



The Semaphore

Newsletter of the Rochester NY Chapter, NRHS
P.O. Box 23326, Rochester, NY 14692-3326; Published Monthly

October 2004
Volume 47, No. 2

Program for Oct. 21:

Depots of the Erie Rochester Division

by John Stewart

John will be presenting a slide show of the depots that exists or existed along the Erie Rochester Railroad Division.

He invites members to please bring Erie photos, artifacts and memorabilia to share at this meeting.

John has explored, researched, and photographed many artifacts along the rail lines from Rochester into Pennsylvania.

Guest Visitor to be Present at the October Chapter Meeting

The Chapter will welcome **John Curran** as a guest to our October 21st Chapter meeting. John serves as a core planner for Neighborhood United, a grassroots neighborhood improvement group serving the Bulls Head section of West Main and Brown Streets. He will be giving a brief presentation on efforts to encourage West Side economic development including the creation of a "historic district" that would include the former BR&P/B&O passenger station currently occupied by Nick Tahoe's restaurant. John will discuss the possibility of utilizing that building for the Frederick Douglass Museum and developing a trolley ride to link that site with the Susan B Anthony House. John will speak prior to the entertainment segment of the meeting.

Meetings at: 40&8 Club

Business discussions at: 7:30 PM

Program at: 8:00 PM

Future Programs

November 21: *Oil Creek Railroad* by Dick Senges.

December 16: *Railroads of the Southern Tier* by Fred Trumbore

Chapter Library

11 May Street, Webster (by OMID Tracks)

Hours: 7:00 to 9:30 PM

Monday, Oct. 25, 2004

Library Phone: 872-4641

New B&O signal installed at Switch #6



Mike Dow and Dick Holbert recently teamed up to install a new northbound signal at Switch #6 on our mainline. The signal is a Baltimore & Ohio position light signal including the extra signals above and below the position light signal. The signal is installed and lit. More work including painting is planned. [Chris Hauf photo & caption]

Summer ends with the Annual Picnic.



Don Shilling and his grand kids are anticipating that corn being shucked by Dave Peet, Marge Warner and Ron Amberger. [Chris Hauf photos]



TRACK CAR OPERATIONS

by Harold Russell

Track Car Operator's Schedule (to End of Season)

	<u>Operator A</u>	<u>Operator B</u>	<u>Operator C</u>
Oct. 10	Mike Roque'	Joe Werner	Jessica Stallone
Oct. 17	Phil McCabe	Ryan Kane	Joe Nugent
Oct. 24	Phil McCabe	Bob Achilles	
Oct. 31	Bob Achilles	Greg Dunham	

Depot Tour Guides

Oct. 10: RIT Train Club, Otto Vondrak, organizer.

Oct. 17: Tom Saul

Oct. 24: *Open* - contact Dave Peet

Oct 31: Dale Hartnett, Harold Russell

Final weekend!

Dave Peet would like volunteers rather than "recruit/draft" to fill a position. Call Dave at 586-8964, or <davepeet97@frontiernet.net>.

Being a Depot Guide can be an invigorating experience. You will tell (or learn more) about our collection, and will most likely meet a current, or ex, railroader within a group. With each tour, you will find yourself 'polishing' your presentation, and finish the day feeling enlightened!

Young Railfans Days

Saturday, Oct. 16

Saturday, Oct. 30

Fall NRHS Director's Meeting in Utica, Oct. 24-25.

Twice a year the National Directors, one from each chapter, meet to discuss policy. The Fall meeting will be hosted by the Utica and Mohawk Chapter in Utica. Any member, not just Directors, are invited to attend.

On Saturday, a train excursion is planned between Utica and Lyons Falls on the MA&N Railroad. The fare will be \$75 and includes a box lunch.

House available near CSX

249 Penhurt Rd., Brighton. The CSX's mainline is at the rear of the property. For more information, contact Kristen Vanden Brul, @ Columbus Reality, 244-7777, ext. 19 or www.Columbusera.com. SH

A Safety Note —

One in 3 out of 10 house fires start in the kitchen. SH

The Rochester & Genesee Valley Railroad Museum closes for the season on October 31. Thanks to all who volunteered to make another successful season — even though the weather was not the best.

WAG plow has website

Jesse Marks has created a new website based on our WAG (B&M X3215) snow plow.

Link: <http://www.geocities.com/wagrr4271/WAG.html>

Chapter's WebSite

If you haven't looked at the Chapter's website recently, we urge you to do so. Chris Hauf has devoted considerable time in keeping this site up to date.

This site contains Chapter news, images of *The Semaphore* since 2001, a sampling of historical photographs in our collection, among other interesting items.

The URL: www.rochnrhs.org

RIT Model RR Club Fall Show

On Sunday, October 24, the RIT Model Railroad Club will have the Fall Train Show at the Student Union Building on the RIT campus.

If any NRHS members want to come out and "volunteer" their time on an HO scale railroad, the club would welcome the extra help. Members wear "TRAIN CREW" shirts based on Chris Hauf's idea, except the clubs are orange and black for the school's color.

The Chapter will also have a table at this show. Extra help at the table would be appreciated.

This show tends to have vendors that are not present at other local train shows.

First installment on the Telegraph, by Chris Hausler, appears on Page 7.

Membership Report

Janet Dittmer, Chair

Change of address:

Ron Amberger's new address -
68 Eagle Pine Way
Rochester, NY 14623

Membership Contact:

Janet Dittmer, Membership Chair
983 N. Winton Rd.
Rochester, NY 14609-6824
<daveluca@frontiernet.net>

Membership Rates:

National + Chapter membership: . \$40
Above as Family membership \$50
Local* \$20
Local as Family*..... \$27
(* Holds National membership elsewhere)
National only \$20
National as Family only \$23
Subscriptions only: \$8

Scanlon's collection mentioned

The October 6th issue of "Our Town" Wednesday supplement of the *Democrat and Chronicle*, published an article entitled "Eclectic collections."

Joe Scanlon was interviewed about his antique construction equipment collection.

"I purchased and restored a 1937 Bay City Model 38 shovel (what people call a steam shovel, although it isn't steam powered) This collectible weighs 38,000 pounds," wrote Joe.

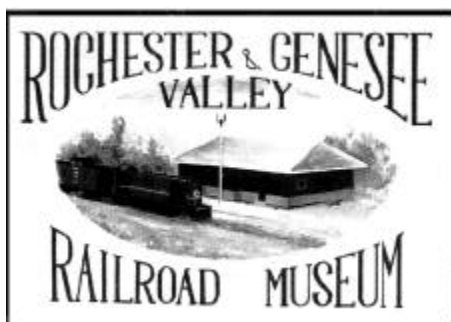
Otto has article in RailPace

The September 2004 issue of *RailPace Newsmagazine*, starting on page 38, is an article that Otto Vondrak wrote about "Farewell to Boston's Last 'EL.'" It is illustrated with nine photographs.

Over the years, Boston had a number of elevated railroads. The one that Otto documented is the Green Line that runs from North Station, over the Charles River and terminates at the Lechmere Loop in Cambridge. It is to come down this summer.

Contributors to this issue

Ron Amberger, Janet Dittmer, Dale Hartnett, Chris Hauf, Chris Hasuler, Steve Huse, Jesse Marks, Dave Luca, Dave Peet, John Redden, Harold Russell, Don Shilling, Joe Scanlon, John Stewart, Jeremy Tuke, Otto Vondrak, Rand Warner.



MUSEUM MUSINGS

by Dale Hartnett

A few years ago, we hired a new General Sales Manager where I work. He had worked for many different companies so he had seen a lot of what works and what does not work.

This GSM made the comment: "You folks need some systems here."

What he really meant was that we needed simple ways to do repetitive tasks so that we could do them quickly and effectively. That way, everybody in the organization knows what to expect, when to expect it and what his or her role is in making it happen.

I feel we could use some better administrative systems at the Rochester & Genesee Valley Railroad Museum.

I'm not necessarily saying we need more bureaucracy. We all face too much of that in our daily lives.

But we do need to develop standard procedures for mundane items. These range from where we park equipment to what we do with extension cords when we are not using them. How do we handle tools? How do we notify the right person that supplies are low? How do we communicate our priorities? What do we need to acquire and what don't we need? What tracks need to be free? Whom do we need to consult before starting a project?

Systems work and save time. While some might feel that they will infringe on personal freedom, they allow us to work together better. As a result we all have more time to do what we want to do and spend less time frustrated with real or perceived obstacles that are in our way.

Here's the challenge.

1. We need to develop systems that work most of the time.

2. We need to communicate those systems to everyone. If we fail here, we have no systems.

3. We each need to abide by the systems. "Freelancing" in this area only creates more frustration.

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Managers

Railroad: (Motive, Rolling stock, MOW, ROW)

Chris Hauf: 381-8583; crhauf@frontiernet.net

Infrastructure: (Buildings, grounds, shops, construction, communications, signals & power, heavy equipment)

Dave Luca: 288-0318; daveluca@frontiernet.net

Visitor Experience: (Visitor, Train & Track Car operations, 4-Q Vision, Special events)

Dale Hartnett: 243-0139; dhartnet@foxrochester.com

4. We need to listen to one another to make systems better.

Have an idea for creating or improving a system? Consult with one of the museum managers. We'll listen and give it full consideration!

Hats off to Harshbarger

Supt. Tool Car & Shops
by Rand Warner

Charlie Harshbarger maintains and stocks our tool car which we all use constantly.

He also works his magic on the Flexivan trailer for the Heavy Equipment side.

And supports our many operations and projects in the Restoration Building.

And supports heavily the trolley substation and workbench area at NYMT.

And takes all our bottles out for deposit for Steam Fund.

And brings in all our gas and kerosene fuel, and orders our diesel fuel.

Don't get in his way or your might get run over!

Jumpin' with Johnson

Supt. Electrical & Engineering Depts.
by Rand Warner

Our had working, resourceful and highly motivated Jim Johnson is just about everywhere.

His main gig is the trolley power substation ad NYMT which he has put untold hours into.

He also spearheads all wiring for our ever increasing efficiency at the Restoration Building.

And, oh by the way, he's been working on electrical systems for locos RG&E #1941, Eastman Kodak #6 and Lehigh Valley #211.

And don't forget the hard wired power into the MDT reefer display.

And maintains our Engineering area.

And then there's the wiring rehab on the excursion train set.

Where does this man stop?

New York City Trip: Dec. 10-13

The 14th Annual New York City Pre-Christmas trip includes orchestra seat for the Christmas show at Radio City Music Hall starring the Rockettes.

This escorted trip departs Rochester's Amtrak station Friday morning, December 10 and returns Monday evening December 13, 2004 (3 nights).

The trip includes round trip Rochester-New York City in a reserved section of an Amtrak coach, three nights at the Hotel Metro, five minutes walk from Macy's and the Empire State Building, one full dinner including dessert, tips and taxes, Orchestra Seat for the Saturday evening Christmas Show starring the Rockettes at Radio City Music Hall, three continental breakfasts at the hotel, round trip transfers between Penn Station and the hotel, and baggage handling and tips at the hotel. An optional tour will be offered on Saturday to the Statue of Liberty and Ellis Island.

The trip cost is \$610-640 per person, double occupancy. Children's rates are available.

Only a few spaces are available.

Please call the Chapter's tour guide: Jim East at 585-377-5389.

Chapter Tid-Bits

— Attendance at last Diesel Days event was 550, compared to 1049 in 2003. The decline was attributed poor weather conditions on Saturday. Still the event was the fourth largest attendance for the combined operations ever. In contrast, the revenue per person was higher this year.

—The construction gang has regraded the areas to and around the Restoration Building to remove the ruts. They have asked that when the ground is 'soft', that you refrain from driving over these areas. The presence of ruts hinders the drainage of water.

—Mike Dow states that the new B&O signal has potential to show 27 different signal indications!

Motive Power Update

by John Redden

Steam Locomotives

Heisler Steam Storage Locomotive: We have been working on finishing the valves and pistons for this engine, so that it can be sealed up, prior to the onset of inclement weather. Kevin Klees has been cleaning up the valve bobbins, and has the head seals ready to install. John Redden has cleaned up and painted the access covers for the front tank-support area.

Diesel Locomotives

Several people have continued working on the removal of rust and loose paint, and the re-painting of the EK-6. Thanks go to a number of volunteers, including Jessy Stallone, Rand Warner, John Redden, and Harold Russell. Rand has continued preparing and painting the areas below the locomotive frame. Jessy, John and Harold have worked on the cab and hood areas. The appearance of EK-6 continues to improve.

Norm Shaddick did preventative maintenance on the USA 1843 this month, including servicing the batteries.

Plymouth Gasoline Locomotive

Progress continues on our 6-ton Plymouth Model BL locomotive. The Large (27" diameter) flywheel has been completely resurfaced with a grinding rig that was designed and installed by Kevin Klees. This was a very lengthy process, but the result will ensure smooth operation of the locomotive for a long time. This wheel was also checked for cracks with a dye penetrant test. No cracks were detected. Also the grinding process improved the balance of the wheel by removing material from the thicker side of

the wheel.

Thanks to Norm Shaddick, Mike Dow, and Kevin Klees, the large cross shaft has been moved to our new Metal Lathe for rebuilding of the bearing mounting surfaces. New 5" diameter roller bearings for the cross shaft are on hand and ready to be installed as soon as the shaft is ready. The pillow blocks for the new bearings have been cleaned and painted.

Cleaning of the large (27" diameter) friction drivewheel has also been completed. This spoked wheel is lined on it's outside diameter with a material that appears to be wood fiber and metal dust held in a Phenolic binder. It is quite tough and only needed a little touch up with sand paper to remove a few grease spots. Soon the transmission for the Plymouth will be reassembled. When it is complete, we will have another major sub-assembly of the locomotive completely rehabilitated.

Next steps include cleaning the flywheel roller bearings, axle roller bearings, and all chain sprockets. Then the Buda engine can be reinstalled, chains purchased and installed, and the Plymouth should be ready to move under it's own power for the first time in many decades.

Thanks to Kevin Klees for input to this article.

Kevin Klees, pictured below with Ron Amberger, created a rig with a small metal grinder that he used to grind the surface of the flywheel on our Plymouth BL gas-mechanical locomotive smooth. It took Kevin over 60 hours to get it right, but the results are awesome. *[Chris Hauf photo & caption]*

Library Report

Charles Robinson, Chairman

The library will be open for *your* use on Monday evening October 25 between the hours of 7:00 and 9:00 PM.

There is one precaution. Due to a water leak in the pipe running to our building, the water has been shut off. Thus it is necessary to bring water to flush the toilet. So those who plan to come that evening, please consider bringing two gallons of water in plastic milk containers with caps. Please, if the water is not used, be prepared to leave the filled bottles so that there will be an emergency supply of water to take care of flushing problems for other occasions.

Instructions on how to flush, are posted on the lid of the toilet. It is expected that the water leak will be corrected after the train rides are finished.

The **good news** is that Bill Limburg has contributed his efforts to make and install an impressive new window on the west side of the west cupola. The window will have double glazing to reduce heat loss and replaces a rotting window that promoted heat loss. This has been a time consuming job that is yielding an important improvement in the library structure. Thank you Bill.

The library chairman has pursued fixing roof leaks again. With the expectation that all is tight, the tarp on the East cupola has been removed to test the repair job.

Gale Smith has continued with inventorying and cataloging the large Dick Barrett contribution to the library. Jerry Gillette and the library chairman are winding up the inventorying and filing away the miscellaneous items in Dick's collection. Dick was a dedicated railfan and his collection contains numerous important historical items.

Jerry Gillette has recently completed a survey of the periodical room with the purpose of getting our collection in better order. Many members have taken advantage of the library's unusual collection of steam railroad tapes.

So come on out to the library Monday evening October 25. Oh yes, if you are able, please do not forget the two one-gallon milk containers filled with water. If you do not have the water come anyway. There should be sufficient water to work the toilet!

Happy Halloween!



Translated: "Be careful out there — Beware of the Goblins!"



Drainage Strategy

by Rand Warner

With the help of Joe Scanlon, Art Mummery, John McDonald, Dan Waterstraat, Scott Gleason and others, we have our latest mudslide resolved and repaired with rip-rap.

To prevent further erosion and weakening of our west facing embankment on the main line going up the hill from the Depot, civil engineers Joe Scanlon and Tom McTighe have both recommended: increased drainage ditching along the east side of our track so prevent water from going through the ties and ballast to the west side where it causes problems.

Joe suggests we use a team of hand shovelers, working from the foot of the hill north, and using our side dump car to transport the spoil north to the areas where we need fill.

Better to be proactive with ditching than

Track & Right-of-way

Supt. Randy Bogucki

Only at R&GVRM would our resourceful track crew erect floodlights and use a generator, so they could work longer hours these nights with early sunsets!

The scheme is working so well that the guys loose track of time after it gets dark and don't know when to call it quites, come in for pizza, and go home to some sleep.

Thanks to Randy Bogucki, Mark Pappalardo, Duncan Richards & Co. we are getting more new ties installed south of Switch #6 and elsewhere.

We also have weak track areas reinforced with a recent shipment of gage rods.

This winter we will probably see them out working in snowshoes!!

A source for parts

Ron Amberger writes of source for loco parts and trolley wiring. It is: <http://www.williamsdistribution.com/distribution/index.jspfa>.

? Why were many railroad stations and structures before 1910 constructed with 'board and batten' siding rather than clap board? Send answers to the Editor; addresses on Page 8.

A To date no response to this question has been received. It would seem that 'board and batten' would not be as effective against bad weather.

Otto adds information

Under the topic "Woodworkers of the World Unite" by Rand Warner, Otto observed the absence of the saw dust made by the RIT Model Railroad Club gang while making step boxes for our equipment.

Otto wrote: "Joe Werner assembled some step boxes for equipment that was in use for this past Diesel Days. Joe assembled step boxes for 1843 and 1654, while Chris Hauf painted them and applied decal numbers. Last year, Joe and the gang from RIT assembled boxes for the Erie caboose, LV 211, and the Penn Central transfer caboose."



Here Otto works assembling one of the step boxes.

Railcar hobbyists explore WNY&P.

On the July 4th weekend, 36 railcars plus the Western New York and Pennsylvania's hy-rail and motor car toured the line between Hornell and Meadville, using Falconer, NY as their starting point.

The group were members of the Ohio Valley Railcars, Inc.

Weather did threaten, but it rained at night. Although much planning was required, they declared the trip successful with anticipation of visiting LA&L other properties in the future. [Source: *Empire State Express*, NF Chapter, Sept. 2004]

[This sounds like a 'fun' thing to do.]

Link's photo exhibit at Cooperstown

An exhibit entitled "Arrested Motion: 1950s Railroad Photographs by O. Winston Link" has been on exhibit since April 1 at the Fenimore Art Museum, Cooperstown, NY and will remain on view until December 31, 2004. The Museum is located on NY State Route 80 (Lake Road) in Cooperstown. [Tower Topics, Sept. 2004]

History has to repeat itself because people are so forgetful.

Shows, etc.

Oct. 16: Lyons Lodge, Lyons, NY sponsors an excursion on the old NYC Himrod to Watkins Glen and back; 30 miles round trip. Two trips: 10:00 am and 2:00 pm. Tickets: \$15.00 per passenger; under 2 is free. Boarding is in Himrod. Rail line operated by Finger Lakes Rrailway Corp. Contact: Rick Wunder, (315) 946-4844.

Oct 16 & 17: 150th Anniversary of the Syracuse, Binghamton & New York Railroad. Excursion trips between Binghamton and Syracuse. Info: 315-488-8208 or cynrhs@aol.com.

Oct. 24-25: Fall NRHS Director's Meeting at Uitca.

Oct. 24: RIT Fall Train Show, 10-3:30, Rochester Institute of Technology Student Union, Henrietta, NY. \$3, General Admission, \$2, Senior Citizens, Students with ID and children under 12 - Free. Latest info on their web site:

Upcoming Anniversaries

by Rand Warner

75th Anniversaries of Abandonment of Rochester area Interurban Lines:

? Rochester & Eastern: July 30, 2005

? Rochester Lockport & Buffalo: April 30, 2006

? Rochester & Syracuse: June 28, 2006

50th Anniversary of Closing of Rochester Subway for Passenger Service: June 30, 2006.

2007: 70th Anniversary of the Rochester Chapter, National Railway Historical Society!

We have some time here to plan some significant and appropriate recognition

Turbo liners back in the news

As you know New York State Department of Transportation and Amtrak have been at odds about the States' train sets.

In September, Amtrak towed the three sets from Rensselaer, where they were stored, to its storage facility in Wilmington, Del. Transportation Commissioner, Joseph Boardman, accused Amtrak of 'hijacking' the sets and wants them returned.

Amtrak quit using the trains in June because of faulty air conditioning. They also claim they are more expensive to operate.

The original contract stated that the state take ownership only when Amtrak fully accepted them as satisfactory for service. [Albany Times-Union, 9/23 via *American Rail Link*, Issue 178]

Construction & Equipment

By Joe Scanlon

The September hurricanes wreaked havoc over the Eastern and Southern United States, local flooding and power outages were significant.

The Rochester & Genesee Valley Railroad Museum suffered a slope failure North of Switch 1, which shut down our line but thankfully did not affect the L.A.&L. Railroad.

The construction group was able to rely on its large inventory of available heavy equipment and put together the right combination of manpower and equipment to quickly repair what could have been a major blow to our museum operations.

The former H.J. Kearsse Northwest model 25 crawler crane was fired up. A 1/2 cubic yard clam bucket was pulled out of our bucket inventory and rigged up to the crane. The crane reached across the L.A.&L. track from the equipment yard to clam out the saturated earth that had slid down the slope. Our ex-R.G.&E. Trojan loader was used to load our ex-Army dump truck to feed big crushed stone to the clamshell crane. After removing the saturated earth, the crane placed the surge stone on the slope to stabilize it again. All this work was done in coordination with the L.A.&L. Railroad to make sure that our work did not interfere with train traffic thru the work area. By using the crawler crane, we never had to put a machine on the L.A.&L.'s track.

After two Tuesday nights and one Saturday work session the museum track was put back into operation. The only cost to the museum was the crushed surge stone to put back on the bank.

It wouldn't be accurate to say that this project was 'just a walk in the park.' But it would be fair to say that the museum had the right combination of talented members and equipment to quickly resolve what could have been a costly and complicated problem.

Here's a 'tip of the hard hat' to Art Mummery, Joe Scanlon, Scott Gleason, John McDonald, Dan Waterstraat, Rick Israelson, Rand Warner and all the others who pitched in once again to help keep our museum going!

Moving a circus by train

[The following is excerpted from "Branch Lines" appearing in the July 2004 issue of *Progressive Railroading*. The article was submitted by Don Shilling.]

Over 20 railroads are used each year to move the Ringling Bros. circus' Red and Blue units by railroad. In 2004, this circus visited 41 and 44 cities, some in Canada and Mexico, between Jan. 1 and Dec. 12.

It is the only circus that travels by rail. They have found that the animals, especially elephants,



Above: The Northwest crawler crane with its clam bucket eases earth across the LA&L tracks. Note the tracks were protected from 'spillage' by a tarp.

Below: The resulting bucket of earth was transferred to one of the ex-Army dump trucks and hauled to a more suitable location! [Photos by Chris Hauf]



do not like trucks. Rail cars provide a much smoother ride, and more room to move around.

Class 1s, regionals and short lines are used to move the 58-car Blue Unit and the 56-car Red unit. The circus places its own maintenance car and crews on each train, who can change out a wheel or make other necessary repairs in the field.

The trains are more than 5000 feet long. Occupants in automobiles will grumble at rail crossings — until they see it is a circus train, remember days gone by, and then they wave!

Up to six months of planning are

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required each year between the circus and the railroads. After a route is proposed, bids are solicited from the railroads. Some roads, such as BNSF, have long standing cooperation with the circus. Planning also includes where the train will be parked, so that the performers have safe access to nearby stores.

A lot of stories that have circulated aren't true about loose animals, etc. However, the article tells of a true one. In the 1980s an elephant stuck its trunk out from a car and knocked the train's orders off the caboose. They had to stop the train to 'tame' the angry crew members — and the rambunctious pachyderm.

[This is the first installment about the Telegraph and its apparatus and operations by Chris Haulser. Hope you will find it as interesting as I did.]

The Morse Telegraph Key

by Chris Hassuler

The telegraph key is probably the one telegraph instrument most frequently recognized by the general public. It is a simple “momentary contact” switch which opens and closes the main line telegraph circuit and by which a trained telegrapher can send messages using the dot and dash alphabet of the Morse code. Keys intended for land line service are constructed with two switches in one, one switch being the key itself and the other the “circuit closer” switch. This circuit closer switch is the separate lever switch which is located to the right of the sending knob on the key. Both of these switches are in parallel such that either one can open or close the circuit.

The “modern” telegraph key design is called the “steel lever” key. The lever arm of the key including the shaft on which it pivots is a single piece of stamped metal. This form of key was developed by Jesse H. Bunnell, a Civil War telegrapher of some renown who eventually became one of the best known manufacturers of telegraph equipment. In earlier forms of keys, the lever arm and the shaft on which it pivots were separate pieces pressed together. With use, the lever arm would frequently become loose on the shaft and slide sideways, thus making the key unusable. The “steel lever” key design prevented this from happening and was also cheaper to manufacture. It rapidly replaced earlier designs.

In North America, the standard telegraph circuit is constructed using the “closed circuit” principle. The instruments on a closed circuit telegraph line are wired in series and current flows in an idle line. An advantage of the closed circuit principle is that the power for the main line need only be provided at one point although for long lines it was classically provided, half at each end of the line. The ends of the lines were typically large telegraph offices and they had the required staff to monitor and maintain the large number of batteries or later, the large DC dynamos used for main line power. The voltage on a main line long distance telegraph circuit was commonly in excess of 300 volts DC. Western Union main offices at one time used plus and minus 160 volts. One



office would put plus 160 on its end of a line to ground and the other would put minus 160 on its end to ground. This made the “open circuit” voltage on the line 320 volts DC. The “wire chiefs” in the main offices would then regulate the current in the line, typically 40 to 60 milliamps, by adding or subtracting resistance elements.

With the closed circuit system, if a telegrapher wants to send a message, he opens his circuit closer switch thus opening the main circuit and then begins sending by closing and opening the main circuit with his key in the pattern of the Morse code. Since all the instruments on the line are in series, as the telegrapher opens and closes the circuit, all the receiving instruments on the line respond to his sending. It can be seen by this that the classic telegraph line is a “party line” in that as one telegrapher sends, all the other telegraphers on the line simultaneously hear the same message. Without the circuit closer switches all the other telegraphers on the line would have to continually hold down their keys so that current would continue to flow through the entire circuit. Woe be it to the novice telegrapher who after he finishes sending forgets to close his circuit closer switch, as it leaves the circuit open and thus unavailable to the other telegraphers.

The circuit closer switch has a second important function. If a telegrapher receiving a message detects a transmission error or misses something being sent, he can get the sending telegrapher’s attention by opening his circuit closer switch. This action “breaks” the circuit causing all the receiving instruments on the line including those at the sending telegrapher’s station to stop operating. The sending telegrapher hears this and recognizes that he has been “broken”. He closes his circuit closer switch and waits for the receiving telegrapher to tell him where the error was. The receiving telegrapher would do this by sending GA (go ahead), the last successfully received word and then would re-close his circuit closer switch. The

sending telegrapher would then open his and begin sending the message from the identified point.

As technology advanced, the telegraph was slowly replaced by keyboard based printing telegraphs. A popular brand of them was made by the Teletype Corporation and these units became known as “teletypes”. The requirement to break the sending operator continued, however, and the teletype keyboards were equipped with a “break” key which performed this same circuit opening function. When computers came along and remote access was desired, the already available teletype units provided a cost effective way to accomplish this. Used this way, early computer programmers were quick to capitalize on the teletype’s “break” function for interrupting program execution. As a result if you look at the keyboard on your IBM PC type computer, it likely has a key labeled “break” somewhere on the upper right hand side. This break key owes its existence to the circuit closer switch of the North American closed circuit Morse telegraph system.



It looks like I have ‘iron out the kinks’, with the help from Chris Hauf, in getting better reproduction of photographs—finally! We use a Xerox copier/printer connected directly to a computer. There is no intermediate hard copy; makes quite a difference!

Not all problems have been solved, though. I was using an older version of PublishIt. I like it, it does what I want it to do: has the right ‘tints’, is fast on a Pentium 166 running Windows 95; I know - ancient, but it got the job done. Well, almost. The computer connected to the Xerox machine has a later version of this program, and the two programs do not communicate with each other very well (so what else is new!). Frustrating, is that desirable items in the older program are not available in the new version. And of course, the interface and command structure was also changed. The lack of ‘tints’ is why the concrete floor diagram on Page 8 no longer indicates the status of the funds received. More monies are needed, since the committee wants to install the pit before the remainder of the floor is poured.

Rochester Chapter National Railway Historical Society
The Semaphore
P.O. Box 23326
Rochester, NY 14692-3326

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Rochester, NY
Permit #826

Chapter Meeting & Program:
Depots of the Erie
Rochester Division
by John Stewart
7:30 PM
Thursday, October 21, 2004
40 & 8 Club
933 University Ave.

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Pouring the Restoration Facility Floor!

The Restoration Building is up and running! Now we need to provide it with a concrete floor. We raised the dust to finish the space. Now we've faced with dust all over the place. One hundred dollars will buy a batch of concrete. The estimate for the floor is \$25,000; we'll need 250 batches (!). Help "cement" together a great project. Maybe we'll even let you write your name and date in a slab! [Don Shilling] (Each block indicates \$1,000)

InterNet (World Wide Web) address:
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