl.



For more information online:

C&NW Signals - do a Google search for "Chicago and Northwestern Railway semaphore"

British Signals  
<https://signalbox.org/books.php>

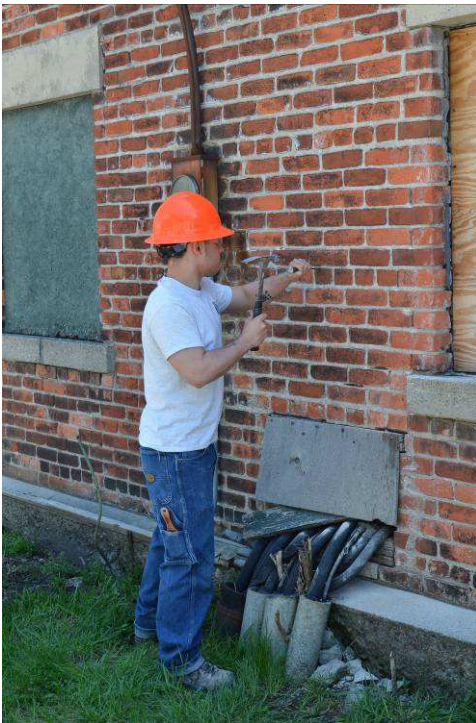
Old Semaphores  
<https://faculty1.coloradocollege.edu/~bloevy/sunsetforsemaphores/>  
<http://algomacentral.railfan.net/new3.htm>

Above: the Lehigh Valley's one time Newark Valley branchline station at Flemingville, NY still sports this handsome semaphore signal, seen here on a quiet, somewhat gray afternoon of May 19, 2018. Photo by John C. Dahl

## TOWER EL2 BRICK REPAIRS

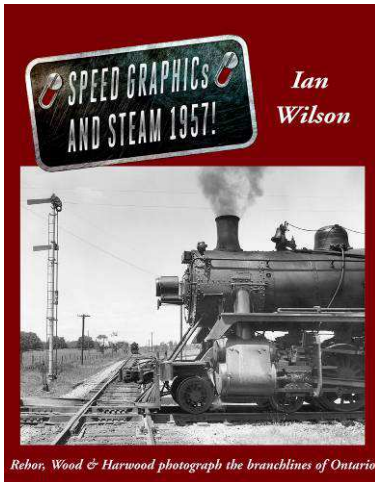
All photos by Greg Gerstung

As detailed in President's Ball's "Message", students from the Iroquois Job Corps. have been working hard earlier in May on EL2, mending its over one hundred year old bricks. Their efforts are greatly appreciated by all of us in the Chapter, and the community is gaining a historic landmark that will recall railroading's historic links to North Tonawanda, not an eyesore in dire need of repair.



## A RAILFAN'S BOOKSHELF

*An occasional column of book reviews*



### Speed Graphics and Steam 1957!

By Ian Wilson

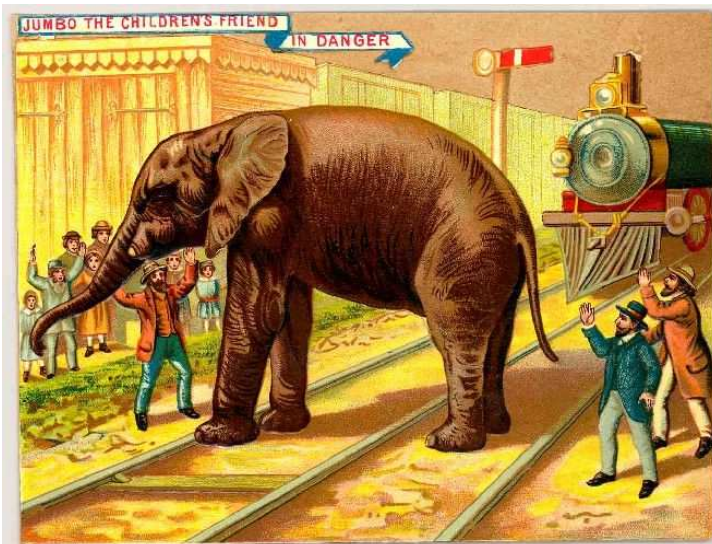
Canadian Branchline Miniatures

From the late 1920's through the 1950's and beyond, the Speed Graphic was one of the best large-film-format cameras on the market, preferred by professional photographers for its capabilities. Many of the iconic photos of the mid Twentieth Century were produced using this family of cameras.

For those of us who were only knee-high or not yet even born, during that sun-filled, glorious summer of 1957, this book is a time machine. Steam locomotives still roamed wide in southern Ontario, Canada on many of the myriad branch-lines of Canadian National and Canadian Pacific. They even still held many roles on important mainline passenger trains. It was a world where two lane highways were the norm, where small towns and everyday life had a less hurried pace, and where the railroad station was still an important center of the social fabric. Railway tracks went everywhere, the rural landscape was not marred by suburban sprawl, and Internet technology had not disrupted our everyday lives. The photography is of course superb, in this 192-page hardcover, with over 300 stunning photographs of what was the end of an era. The dead-lines would soon be growing; the steam age would soon enter a twilight-eternal. Luckily for us renown railfan photographers John Rehor, Don Wood and Herb Harwood were there to preserve it on film. Author Ian Wilson has returned these pictures to life again with his elegant and detailed prose on the pages of this outstanding publication. I can hear the melodious whistle of the local hollering now for the next crossing. *JCD*

## THE SAD TALE OF JUMBO AND THE GRAND TRUNK RAILWAY

*The following information has been edited from that provided by the Elgin County (Ontario) tourist bureau and St. Thomas & District Chamber of Commerce.*



Jumbo, the African elephant was the star of the Barnum and Bailey circus and P.T. Barnum's greatest coup. He is reputed to be the largest elephant ever in captivity and is probably the best known non-human that ever lived. His name is a household word in most countries of the world and is used to describe everything from ice cream cones to jet aircraft.

On his second visit to St. Thomas (Ont.), on September 15, 1885 Jumbo had a fatal collision with a Grand Trunk locomotive. A monument was constructed to commemorate the one hundredth anniversary of this fateful event, and was unveiled on June 29, 1985 at the west entrance to St. Thomas.

The Jumbo story began in 1861, near the town of Mombasa, Kenya, when Jumbo, a young African elephant was purchased by a German big game collector from a tribe of Arab hunters. He was sold to the Paris Zoo, the Jardin Des Plantes, where he remained for three years. He was then traded for a rhinoceros to the London Zoo



and was the first African elephant to reach England. He remained with the zoo for 17 years and it was during this period that he reached his great size and endeared himself with his gentle ways to members of the Royal Family and hundreds of thousands of English children that he carried on his broad back.

Agents of P.T. Barnum saw Jumbo and persuaded Barnum to sign an offer to purchase Jumbo for \$10,000. Queen Victoria and millions of Britons, young and old attempted to prevent the sale of their beloved Jumbo to the "Yankee Promoter". But the courts could not prevent the legal transaction and when the London Mirror attempted to purchase back the contract, Barnum wired that Jumbo was not for sale, even for one hundred thousand dollars, and that fifty million Americans awaited his arrival in the U.S.A.

When the time came to ship Jumbo, he refused to enter his carriage and when his keeper attempted to walk him to the London docks he lay down in the street as soon as he left what had been his home for 17 years. A female elephant kept up a constant trumpeting as he was being wrenched away from her. Graphic descriptions of all this in dozens of major newspapers on both sides of the ocean, contributed to great fanfare which was further augmented by spectacular posters displayed by Barnum showing Jumbo taking gifts from 3<sup>rd</sup> story windows as he towered above horses and carriages. Thousands thronged the docks on his arrival in New York and thousands lined Broadway as he was carted down the street drawn by a hitch of many powerful draft horses. Jumbo appeared in the Hippodrome in New York for several months and then toured America with the Barnum and Bailey Circus in his own "Palace Car". He struck up a friendship with the diminutive clown elephant Tom Thumb and the two animals won the hearts of millions as they went from town to town.

On September 15, 1885, in St. Thomas, Ontario, Jumbo and Tom Thumb were being led back along the tracks to their circus railway car after the evening performance, when an unscheduled Grand Trunk train suddenly appeared out of the fog. Jumbo and Tom Thumb were trapped between the parked circus train and a steep bank. Jumbo refused to descend the bank. As they raced for safety along the track they were overtaken by the train. The locomotive and two cars derailed. Tom Thumb was hurled down the bank and received a broken leg. Jumbo was thrown forward into the line of the railway cars; a tusk was driven into his brain. As he lay dying in the cinders, he tenderly reached up with his trunk and drew his keeper Scott down to him. It was the end of 20 years of devoted friendship between a faithful servant and his master. Ever the promoter, Barnum immediately spread the story that Jumbo had charged the locomotive, giving his life to protect his two companions.

Jumbo's mounted hide traveled with the circus for two years, and then it was donated to the Tufts University Museum in Boston. In 1975 the skin was destroyed when the museum burned to the ground. The skeleton remains on display in the New York Museum of Natural History.

## ON THE TRACK AHEAD

September's meeting we hope will feature Tom Gascoigne with a program of very vintage 1940's to 1950's, original Kodachrome color slides that he has been collecting for years, many taken by notable rail photographers. We are ALWAYS in need of new program material. With ten scheduled meetings a year plus a major presentation at our annual banquet, that's a lot of programs and new volunteers are needed each and every year. It is no secret that in the last few years we have lost a number of our loyal, regular program presenters to the "grim reaper"! As Charles Dickens once mused "Time and tide wait for no one!" These gentlemen were giants in their areas of railroad history, and are not easily replaced. But you, the new historians of railroading, must now come forward to continue the tradition.

So, don't be shy! Contact Jim Ball and he will most graciously accommodate your schedule and ours! Thanks in advance.

## CHAPTER CALENDAR

- JUN JUL AUG SEP Station Open for 2018 Summer Season. Saturdays 1PM to 4 PM. Volunteers needed! Come visit your museum this summer and enjoy a look a railroadings' rich heritage in Western New York.
- JUN 8 Regular meeting, Buffalo Central Terminal, 8 PM. Color, sound movies; The last of the E-units from 1978 in Buffalo, filmed by and presented by Devan Lawton. Don't miss this!
- JUN 9 1940's Dinner Dance at Buffalo Central Terminal. Music, food, 1940 dance lessons and more. See <http://buffalocentralterminal.org> for more details.
- SEP 14 Regular meeting, Degraff Community Center, North Tonawanda, 8 PM. Color slides, 1940s – 1950's from the collection of Thomas Gascoigne.

The Niagara Frontier Chapter NRHS, Inc. is a 501 (c) (3) publicly supported organization.

Contributions may be deductible for income tax purposes in accordance with the Internal Revenue Service.

**\*\*\* IMPORTANT REMINDERS \*\*\*** If you receive hardcopy of the ESX and your mailing address changes, please send to the attention of Neal Kerin so that your Empire State Express can be addressed properly. Likewise, if your email address changes for any reason, please let Tony Schill know by sending it to the [newsletter@nfcnrhs.com](mailto:newsletter@nfcnrhs.com) THANK YOU

*The Empire State Express* is mailed free to all members of the Niagara Frontier Chapter NRHS, Inc. Anyone who is not a Chapter / NRHS member may receive *The Empire State Express* by mail at a subscription rate of \$35.00 a year postpaid, e-mail rate \$25.00. Please contact the Chapter at PO Box 1043, North Tonawanda, NY 14120 for details.

www.nfcnrhs.com



ADDRESS SERVICE REQUESTED DATED MATERIAL – PLEASE EXPEDITE

The Empire State Express  
 NIAGARA FRONTIER CHAPTER NRHS, INC.  
 POST OFFICE BOX 1043  
 NORTH TONAWANDA, NY 14120