

TROLLEY FARE

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Wexford Station ribbon cutting September 30, 2016

Photo by Jim Herron

Wexford Station Completed

By Scott R. Becker, Executive Director

An old building is more than just the materials it's made of – it's how that building has touched peoples' lives over the years in many different ways. The Museum celebrated completion of the Wexford Station project on September 30 by unveiling exhibits that describe its uses over its 108-year history and the story of fast interurban cars that connected Pittsburgh to the North Hills.

Over 100 invited guests participated in the opening including elected officials, donors, volunteers, contractors and PTM members. Those speaking on September 30 included Bob Jordan – PTM Vice President, Erin Molchany - Gov. Tom Wolf's Southwestern Pennsylvania Representative, State Senator Camera Bartolotta, State Representative Brandon Neuman, Washington County Commissioners Larry Maggi, Diana Irely Vaughan and Harlan Shober, Ed Lybarger – PTM Archivist, Lynne Thompson – PTM Educator/Volunteer Coordinator, Jeff Kotula – President of Washington County Tourism, and Joe Stierheim representing the Brooker heirs. The Ceremony was dedicated to the memory

of Trudy Brooker Purvis, whose foresight allowed the Station to be preserved and then later donated to our Museum.

This event celebrated the culmination of efforts going back over 22 years when we first expressed interest in preserving this historic structure. The actual project goes back to the early spring of 2014 when we first were offered to preserve it by Trudy. At that point the wheels began turning to handle all the logistics involved in relocating and restoring this structure. This building, that once served trolley passengers and later postal and deli customers, was relocated from Wexford to the Museum on June 6, 2015 and has seen extensive restoration since then. Thanks to Lynne Thompson and many Archives volunteers, exhibits have been installed detailing the history of the Harmony Route and Butler Short Line, two interurban railways that connected Pittsburgh with the North Hills. These exhibits also cover the building's interesting history, including the 23 years it was used as a freight/passenger

Executive Director's Report, continued on Page 3

From the Front Platform

Preparations for the 2016 Washington County Fair included Operations developing a trial plan to attempt to maintain headway on the busiest nights and the advance striping of the portion of the Eaton Crouse-Hinds parking lot the PTM uses for the park and ride operation. Larry Lovejoy laid out the parking spaces and lines for the striping to apply. It worked extremely well. In fact, after the Fair, Eaton Crouse-Hinds striped the part of the lot they normally use to the exact same pattern! Also, the Fair sold admission tickets at the Eaton lot on the busiest evenings easing congestion and lines somewhat at the Fair entrance and trolley platform. We greatly appreciate Eaton Crouse-Hinds permitting the use of this lot by PTM.

However, the first five (of eight) days of the Fair were severely impacted by considerable rain every day which forced the Fair to cancel most of their events and in particular, the Wednesday evening School Bus Demolition Derby and the High School Battle of the Bands, normally an extremely busy night for them and the trolleys. Thursday evening was better than usual due to the entertainment being offered. The bottom line however was only about 5000 riders. Using the Fair attendance numbers, we did maintain market share. Also, Operations was not really able to try out their plan.

Thanks to all of you that supported the Penn-

By Dennis Bockus

sylvania Trolley Museum during the WCCF Gives Event held on Sept 13 by the Washington County Community Foundation. Donations totaling \$49,817 were received from 46 different people for support of our Museum. This is an increase of \$7,878 over last year and we were second overall in Washington County! With the match from WCCF the total received was \$54,324. These funds will be used for both general operating support and for specific projects that the donors directed their funds to. I sincerely thank all of you that participated in this event. WCCF Gives 2017 will be held on Tuesday September 12, 2017 so please mark your calendars.

Sorting and mailing of Trolley Fare in addition to his duties as Trolley Maintenance Manager, Bernie would like to focus on maintaining our operating fleet so Cindy Wells is taking over this function. I want to express the Museum's appreciation to Bernie for handling this important job for such a long time and to Cindy for taking this on.

The East Campus development advance planning work is progressing and I hope to have some significant news in the next issue.

PTM is built on the efforts of its volunteers over the years. We have good tools and facilities. Some like the office area can become overcrowded but we still can use more volunteers in all areas. PTM accomplishes a lot but just think what at least one

TROLLEY FARE

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Mission Statement

The Mission of the Pennsylvania Trolley Museum is to communicate the story of Pennsylvania's Trolley Era to a diverse audience through the preservation, interpretation and use of its collection of electric railway and railroad equipment, associated artifacts and photo/document archives, to ensure that visitors have an enjoyable and rewarding educational experience.

From the Front Platform, continued from Page 2

more volunteer than present in the roughly six major areas could do. We will train as needed. If interested, please contact Lynne Thompson. Email her at educator@pa-trolley.org or call the museum.

Executive Director Report, continued from Page 1



*Larry Lovejoy puts finishing touches on the Wexford Station
Photo by Bruce Wells*

station for the Harmony Route, its relocation to the middle of Wexford, and its 83 years of use as a post office, antiques shop, craft shop and finally as the very popular Wexford Post Office Deli. As opening day approached, the station was a beehive of activity on a number of fronts. In addition to exhibits being installed, Bruce Wells made and installed the replica station sign based on photos of the original. Locksmith Dan Mitchell completed installation of locks and door hardware. ACA Unlimited installed vintage gutters and downspouts as well as sidewalks that simulate brick pavement. Dan Bower & Larry Lovejoy completed earthwork around the building and the two former P&LE Railroad waiting room benches were moved inside by All Ways Moving & Storage of Washington, PA after being beautifully restored by Jim Herron and Barrie Baker in the Trolley Display Building. Larry Lovejoy, Bob and Mary Jordan, Don Bailey and Kathryn Black spent many hours detailing the building so it would look just right for opening day!

Funding was provided by grants from the Allegheny Foundation, Washington County Tourism Promotion Agency, Rivers of Steel National Heritage Area, Washington County Community Foundation, Tom E. Dailey Foundation, First Niagara Bank Foundation and many individual donations. Please note that The Rivers of Steel National Heritage Area is one of twelve supported by the Pennsylvania Department of Conservation and Natural Resources. This funding was provided via DCNR's Community Conservation Partnerships Program

and the Environmental Stewardship Fund to the Rivers of Steel National Heritage Area, which administers the Mini-Grant program. Many volunteer hours and contributed services have been received including donated refuse services by Waste Management, electrical work by Hartman & Hartman and donated equipment rentals by Bobcat of Pittsburgh. We thank the many donors, volunteers and contractors who made this project possible!

Unity Railways Caboose 53A was donated by PTM to the Rivers of Steel National Heritage Area. It was relocated to their Carrie Furnace site by Brownlee Trucking on August 3rd and is being displayed inside one of their historic buildings. This vintage 1916 wood caboose was built by the New York, Ontario & Western Railroad and was sold to the Unity Railways, near Monroeville, in 1953, not too far from Carrie Furnace. The caboose was donated to our Museum in 1966 and served as a "home away from home" for volunteers staying overnight at the Museum. During the 1990s it carried Santa during our Santa Trolley. It has been on display in the Trolley Display Building but doesn't really fit the Museum's mission. We are pleased that it has gone to a good home at the Rivers of Steel National Heritage Area!



*Caboose 53A was loaded August 3 for the trip to Rivers of Steel.
photo by Scott R. Becker*

A tip of the hat goes to the Port Authority of Allegheny County and the Friends of Philadelphia Trolleys (FPT) for making possible a light rail inspection trip over Port Authority's system on Saturday September 10. A number of people came out for the event which ran during heavy service for the Pitt-Penn State football game, providing lots of interesting photo opportunities! Special thanks go to Ellen McLean-Port Authority CEO, Bill Miller-Chief Operations Officer, Bill Steimetz-Director of Rail Service Delivery and Chuck Rompala-Special Services Manager at Port Authority for fitting our

trip in during such heavy service! The trip was part of an effort by the Friends of Philadelphia Trolleys to raise funds for the restoration of Philadelphia Transportation Company streetcar 8042. This streetcar was acquired from the Electric City Trolley Museum in 2005 and PTM would like to see it restored to service. At the Museum's Annual Meeting on September 10, FPT founding members Bill Monaghan and Harry Donahue presented a \$4,000 check to PTM. These funds were from the proceeds

Summer Fun and Fall Has Begun

Holiday Season!

The heat of summer is long gone and has now been replaced by crisp breezes and the orange and yellow glow of fall trees. This change of season brought our summer at Pennsylvania Trolley Museum to an official close. Visitors of the museum during July, August and September got to experience the Washington County Fair, Trucks, Tractors and Trolleys and the Wexford Trolley Station Grand Opening. These events, coupled with our daily admission, welcomed a great number of visitors through our doors. Because of this, we can continue to educate people on the trolley era and the importance of preserving this part of our history.

Trolleys have been a part of many major cities throughout the US and all throughout the world. This history unites all of us and that's why we are proud to be a part of Western Pennsylvania's heritage. As the saying goes, history repeats itself and we want you to feel that during your visits. For instance, one of our largest events each summer is our Park 'N' Ride service to the Washington County Fair. While this service benefits fair goers, it's also a great way to relive a pastime. Trolleys have been shuttling guests to the fair going back to 1913. Granted, the trip you take during our Park'N'Ride event is not the same as the one you would have been making 103 years ago, but it's still a fantastic representation of the experience. The Washington County area had a lot of rainy days during the fair this year, but that didn't stop our trolleys from providing passengers a glimpse of history and a comfortable ride to the fairgrounds.

As the Washington County Fair wrapped up, the museum began getting ready for its annual Trucks, Tractors and Trolleys event. This year's Trucks, Tractors and Trolleys was held on the 15th Anniversary of the tragic events that took place on September 11, 2001. In honor of those who lost their lives that fateful day, Pennsylvania Trolley Museum held

of a number of trips they have run recently and were submitted to the Washington County Community Foundation's WCCF Gives event so they could be matched by WCCF. We thank Port Authority of Allegheny County and FPT for their continued support!

We appreciate the continued support we get from our members and volunteers. Exciting plans are underway for the future growth of the Museum and we would be happy to welcome you to be a part of it! Please contact me or Lynne Thompson for more details. I wish you and your family all the best this

By: Madelon Cline, Visitor Services Manager



Flag Raising at 9/11 ceremony.

Photo by Bruce Wells

a Flag Raising Ceremony. The ceremony was held with the assistance of the American Legion Post 302, officers from Chartiers Township Police, and firefighters from Chartiers Volunteer Fire Company No.1. Larry Lovejoy, of the Pennsylvania Trolley Museum, sang the National Anthem. There were also individuals from the WWII Encampment 28th Division 1/110th RCT, K Company. Once again, this event allowed guests to view a piece of America's past with trucks from the past and some that look as though they were from the future, such as the Terra Drilling Truck. A majority of the trucks that participated came from the Tri-State Antique Truck Club. The tractors were brought by Washington & Greene County Antique Tractor Association. Visitors got to get up close to these vehicles and ride on the trolleys. Children participated in the games at Electric Park. As a transportation themed event, this was a great way to show our historic trolleys!

While getting the opportunity to ride on these beautifully restored trolleys, it can be easy to forget about the other components of the trolley era. A prime example of this would be the trolley stations and shelters that can be found along the trolley line. We here at the Pennsylvania Trolley Museum aim to make every part of the trolley era memora-



Another successful trucks tractors and trolleys event.

Photo by Bruce Wells

ble, starting with the newly refurbished Wexford Trolley Station. This station officially opened its doors to visitors on September 30, 2016. The grand opening was attended by many individuals from the community. This included family members of the late Trudy Brooker Davis who donated the station to the museum. A formal ribbon cutting was held and a lunch followed the event. During the first weekend of October, visitors were welcomed to tour the Wexford Trolley Station. This great piece of history from the trolley era is now located outside our Trib Total Media Trolley Display Building.

The Wexford Trolley Station grand opening being the last event for summer, we now look forward

Education update-Wexford Station

in Trolley Fare. This gift from the Brooker family heirs has been a labor of love. The September 30 opening event was quite a success and very well attended. We are happy to be the custodians of this 1908 structure and we look forward to preserving it for future generations.

A final part of this project involved the preparation and installation of the station's exhibit, which was developed by Ed Lybarger and me, largely from material in the museum's extensive archive. One of the major resources we have relating to the Harmony Route is a grouping of framed images collected by the late John Makar, a longtime PTM member. When John became ill, he directed that this material come to PTM, and we included a significant number of them to provide interpretation of the station's trolley days. Other material came from the owners of the deli businesses that operated in the station, such as Amy Weintraub Atkinson and Paul Mitchell, and from Bill Fronczek, PTM's resident historian on the Harmony Route and Butler Short Line. The images on the wall consist of photographs, postcards, advertisements and articles, as well as a map.

to our fall and winter events. With that known, it is always nice to look back over our summer and see what our visitors enjoyed. We are always looking for feedback on your visitor experience and would love to hear what you have to say about our 2016 season thus far. Have an idea for an event that you would love the Pennsylvania Trolley Museum to host or a vendor you would highly recommend? Please feel free to email me at vsm@pa-trolley.org.

It is our hope that you continue to enjoy visiting our museum, whether it's once a year or multiple times in a season. If you want to stay up-to-date on what's happening here or know someone who would be interested, stop in the museum store and become a member today! While there, check out some of the great seasonal merchandise we have for people of all ages. Our 2017 Calendar is now on sale and ready to adorn your walls. Those interested in ordering items from our gift-shop may call-in their orders at (724) 228-9256 or submit their order through the mail using one of our store order forms!

We hope to see you for many more visits and don't forget, Santa is due for a visit during our Santa Trolley, November 25-27, December 3-4, 10-11 and 17-18. Tickets are on sale now at Showclix or by visiting our website at www.patrolley.org.

The Wexford Station has opened at the museum! Many of you have been following the progress

By Edward H. Lybarger & Lynne Thompson

The exhibit encompasses artifacts such as a vintage phone and potbelly stove. In addition to the images on the station's walls, two video screens show many more for which there was not enough physical room. One includes brochures, tickets and other fare instruments, timetables and freight receipts for material handled through Wexford Station. The other documents the move and installation at PTM of the station.



Barrie and Jim working on the benches.

Photo by Scott R. Becker

There are many volunteers that deserve credit and praise for helping to make this exhibit possible. Special thanks go to Art Ellis and Phyllis Smal for readying many of the framed images and to Jeff Coyne for hanging many of the images and artifacts. Thanks also to Bernie Orient and Katie Imler for their work in installing the stove, which is such a great addition to the exhibit space. John Habak, Fred Cooley and Bob Jordan are responsible for the installation of the exhibit lighting and vintage style fixtures. Jim Herron and Barrie Baker are the dedicated volunteers that restored the mahogany benches from the Pittsburgh & Lake Erie Railroad station on Pittsburgh's South Side. Likewise, thanks go to Bruce Wells for reproducing and mounting the station sign. Additional help was provided by a number of the archives volunteers including Scott Ambrose, Ken Leonardi and Chuck King. Through the exhibits, visitors can capture the flavor



Ed Lybarger, Scott Ambrose and Jeff Coyne were among the volunteers hanging exhibits on the walls.

Photo by Lynne Thompson

of the trolley era as well as the adaptive re-use of the building in later years.

Rail service returned to the Red Line on Sunday, September 25, as the six-month construction

Pittsburgh Points

By Chris Walker

project (see last issue of TF) came to a close. On Friday, September 23, a small ceremony was held at the Fallowfield station to commemorate the return of the LRVs to Broadway. Various local politicians and the media were on hand to celebrate the conclusion of the major reconstruction project, which took the center of the Red Line out of commission for the entire summer. Residents and passengers alike were happy to see the demise of the orange barrels and the resumption of rail traffic.

Of course, no thoroughfare in Pittsburgh seems to last in a “work zone-free” state for very long, and the T was no exception this year. Just one week after the cones came down in Beechview, they went up at Station Square, as the Port Authority and their



Port Authority personnel at South Hills Junction 9-10-16.

Photo by Scott R. Becker

contractor (Michael Facciano – the same folks who completed the Beechview job) set up shop to replace the rail in the sharp curve leading into the transit tunnel.

For those unfamiliar with the area, upon exiting the north portal of the Mount Washington Tunnel, the rail line makes a very sharp right turn to enter Station Square station the ramp to the Panhandle Bridge. This section of rail takes quite a beating, due in no small part to the severity of the curve and level of traffic that routinely sequels around it (though not quite as loudly as the former PCC fleet did, perhaps).

As the curve is located at a key point in the rail system, at the edge of the entrance to Downtown, a shut-down in this area has major implications on transit traffic, both steel wheeled and rubber-tired (don't forget, nine Port Authority bus routes, along with our regional carrier friends at Mid Mon Valley Transit Authority use the tunnel, too).

Thus, for a three-week period, all inbound traffic (both bus and rail) was diverted “over the hill,” operating via Allentown. Outbound bus traffic detoured via the Wabash tunnel to State Route 51, while outbound rail traffic used the transit tunnel (one track was kept open throughout the project so outbound trains could use the tunnel). A single car shuttle LRV ping-ponged back and forth between the CBD and Station Square, providing a connection for inbound passengers.

Completing our orange tour this edition (after so much construction), a new hue is appearing on the trains. Port Authority is in the process of replacing

the destination signs in the LRVs, and the familiar green screens are going orange. The new signs are connected with the project to bring real-time GPS tracking information to customers, similar to the program that's been in progress on the bus side of

Philadelphia Notes

for essential work reopening Monday morning, July 19th. This closure replaced the annual trolley tunnel blitz that was to have occurred from July 8 at 10:00 p.m. through 4:00 a.m. Monday, July 18. Due to problems with the Silverliner V trucks, the entire fleet was removed from service during the July 4 holiday weekend. As one alternative to the reduced commuter rail service, it was reported that Subway-Surface trolley lines would add extra cars with morning and afternoon rush hour schedules extended to begin earlier and end later but this never happened. Weekend trolley service was diverted to 40th & Market Streets where passengers could transfer between trolleys and the Market-Frankford Line for service to or from Center City. As the rail situation improved, SEPTA closed the tunnel on weeknights for the weeks of August 15-19 and August 22-26 between 8 p.m. and 4:30 a.m. and on the weekends of August 12-15, August 19-22 and August 26 between 8 p.m. Friday and 4:30 a.m. Monday. Rail was replaced on the westbound side of the tunnel between 19th & 22nd Streets and about 1,500 feet of wood protection board was installed over the eastbound track between 22nd and 19th Street. Other work that was done included signal and wire improvements, graffiti removal, tile repair, painting, drain clearing, cleaning, replacing lights and testing emergency generators.

On Friday, July 1, an inspector checking stored



SEPTA commuter trains suffered considerable service restraints with the failures on new Silverliner V cars.

Photo by Bill Monaghan

the world for several years now. The real-time program for the rails is expected to launch publicly next year, bringing your trolley ride to an app near you.

Starting at 10 p.m. Friday, July 16, the sub-surface trolley tunnel closed for the weekend

By George Gula

equipment in Powelton Yard noticed that Silverliner V car 812 was leaning. After unsuccessfully attempting to right the car, 812 was moved to Overbrook Shop for a closer inspection, which revealed a completely fractured 350-pound equalizer bar on one truck (Equalizer bars, used only on passenger cars, are placed on each side of the truck to keep it level). An inspection of 100 similar cars at Overbrook led to the discovery of numerous fatigue cracks in the equalizer beams in 95 cars with the bars of only 5 cars intact. Immediately, a speed restriction was issued for all cars and they were gradually pulled from service over a 24-hour period.

By Sunday, the entire 120-car group of Silverliner V cars, about one-third of the Regional Rail fleet, were completely sidelined. At a 2 p.m. news conference SEPTA General Manager Knueppel revealed grim news: "Given the high number of cracked equalizer beams, even an interim fix will take considerable time. It is likely that car shortages will persist on the railroad at least through July and August". Assuring the public the remaining fleet could handle the July 4 holiday weekend service, he warned that Tuesday would be rough and stated that the authority intended to operate 12 of the 13 Regional Rail lines on the modified Saturday schedule normally utilized in weather emergencies. Rush hour service would operate at 30-minute intervals on most lines and some early morning trains would be added. Discontinued was the lightly used Bala-Cynwyd line. Shuttle buses would serve its stations, freeing up rail cars for service elsewhere. With 120 cars or 13,000 seats out of service, fewer



Red Arrow division overhead line maintenance car 0862 at Drexelbrook Junction in Upper Darby PA in July.

Photo by Bill Monaghan

trains with fewer cars would carry double the usual number of riders, making boarding at stations close to Center City difficult. To provide alternatives, peak-hour service was increased on the light rail lines, and the Market-Frankford Line, Broad Street Line, Norristown High Speed Line, and Media-Sharon Hill Lines. To reduce the pressure on the already-crowded Market-Frankford Line, the trolley tunnel repair blitz scheduled for July 8 to 18 was indefinitely postponed.

SEPTA had paid \$274 million for the cars in 2010, but delivery was delayed until 2012, with the last car entering service in February 2013. With the cars still under warranty, Korean builder Hyundai Rotem USA and SEPTA engineers began intense research to develop an interim fix and a new design for the trucks. The trucks on the Hyundai Rotem Silverliner Vs were built using a new process of welding equalizer bars to the trucks, but stresses along the weld led to metal fatigue and ultimately fracture. The discovery of the flaw was fortunate because the cars were so new that the customary inspections performed on components as they age had not yet begun. Kneuppel intended to maintain as much rail service as possible by utilizing the 30 to 40 trucks under the cars that still had no cracks coupled with an enhanced inspection routine. The cause was eventually determined to be a flawed weld that attached a plate to a key weight-bearing beam that made the trucks impossible to repair. The weld had been designed and executed by HiCorp., a Zellenople, Pa. company that had been subcontracted by Hyundai Rotem.

On Tuesday July 5, the first day after the holiday, the evening commute was chaos. At Jefferson Station around 5:30 p.m., riders were crammed shoulder-to-shoulder into the rail cars' vestibules, and SEPTA police were blocking riders from board-



Trains were borrowed from New Jersey Transit to make up for the shortage due to Silverliner V folders. Photo by Bill Monaghan

ing. As night fell, some riders were still making their way home, an hour to nearly five hours after finishing work. Amtrak began making four more stops at Ardmore - three inbound and one outbound - and added an extra car to six of the eight Keystone trains running between New York and Harrisburg while SEPTA began talks with NJT, Amtrak and the MTA in New York to possibly borrow equipment. As more people returned to work from the long weekend on Wednesday, trains were even more crowded. Many trains running before 7 a.m. were packed, forced to pass up some stations, and ran late. By Monday, July 11, SEPTA added 1,700 seats by leasing two locomotives and five coaches from Amtrak at \$16,375 per week, one locomotive and eight coaches from New Jersey Transit at \$15,570 per week and five coaches from MARC (Maryland Area Regional Transit) at \$19,462 per week. Five additional MARC coaches were leased.

On Friday July 15, SEPTA announced a new interim weekday schedule for Regional Rail lines, to be in place until at least Labor Day, starting Monday. The Trenton, Norristown/Manayunk, Media/Elwyn, Lansdale/Doylestown, West Trenton, Chestnut Hill East, Wilmington/Newark, and Paoli/Thorndale lines would each receive an extra train that running earlier than the normal Saturday schedule, and additional trains would be added to the a.m. and p.m. travel periods. Amtrak would also increase the capacity of its Keystone trains, using the Paoli/Thorndale line. The remaining four Regional Rail lines (Airport, Chestnut Hill West, Fox Chase, and Warminster) would continue to operate on the Saturday schedule during the week, with no additional enhancements or adjustments and the Cynwyd Line would use shuttle buses, stopping at Cynwyd, Bala, Wynnefield, and 30th Street Stations. Later, after ten additional cars were leased from MARC the third week of July, schedules were again upgraded on some of SEPTA's busiest lines -- Glenside Combined, Lansdale/Doylestown, Manayunk/Norristown, Paoli/Thorndale and Warminster. Schedules would continue to be tweaked throughout the summer.

By late July, officials had identified faulty welds in the suspension system involving a load-bearing beam as the source of the problem. These welds connected plates, intended to create more surface area where the beams rest on the cars' wheel bearings, to the equalizer beams, which then transferred the weight of the rail cars to the axles. Hyundai Rotem blamed the bad welding job on subcontractors and began a two-to-six week test of two kinds of equalizer beams, one with a differently welded plate and

another made of forged steel, to determine which was the better replacement. The company also began ordering replacement beams for all cars in both variations so by the end of the test period, it could provide whichever beams SEPTA preferred. Engineers performed extensive lab tests on the new beams to simulate actual conditions of a fully loaded car and fatigue tests to replicate the stresses the beam would encounter over 15 years of use. SEPTA's General Manager announced in early August that about 10 of the 120 pulled rail cars would return to service each week from late August through mid-November and that the Regional Rail schedules were expected to return to normal by October.

In mid-July, the 5,100-member Transport Workers Union Local 234 opened negotiations on their contract, which expires October 31, with wages, pension reform and health care as the major issues. Willie Brown, TWU Local 234 President and Union negotiating team leader, said that during the last contract, health care and the pension issues were deferred and union officials plan to address them during the upcoming sessions. Brown was quoted saying "Management was pushing us to pay more for health care, but we knew there had to be a better solution. With regard to the pension, there are managers who pay less for their pensions than union members but they receive greater monthly retirement benefits. This problem must be fixed in this round of negotiations. We need a system that is secure, fully funded and provides a fair return for the money our members contribute to the pension fund." Brown threatened union action if things were not amicable.

On a brighter note, on Thursday July 28, SEPTA provided a glimpse of the future by parking a Proterra Catalyst battery-powered electric bus at midday on Market Street in front of its Center City headquarters. Twenty-Five of these vehicles will enter service in 2017 on two South Philadelphia crosstown bus routes, Route 29 - Tasker and Morris



Silverliner V trains like this one were sidelined during the summer to repair cracked truck frames. Photo by Bill Monaghan

Streets and Route 79 - Snyder Avenue. Both routes were formerly served by trackless trolleys. The vehicles are designed to charge quickly for use in round-the-clock service. Proterra states that they can travel 50 miles in light traffic, or 30 miles in city conditions, before requiring a recharge. Their \$2,585,075 cost includes charging stations needed to recharge the bus batteries at each end of the lines and at Southern Depot. In regular service, batteries, which fully recharge in five minutes, are connected between an overhead cable and a metal contact box mounted on the roof of the bus. The vehicles were purchased through a Federal Transit Administration Low or No Emission Vehicle Deployment Grant, which covered the price difference between the more expensive battery-electric buses and the diesel-electric hybrids currently being manufactured. This particular FTA grant allowed SEPTA to specify a partner for its vehicle supply and procurement. The agency began talks in 2014 with PECO Energy about obtaining the electric buses from Proterra, a South Carolina-based company in which PECO parent Exelon holds an investment stake.

We begin where we left off last issue with 4398 in the shop for routine maintenance as it approached the 500 mile service interval. Of note were two clere-

Trolley Maintenance

By Bernie Orient

story windows with loose hinge screws. Simple replacement with larger screws was not an option here as it was already done before so it was necessary to drill through the underlying steel frame without penetrating the inner wood finish. Of course brass screws were not fond of threading through the steel so the repair was first steel screws, then brass. One other item worth mentioning is that two lock nuts had worked loose from a brake hanger. Apparently they were not locked as well as they could have been. Another item of interest was a head-

light failure, not bulb-related but with a failure of a small micro-switch that is triggered by the larger end-changing knife switch. Bob Jordan replaced the switch on-the-fly so to speak.

Next in line was open car 1758. No surprises here, all that was needed was controller service plus some tightening on several motor torque springs. These springs cushion the torque of the traction motors. The side of the motor opposite the gear and axle is bolted to a heavy bar, sometimes referred to as a spring plank. This is isolated from the truck

frame by two coil springs top and bottom to cushion in either motor direction. Not every car uses springs but they require occasional adjustment on 1758.

Another cliffhanger from the last newsletter was the fate of PST 14 from a June 26 breakdown. The car had just started into Arden loop when one person heard a pop, another knew the car lost power, and a third saw smoke and sparks from a truck. The immediate response was to transfer the passengers and Kate did the move from Arden to the Founders Car House. At the next opportunity we shifted 14 to the rear of the car house to free up needed cars and applied power once clear of the building and still coupled to the GE Loco. No noise or smoke but 14 took power and definitely wanted to move the loco. On July 2 we tried to run the car on its own power to the TDB pit. Long cars like 14 won't completely fit over our track 14 pit with M283 jacked up in the center position so the TDB was the logical choice, or so we thought. But 14 had other plans as it would not advance past switching point so we shelved the move until July 5. Bruce, Kevin and Laura did the move from Richfol to the East Campus while Kate moved PST 66 the opposite direction in order to provide a parking space for M210 at the TDB. After a thorough check the only problem found was a line switch trip. On this particular (series of) car a tripped line switch still permits switching operation, the cure was, embarrassingly, to flip the "line switch reset" gang switch. Although the fix didn't quite fit the symptoms the car ran well right into County Fair with a failure on August 20 with high acceleration noted. So Kate and Fred Cooley did the towed the car to the TDB pit only to find that pit too small (with M551 parked to the back) to access the #2 end truck where Jeff and Justin surmised the smoking gun was hidden. On August 28 a musician friend of mine, Ryan, helped me jack up the car body as much as possible as the king pin retainer was not accessible. Sure enough I found a burned through wire that fed into the motor lead block and I was skinny enough to crawl in and do a temporary fix with a split nut and tape and on August 31 we moved 14 back to the main shop, removed king pin retainer and jacked the car further and did a more proper repair. A geometry exercise revealed that the wire and the one beside it had enough slack to negotiate a continuous track curve of 30 feet but judging from a burned off cotter pin loop the wire in question had snagged there. We added a couple of inches to a new wire, replaced some brake rigging rollers and did some lubrication which was due on the truck that was accessible.

While M210 was temporarily displaced from the

TDB we brought it into the main shop for annual service. Most items were in better condition than expected; however, I did spot some brush holders in #3 traction motor in need of attention soon. An interesting aside from the servicing was that we found a failing controller finger in one of the K controllers for which we had no good spares. We located a company that makes exact replacements for these as we



Bernie, Katie and Paul work on the build up of resistor grid boxes for M283. Photo by Scott R. Becker

obtained a sample and it fit perfectly.

On July 31 Bob Jordan took PST 66 on a system-wide tour to monitor motor lead behavior in various turns. The car had participated in the June 25 parade but a cut-back version so that it did not have to negotiate any loops. We had a lead failure some years back and I didn't want any repeat episodes. Sure enough the leads didn't quite track to our liking so I was able to do some remedial work before the Fair. This included fabricating new wood block holders that allowed the leads to curve quicker, an extra block to ensure they bend sharper and raising the block so they have more swivel room. The car ran marginally well for the fair although it needed



Rebuilt tread brake beams for Pittsburgh Railways 1138.

Photo by Bruce P. Wells

two brake adjustments as the new shoes on the rebuilt truck went through their seating sessions. It is hoped we can complete the motor lead adjustment before Santa but the Fair added complications in another area as we will see.

Other pre-fair activities included servicing of N832 and 4004. PTC 2711 had been experiencing minor “control” issues with unexplained and random lurching. On July 29 we had it in the shop and replaced some ribbon resistors that appeared to be shorted. The spider or wheel assembly seemed to bind in roughly the center so we rotated the wheels somewhat guessing they had become elliptical (this actually helped!). All other normal service items were accomplished and the car ran adequately until the second night of Fair when it was pulled for rapid acceleration. Justin and Jeff worked on it after we towed into the main shop and they adjusted some contacts within the limit relay that affected the tickler coil (whose purpose is to have the relay vibrate rather than stick on and off.) Things were swell for a short time, maybe 48 hours then more problems and another short tow job. An additional limit relay issue was spotted that prevented the drum from returning to the zero position. Two more periods of adjustments plus a pilot motor change when all else fails got the car back on the road by mid September.

The 2016 Fair brought a dreaded road crossing collision damaging P&WCT 78 which has been out of service on track 22 ever since. There were no serious injuries but the out of service car has ripple ef-

fects on trolley events and shop work flow as we will see with the M283 and 66 projects. During a brief period during the fair we had 4 cars out of service but were able to get two of them back on the road for the next evening shift.

A glimmer of hope is shining from both ends of PCC 1138 as we have two of the four tread brake shafts completed and installed. As you may recall three of the shafts were so worn at the bearing seats that remedial work was needed to fit the bearings. Our lathe was way too small for the job however during our visits to Lyons Industries we noticed jumbo lathes in their shop so we asked them to take a swing at the job. The first one (and the worst of the lot) came back perfect and the other two should be back soon.

Around mid September Maria and I took a two week trip away and Katie I filled in for me. She had her hands full with light bulb failures in three cars and a strange case of a motor lead bracket coming loose from 4398.

I have written a second article on the work progress on M283 crane car and you will see how those activities nicely filled in the obvious gaps in the otherwise mundane maintenance melee. By the way, our prominent actors have been Kate Imler, Paul Falcioni., Armand Latour, Bob Powischill., Fred Cooley., Ray Hatfield, and the occasional Dan and Larry.

By July we found ourselves working way over our pay grades in a few areas, one being replacing

Crane Car M283 update

the wiring in the crane tub turret and another how best to assemble the resistor grid boxes. A third area, literally over our heads, was the cab roof.

The resistors were an unknown quantity to begin with so much of the build-up process was uncharted roads. As previously discussed, once we had enough grids passing a visual and electrical test, each (120 total) had to be sandblasted and painted to ward off additional corrosion. The design configuration maximizes surface area to achieve heat rejection while minimizing cross-section to impede current flow. Average sandblasting time was 20 minutes per grid and the ambient temperature of the shop, although considerably cooler indoors than out, caused the air compressor to heat up within an hour of steady blasting. Therefore this phase was restricted to two- hour sessions or 6 grids. Dew point was an issue for the paint so that was accomplished when the relative humidity was 50% or less. Once the assembly phase began we needed to predict how many mica washers to put at which areas

By Bernie Orient & Larry Lovejoy

to maximize the air gap between grids but maintain healthy gaps at the end plates. The actual assembly did not begin until early September. The first two we built up had “conductivity” issues that will be

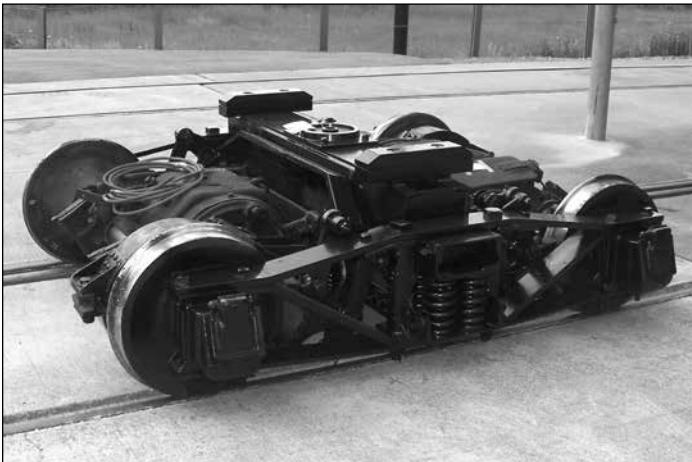


Art Rizzino discusses winding of yarn spools for M283 with Jack Sutherland. Photo by Bruce Wells



Bernie Orient and Larry Lovejoy unloading the rebuilt trucks for M283 and a close up of the finished product.

Photos by Scott R. Becker



covered in a subsequent installment as the rectification of the situation lapsed into October.

Another “sticky” area (both figuratively and literally) was the wiring replacement to the tub section. All of the crane movements are by individual motors but powered from the same feed wire. However the car can be operated from the tub which required another 10 wires. All of these connections terminated in a vertical column of spring loaded fingers and copper rings. This permits the crane to spin 360 degrees while under power. Naturally all parts were covered with copious amounts of accumulated grease and dirt of which only a portion was removable. Add to that the access holes in the outer shell to get inside were in no way generous. I eventually purchased a stubby nut driver and removed the #10 nuts mainly by feel. The old wiring loom had 13 conductors, more than needed, but as it was virtually impossible to determine which connections were spare or unused I had Kate Imler assemble a similar loom. Cleverly I had attached a pull rope to the old looms before they were tugged through at least two 90-degree bends to fishing the new one back in was not a large chore. The individual connections WERE a large chore as I had to drape myself over

one of the crane motors to do much of the work again mainly by feel. This I had to limit to 20 minute sessions to ensure proper stowage of stomach contents. Once I got this far I used my 24-volt door buzzer to ring out each connection at the master controller and reverser to a junction near the air compressor.

The rebuilt trucks arrived from Lyons on July 22 and were off loaded at the TDB yard. None of the bearing boxes had any packing to dispense lubricant so rolling them around was not recommended. This condition precluded any meaningful prior testing. This also meant we had to obtain a sizable quantity of untreated wool yarn or “waste” and wind a large number of continuous loops to fill the boxes. This started with much entanglement until Kate hit on the idea of first winding softball size spheres of yarn rather than attempting to unwind the larger skeins in the bale. That way one could simply move the ball through the endless loops in the skein. Two nails in a 2 x 4 gave us the loop radius and I estimated we use 300 feet of yarn in each loop. Additionally the loops had to be soaked in oil for a day then drained for a day before we could install them. I fabricated an inclined drain pan to accommodate 10 loops at once. We had journal pads for the journal boxes, fortunately, but the support bearing boxes took lots of loops and the armature bearings not so much. After all of this preparation the actual packing went smoothly, although uncomfortably warm in the blazing August sun. An added by-product of this adventure is lots of surplus new waste packing material.

The plan was then to marshal the trucks into the main shop in the proper order for installation. The motor leads would need trimmed and the jack-knife connectors installed plus the brake rod connections verified. However by the time we accomplished the packing the damaged P&WCT 78 had occupied shop track 22. Fortunately the Unity Caboose had departed to Rivers of Steel making the TDB track 35 a viable indoor storage location.

A somewhat distasteful portion of the job has been the under-the-deck cleaning. Extraction of the old trucks meant that a lot of this area was visible for the first time in decades. As one might imagine there was endless amounts of road dirt and corrosion to remove. The exposed surfaces have been treated with rust converter or, where it could be better cleaned, prime painted and then painted. This part of the campaign is on-going.

Fred Cooley took care of much of the wiring connections to the reverser and the HL boxes. He also rang out all of the low-current connections from the many interlocks and completed other wiring junc-

tures. Armand Latour manufactured a new wooden choke coil form at his home and he and Kate wound the heavy cable on it. This will be mounted on the roof by the pole base and its purpose is to discourage AC pulses, like lightning, from entering the car's electrical system.

The roof came to be another whole chapter in peripheral repairs. The roof was updated at the time of the total rebuild of the cab and was comprised of a plywood inner layer, a sheet steel outer layer and a rubber membrane covering all. Somewhere along the line the moniker "ply-metal" was given to the composite. We've found the ply-metal is not a good actor with high voltage accessories, specifically the pole hook and the car would be better without it. I moved my scaffolding in in late August and Larry removed the rubber matting that was the weatherproofing. The condition of the exposed met-



Jim Ott restores cab heaters for Crane Car.

Photo by Scott R. Becker

Power & Signals Report

By R. Scott Davis

The Power & Signal Dept. needs to be retitled the Power & Signal Moving and Storage, as it seems that's all we do lately. With the completion of the shelving in the Wexford Station basement, electrical parts for building maintenance stored in the shop and along with other miscellaneous electrical components stored at other cubby holes found through out the property made their way to these shelves. Stay tuned for more exciting installments like, "sorting fuses."

Power & Signal Department parts have for years been stored in a container at the rear of the Trolley Display Building. With this area cleared of AC hardware, the next step was to empty the signal parts from our refrigerated box car begin to flow in at a slow pace. First to be moved are small parts like track resistors and transformers as well as Nachod and Cheatham electric track switch repair parts. Crates have been created by adding sides to pallets,

al sheathing ranged from serviceable to totally absent, the latter in locations where the rubber was either penetrated or discontinuous. To no surprise the underlying plywood was compromised around the rust holes and the heavy wood members around the perimeter had ugly areas. In mid September Kate assembled an army of sorts and removed the entire roof structure. In reviewing the debris pile on the crane deck I surmised it died hard and was not in as good a shape as it first appeared. A total reconstruction of the roof is in progress. It will be topped off by a single sheet of rubber donated by Tennis Roofing. The old roofing, probably a flooring product, had two seams which were the source of much of the decay.

Other less observable items that we attended to were a new floor hatch in the cab, a rebuilt and reupholstered seat for the tub and a cab heater rebuild. M283 had two heaters in the cab plus three in the tub. Our present goal is to have one functional heater in the cab.

Volunteer hours for July through September on the project were 400. I'm forecasting another 500 hours will be needed to get M283 back on the road again so there is still limited opportunity to get your hat in the ring. Last quarter's participants not specifically mentioned in the article include Dan Bower, Larry Lovejoy, Doug Kirkpatrick Jr and Sr and their friend John, Paul Falcioni, Bill Fronczek, Art Rizzino, Ray Hatfield, Brett Freithaler, Bob Powischill and his nephew Zach.

for storage of delicate track relays in the APB.

During County Fair the signal at Arden Loop kept showing a red aspect due to low supply voltage from West Penn Power. To try to remedy the situation, the supply wiring on the poles was increased from #12 to #6 gauge wire, reducing the voltage losses.

Finally, the crossbucks and warning signs at the Main Street crossing have been replaced with modern up to standard signage.

It like to thank the stalwarts who made this progress possible: Jeff King, Art Schwartz, Laura Wells, Kevin Zebley, and Scott Davis.

Restoration Shop Report

By Bruce P. Wells

The restoration report starts off as usual with the West Penn 832 project leading the way. I don't know if I should put this in print but as it moved into its sixth year of on-site work in August I think we may see light at the end of the tunnel that is not a train coming in the other direction! We are thinking that it will come to a conclusion sometime in the fall of 2017, but keep that under your hat ;-).



Rebuilt seat frames, new sandbox seats, reupholstered cushions new flooring and beautifully finished woodwork make are all pieces in the first class restoration of West Penn 832.

In recent months Jim Ott, John Habak and Jack Sutherland made great progress with the building up and installation of the walk-over seats. A "full court press" was made to get all the parts together, assemble each seat with all parts properly painted, position each frame correctly and then attach the finished products at the heater and the floor. Jack put a lot of time into having new reproduction castings made at Franklin Foundry to replace broken or missing pieces. We know that 832 had its seating arrangement changed at Connellsville to allow more aisle space at the ends of the car. In conjunction with this change four walkover seats were removed from the car. We are fortunate that additional seats were acquired with the car in 1952 and that one seat was acquired with West Penn 739, which had one end equipped with these seats. We theorize that 800 car seat were used to replace parlor car seats but have no documentation

John Habak and Jim Ott finalized the wiring for the 12v power supply, and building the headlight resistor box. Jim Herron and Barrie Baker finished up work for the Wexford Station and began concentrating on the mahogany trim, including the window sills, as well as sill and frieze panel caps.

I have been concentrating on the fabrication of

new roof marker lights and aluminum panels to fit the irregular space between the door engine box and the curved platform ceiling. Part of the plan for marker lights is to fabricate enough parts so that lights can be applied to car 739.

As time permits, when he is not operating the car for the public, Tim Moffat continues tracing out and then securing the wiring under Pittsburgh PCC 1138. Bernie reported regarding repairs to the truck brake rigging.

Down at the TDB Bill Fronczek and Fred Cooley are hard at work tracing out and then renewing the wiring inside the private car Toledo. In addition Bill is having the ornate brass light fixtures and hardware restored at a shop in Pittsburgh's Strip District and has reinstalled many of the items in the Car. He has also restored a beautiful arc headlight that came with the car which is now hanging on the east end of the car.

Another project going on behind the scenes at the



Bill Fronczek and Fred Cooley working on the wiring inside the private car Toledo. Photo by Bruce Wells



Toledo sports restored headlight-2016-08-27 13.04.15.jpg

Photo by Bruce Wells

Trolley Display Building is being carried out by Jeff King, Chris Walker and Justin Skrbin. It involves the activation of the fluorescent lighting onboard Market-Frankford subway car 606. This will make it possible to open 606 and have displays relating to rapid transit cars inside for visitors to see as part of the extended tour in 2017, when tours of the TDB become an extra cost option and car barn tours move back to the Founders' Building.



Testing lights on 606.

Photo by Jeff King?

Meanwhile advertising cards have been installed inside Pittsburgh Railways 4145. We had a problem placing standard 11" tall advertisements was because cherry wood trim that is supposed to be spaced for this purpose was too big. When placing ads in 2227 a couple years ago I found Cincinnati Street Railways solution was to make a folded piece of sheetmetal and apply it along the bottom edge at the proper spacing. With the assistance of our friends at Accutrex Corporation in Canonsburg metal strips were fabricated, drilled and powder coated (painted) to match those found in 2227. Applying them was done with wood screws and the result can be seen in the accompanying photo.

During County Fair this year an over anxious youth drove his truck across the path of P&WCT 78 at our Main Street. While his truck was totaled the driver suffered no injuries while the operator of 78 was cut on the finger by broken glass. Damage to 78



Vintage reproduction advertisements produced in house are now on display inside Pittsburgh Railways 4145.

Photo by Bruce Wells

is repairable and that got underway in September after evaluation by the his insurance company. Late in September we contracted with Ron Sikorski to do the body repairs. Ron is the craftsman responsible for the paint job applied to Red Arrow 66 in 2015. The biggest need is to fabricate a replacement headlight for the car. The plan is to re-purpose a portable hang on headlight to become a dash mounted headlight of the style originally used on the car. When restored in the 1980s we applied city-suburban car headlights that Bob Brown told me came from New Castle PA Birney cars in a junk yard. Our hope is to return the aspect of the car to "as Built."



Original headlights for car 78 as found on car 80 at the Electric City Trolley Museum in Scranton

Photo by Bruce Wells



Mission Statement

The Mission of the Pennsylvania Trolley Museum is to communicate the story of Pennsylvania's Trolley Era to a diverse audience through the preservation, interpretation and use of its collection of electric railway and railroad equipment, associated artifacts and photo / document archives, and to ensure that visitors have an enjoyable and rewarding educational experience.