OPPOSITE: A set of Silverliner Vs prepares to depart the upper level of Philadelphia's 30th Street Station for Trenton on August 3, 2018.

ABOVE: Blueliners and Silverliner IVs meet at Wayne Junction on November 17, 1985. STEVE BARRY PHOTO

LEFT: A set of Silverliner IVs approaches the trainshed of Reading Terminal as older Silverliners wait on the adjacent tracks on November 6, 1984. Reading Terminal would close for good that night. STEVE BARRY PHOTO

CENTER LEFT: The ex-Reading diesel equipment, painted into the new SEPTA image in the late 1970s, is laying over at Bethlehem, Pa., on August 29, 1979. In a cost-cutting move, all diesel service was discontinued in 1981. RODNEY MILLER PHOTO

BOTTOM LEFT: SEPTA's brief foray extending service from Bethlehem to Allentown lasted only a year. A set of Budd RDCs awaits passengers at the site of the old Lehigh Valley station in Allentown on August 15, 1978. RODNEY MILLER PHOTO

UNITING PHILADELPHIA'S RAIL SYSTEM

SEPTA at 40

PATRICK J. YOUGH/PHOTOS BY THE AUTHOR EXCEPT AS NOTED

PHILADELPHIA is served by a robust commuter rail system made up of 13 lines connecting 150 stations, creating the fifth busiest commuter operation in the U.S. While the former Pennsylvania and Reading lines, now operated by Southeastern Pennsylvania Transportation Authority (SEPTA), are celebrating their 40th year of direct operation, public support of regional passenger rail dates back almost 60 years. Over the decades, the system has experienced its own unique challenges.

On February 18, 1964, the Pennsylvania legislature authorized the formation of the SEPTA to manage public transportation in the five-county region surrounding Philadelphia. Prior to that, the city of Philadelphia created the Passenger Service Improvement Corporation (PSIC) to provide subsidies to PRR and Reading for operation of each road's branches to Chestnut Hill. In 1960, PSIC expanded subsidies on all commuter rail lines within the city limits. On September 8, 1961, the Southeastern Pennsylvania Transportation Compact (SEPACT) was formed by the city of Philadelphia and Montgomery, Bucks, and Chester counties to address regional transportation issues. On November 1, 1965, PSIC and SEPACT were merged into SEPTA.

SEPTA operates a diverse mix of commuter rail, rapid transit, light rail, trolley, bus, and electric bus service. The SEPTA service territory includes Philadelphia and surrounding counties, as well as Trenton and Ewing in Mercer County, N.J. SEPTA also provides commuter rail service to Claymont, Wilmington, and Newark, Del., under contract with the Delaware Department of Transportation. SEPTA provides connections with New Jersey Transit at Trenton, allowing for an economical alternative to Amtrak between New York and Philadelphia. While this article focuses on the Railroad Division, some of SEPTA's systemic problems are complicated by the fact that it provides several forms of transportation competing for the same passengers and capital funding, often within one or two blocks of each other in certain neighborhoods.

The 20th Century

Pennsylvania Railroad began electrification of the Philadelphia area commuter zone in late 1913 utilizing 11,0000-volt (11 kV), 25 Hz, single-phase a.c. power. The first route selected was between Paoli and Broad Street Station, a distance of 20 miles, with service starting on September 11, 1915. A new shop was built at Paoli to maintain the classic owl-eyed MP54 electric multiple-unit cars. Electrification was quickly extended to the Chestnut Hill branch (1918), West Chester via Media (1928), and Wilmington (1928). The Schuylkill Branch was electrified as far as Norristown in 1930.

On December 14, 1927, Reading announced a plan to electrify suburban service from Reading Terminal to Lansdale, Doylestown, Hatboro, and West Trenton. Reading contracted with Harlan & Hollingsworth to build the electric m.u. cars for the new suburban service opening on July 26, 1931. Additional routes were added in the decades that followed.

The classic heavyweights soldiered on through the postwar era, as the railroads had little incentive to invest in new equipment on a money-losing operation. The first new cars financed by PSIC were the Silverliner IIs in 1963, built by Budd Company in nearby Red Lion, Pa., for both PRR and Reading.

On February 1, 1968, Pennsylvania Railroad and New York Central merged to form the colossal Penn Central. A year later the former New Haven Railroad was forced into the mix. This gave PC control of the entire Northeast Corridor between Boston and Washington, D.C., along with responsibility for commuter operations in every major metropolitan area in the Northeast. Penn Central was doomed to fail from the beginning and on June 21, 1970, declared bankruptcy. Reading Company struggled on a little longer and filed for bankruptcy on November 23, 1971.

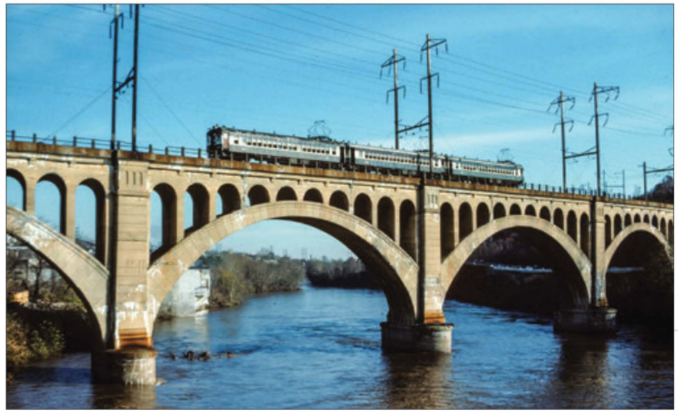
With the Northeastern rail network about to collapse, the government stepped in with passage of the Railroad Revitalization and Regulatory Reform Act of 1976, paving the way for formation of Consolidated Rail Corporation (Conrail). Along with Penn Central and Reading, other roads joined in. As part of the deal, the Northeast Corridor, including the line from Philadelphia to Harrisburg, was sold to Amtrak.

Under the Gunn

On September 1, 1979, David L. Gunn was hired as the new general manager and chief operations officer for SEPTA, leaving his job as director of operations for Boston's Massachusetts Bay Transportation Authority. Gunn is famous for his "state of good repair" management

ABOVE: SEPTA inherited legacy equipment purchased for the railroads to help improve service, like this former Reading Silverliner II (built in 1963) running on the R5 ducking under the High Speed Line at Norristown, Pa., on December 21, 1985. Rebuilt in 1989, all Silverliner IIs were retired in June 2012. RODNEY MILLER PHOTO

ABOVE RIGHT: During their final years of service, the ex-Reading Blueliners were used on several fan trips. Repainted from Reading blue and white, a matched set in SEPTA's scheme pauses at West Trenton during a Philadelphia Chapter NRHS fan trip on March 25, 1990. STEVE BARRY PHOTO



BELOW RIGHT: Another Blueliner fan trip, this one using a matched set of blue cars, poses on the ex-PRR viaduct over the Schuylkill River at Manayunk on November 17, 1985. STEVE BARRY PHOTO

OPPOSITE BELOW: AEM7 2307 passes under an N-5 car parked at the Norristown High Speed Line at the Norristown Transportation Center in April 1992. STEVE BARRY PHOTO

philosophy and while at SEPTA, he cut operating costs nearly 30 percent while rebuilding infrastructure.

As part of his cost-reduction strategy, on October 5, 1981, Gunn instituted the "Fox Chase Rapid Transit Line" service on the ex-Reading Newtown Branch between Fox Chase and Newtown utilizing Budd Rail Diesel Cars. Gunn billed this as an experiment to see if SEPTA could run the Regional Rail system on its own. Gunn also replaced the engineer and conductor with employees from SEPTA's bus division, who were paid much less than railway workers. Needless to say, the unions were not thrilled and protested the replacement of rail workers with bus drivers.

The next major change came when SEPTA discontinued all diesel-hauled trains to Bethlehem on July 1, 1981, and Reading and Newtown on July 31. For a brief period, shuttle trains operated between Pottstown and Norristown and between Quakertown and Lansdale. The last runs of the joint *Crusader/Wall Street* through service with NJ Transit between Philadelphia and Newark, N.J., operated on July 31. Pennsylvania Gov. Dick Thornburgh ordered PennDOT to eliminate the train service and cut funding to any service outside the original five-county charter area. Thornburgh later fired PennDOT Deputy Secretary Ed Tennyson for refusing to carry out his order. Today, U.S. 422 is a congested four-lane highway between Pottstown and Philadelphia, as is State Route 309 and the Northeast Extension of the Pennsylvania Turnpike between Philadelphia and Allentown. Both areas have had significant population growth since the SEPTA service ended, and would benefit immensely from having reliable commuter rail service to the city.

From Conrail to SEPTA

On August 13, 1981, President Ronald Reagan signed the Northeast Rail Service Act of 1981 (NERSA) into law, mandating that Conrail exit all contracted passenger operations by the end of 1982. By this time, decades of neglect were taking their toll on the basic infrastructure, including track, signals, bridges, stations, and the electrical propulsion and distribution networks. In Philadelphia — as well as New York and New Jersey — new or refurbished locomotives and coaches were provided through public funding, but addressed only some of the underlying issues of providing reliable service.

When NERSA was signed, the clock started ticking for SEPTA to find someone other than Conrail to operate its commuter trains. The bill included a provision creating the Northeast Commuter Services Corporation as a wholly owned subsidiary of Amtrak to operate commuter trains. SEPTA negotiated with both the new Amtrak subsidiary and Boston & Maine (which had taken over Boston's commuter rail in 1977 for MBTA). In the end, though, SEPTA chose to operate the trains on its own, but wanted the rail workers to become employees of the transit division at a reduced pay rate. Conrail employees in the Philadelphia area had to decide if they wanted to stay with Conrail in freight service, go to work for Amtrak, or go to SEPTA. January 1, 1983, came and went with no contract between the railroad workers and SEPTA, and the unions surprised everyone by going on strike on March 15. The strike had lasted 108 days, ending when the last union agreed to a deal with SEPTA. The resulting agreement maintained the employees' status as railway workers paying into Railroad Retirement, but at a pay rate lower than other commuter rail operators. Many engineers returned to Conrail, and SEPTA was forced to annul trains that summer due to a lack of crews.

On February 1, 1984, David Gunn left SEPTA for New York's Metropolitan Transportation Authority to oversee the rebuilding of the New York City subway.

The Center City Tunnel Project

In 1978, Philadelphia Mayor Frank L. Rizzo dusted off the 1958 proposal to connect the former PRR and Reading lines by building a tunnel east from Suburban Station and constructing a new below-grade station at Market East (now Jefferson Station) to bypass the elevated Reading Terminal. The Center City Commuter Connection would help draw riders to the new route being planned to link Center City (downtown Philadelphia) with Philadelphia International Airport located south of town. Students would also benefit, as the new University City station was built to serve both the University of Pennsylvania and Drexel University. November 6, 1984, was the final day of trains operating into Reading Terminal, ending 91 years of service. On November 10, 1984, the new Center City Tunnel was opened allowing the former PRR and Reading lines to operate as one unified regional rail system.

As part of the tunnel project, a new operational plan was developed by Vukan Vuchic, a professor at the University of Pennsylvania, and was based on the "S-bahn" suburban rail in Germany. SEPTA printed seven new color-coded timetables, each based on a PRR-Reading route pair (later adjusted after the line to Philadelphia International Airport was opened) — R1 (Yellow) Airport/Downtown; R2 (Maroon) Marcus Hook/Warminster; R3 (Orange) Media-West Chester/West Trenton; R5 (Blue) Paoli/Lansdale-Doylestown; R6 (Green) Ivy Ridge (Cynwyd)/Norristown; R7 (Red) Trenton/Chestnut Hill East; and R8 (Brown) Chestnut Hill West/Fox Chase. The R4 designation was originally reserved for Bryn Mawr but these trains were added to the Paoli Line schedules shortly after 1984. On July 25, 2010, SEPTA introduced new operating plans, schedules, and route names, and dropped the old R-designations familiar to a generation of commuters.

Growing Pains

The first full week of operations in the new tunnel was trying even to veteran commuters, as delays up to 30 minutes were common due to power problems, trackwork, and equipment issues. Train delays at Roberts Yard added to the problem, as there was only one-track connection to the main line for trains arriving and departing. Delays on the Reading side would now carry over to Pennsy lines due to the paired-line operating plan developed for the new tunnel. These problems were mild compared to what happened next.

On the evening of November 16, a SEPTA bridge inspector closed one track over the bridge at Ninth Street and Columbia Avenue in North Philadelphia due to unsafe conditions, cutting off all Reading-side service from the new tunnel. Further inspection revealed the steel supports in the entire four-track bridge were visibly flexing when trains passed overhead. Part of the structural steel was covered over by a ceiling in a community center, housed in the waiting room of Columbia Avenue station located underneath the bridge. The deterioration was caused by trapped moisture above the ceiling. SEPTA began terminating Reading-side trains at North Broad Street and passengers had to transfer to the Broad Street Subway for continuation of their journey to Center City.

RIGHT: On July 13, 2018, express Train 6374 departs Trevose for West Trenton as time is running out on the AEM7/ALP-44 fleet. The majority of the SEPTA stations retain their low-level platforms and pedestrian grade crossings.

BELOW RIGHT: With downtown Philadelphia forming the backdrop, Malvern-bound Train 1543 passes the Overbrook Maintenance Facility on April 27, 2019. The Overbrook facility replaced the Paoli Shop which was torn down to remediate soil and groundwater after years of PCB contamination.

BELOW: On June 14, 2019, Train 6378 discharges passengers at Woodbourne station. SEPTA has built a huge park-and-ride lot at the station to support suburban ridership.

ABOVE: Because the m.u. cars do not have sanding equipment installed to help with traction, SEPTA has built three "wash trains" that run between mid-October and mid-December. The specially homebuilt trains spray high-pressure water on the rails to remove residue from crushed leaves that cause slip-slide conditions. Train WASH-3 changes ends in the Chestnut Hill station on November 15, 2020, to spray the outbound main track on its return trip.

ABOVE LEFT: During the pandemic, SEPTA ran longer consists to allow for "social distancing" between passengers as shown by Malvern-bound Train 539 on January 9, 2021.

LEFT: Surplus U34CH diesels were leased from NJ Transit to allow for diesel-powered shuttles during track outages in electric territory during the RailWorks II rebuilding project in 1993. On May 17, 1993, one of the daily detour trains departs Woodbourne for West Trenton.
GARY PANCAVAGE PHOTO

While the Center City Tunnel work was underway, SEPTA also undertook a second large capital project of extending service from Center City to Philadelphia International Airport; SEPTA became the first commuter rail agency to provide direct airport service. A mix of new construction and part of the old Reading Chester Branch was required for the new 5.9-mile line, shared with Conrail freight trains at night. A bridge over the Northeast Corridor was built south of Arsenal Tower to avoid congestion with Amtrak and SEPTA trains to Wilmington/Marcus Hook. The major landmark of the project, however, was the 4,000-foot steel and concrete viaduct that curves high above Interstate 95, local roads, and the Tinicum marshes. The Airport Line opened on Sunday morning, April 28, 1985.

In June 1991, SEPTA formally announced the $354 million "RailWorks" project to address the badly deteriorating bridges between Wayne Junction and CP Brown (near the Center City tunnel portal). The project was a mammoth undertaking of rebuilding four miles of the four-track main line with welded rail, signal system upgrades, replacement of 20 bridges and the rebuilding of five additional bridges. In addition, a new station would be built at 10th and Berk Streets to service Temple University and would feature two center island platforms and a new station at North Broad Street. The project was to take place in two phases for summer 1992 and again for summer 1993, once again on the Reading side. While the RailWorks construction was underway, service would be suspended and passengers would transfer to the Broad Street Subway at Fern Rock to continue to Center City. A new station was opened in March 1992 to facilitate easier transfer between the Broad Street subway and the Regional Rail lines at Fern Rock. Trains from the old PRR side would continue to serve the new Market East Station and make reverse moves in the tunnel.

After much prodding, SEPTA did manage to provide two round-trip diesel-hauled trains between Fox Chase and 30th Street via non-electrified Conrail trackage. The first phase of RailWorks accomplished quite a bit with 12 bridges replaced, three bridges rebuilt, a new interlocking constructed at 16th Street, and new stations at Temple and North Broad.

RailWorks II was the 1993 continuation of the project between May 2 and September 5 of that year. SEPTA planned to operate two diesel-powered round trips each weekday between

ABOVE: An ACS-64 races through the station at St. Davids on the former PRR main line on April 20, 2021. The local historical society returned the PRR keystone stations signs to the canopy.
STEVE BARRY PHOTO

RIGHT: Train 3453 (West Trenton–Airport) passes the newly installed third track at Stony Hill Road in Yardley, Pa., on April 18, 2015. The train is on what would become the CSX separated line starting at West Trenton and extending to Wood Interlocking near Woodbourne.

BELOW RIGHT: Once the ACS-64 locomotives entered service, SEPTA began an experiment utilizing off-peak and evening push-pull trainset cycles to reduce mileage on the Silverliner V fleet. During this experiment, on July 15, 2019, Train 4571 approaches Thorndale, the last stop on its run from Warminster.

Doylestown and 30th Street and West Trenton and 30th Street, operating over Conrail tracks between Newtown Junction and Zoo Tower. SEPTA leased three surplus U34CH locomotives from NJ Transit for the service. Bridge replacement and repair continued along with welded rail replacement south of Broad Street Station; the new Temple station was also completed. While commuters had to suffer for two summers with lengthened commutes or sitting in traffic, the project managed to be completed on time and well below budget. SEPTA managed the money prudently and attributed cost savings to good weather and "hungry" contractors for a savings of about $90 million.

Funding the Next Generation

Once the dust settled on the RailWorks projects, operations settled down. As time went on, ridership increased as people utilized the train not just for commuting to work but also for attending events in the Pennsylvania Convention Center housed in the former Reading Terminal. The delivery of new Silverliner V cars also helped win ridership and allowed for the retirement of the original PSIC-purchased Silverliner II and III cars.

In 2007, Governor (and former Philadelphia Mayor) Ed Rendell signed Act 44 into law, authorizing the Pennsylvania Turnpike Commission to spend $450 million a year from increased turnpike tolls for transit improvements around the state. Over time, this fiscal wizardry earned the Turnpike the distinction as the most expensive toll road in the world. While transit agencies were still in need of money to fund the "state of good repairs," turnpike users — especially the trucking industry — lobbied the Pennsylvania legislature to find a different solution.

In November 2013, Gov. Tom Corbett signed into law Act 89, which increases long-term funding for transportation projects statewide including dedicated funding for public transit. SEPTA has received Act 89 monies to help pay for the upgrading of four antiquated bridges on the Media/Elwyn Line including the 120-year-old Crum Creek viaduct, the longest bridge on any SEPTA regional rail line. The capital improvements helped fuel steady ridership gains on the Regional Rail system, reaching a peak of 37.7 million riders in 2017.

Positive Train Control

In 2008, a Union Pacific freight train and a Metrolink commuter train collided head-on in Chatsworth, Calif. This incident was the impetus for the Rail Safety Improvement Act which Congress passed and was signed into law by President George W. Bush. The act required SEPTA and other commuter lines to implement Positive Train Control initially by 2015 and later by 2018. A contract was awarded to Anasaldo STS (successor to Union Switch & Signal) for approximately $100 million to do the job on SEPTA.

As part of the PTC integration project, SEPTA announced a partnership with CSX to separate the SEPTA West Trenton Line and CSX freight trains between West Trenton and Woodbourne stations. The project had an expected cost of $38.8 million and was eligible to receive $10 million in federal funding through the Tiger V Grant Program. When this project was started, SEPTA operated 57 weekday trains and CSX upward of 20 trains, over this joint stretch of track.

As part of this project, a third main track was built between Wood Interlocking in Langhorne and Iron Interlocking just west of the Yardley passenger station. This also split the trackage from Iron east to West Trenton station, with SEPTA utilizing the north track and CSX the south track over the double-track Delaware River bridge. Phase II of the project moved the m.u. storage yard to the north side of the main tracks at West Trenton.

PTC installation progressed on SEPTA lines with the first section activated on the Warminster Line on April 18, 2016. A sequential rollout of the other lines took place throughout the summer and fall. The last section of PTC between 30th Street Station and Fern Rock was placed in service on January 9, 2017.

Equipment

SEPTA started on January 1, 1983, with a collection of electric m.u. cars of both PRR and Reading heritage. The five Budd-built ex-PRR "Pioneer III" cars were rebranded as "Silverliner I" and were the only stainless-steel cars equipped with conventional knuckle couplers.

In 1963, the PSIC financed new Budd-built Silverliner II cars for Reading (17) and PRR (38). The PSIC coined the name "Silverliner" as a name for the cars to differentiate them from the heavyweight cars in use at the time.

In 1964–65, PSIC funded rebuilding 38 of the Reading Harlan & Hollingsworth-built coaches and combines by the railroad at its namesake shops which repainted them from dark green to blue and white. The new rebuilds were nicknamed "Blueliners." Six of the retired Blueliners were sold to Andy Muller's Reading Blue Mountain & Northern for its tourist trains.

Twenty Silverliner IIIs were built by St. Louis Car Co. in 1967 with the operating controls on the left side of the cab allowing passenger loading through both the front and rear doors so single-car trains could be operated on the PRR main line to Harrisburg. A group of these cars was rebuilt for Airport service in 1985. Between 1973 and 1976, 231 Silverliner IV cars with Budd carbodies and General Electric propulsion equipment were built for both Penn Central and Reading.

Entering a new era in 1986, the SEPTA board authorized leasing 25 push-pull coaches and 10 cab control cars from Bombardier, and purchased seven AEM7 electric locomotives to replace the last ex-Reading Blueliners. The push-pull trains are utilized only on weekdays in rush hour service.

A spare ALP-44 was given to SEPTA by builder ABB Traction as part of a contract settlement in 1995 over delay charges for a group of Norristown High Speed Line cars. In 1999, 10 additional center-door push-pull coaches were obtained from Bombardier to increase train consists. When NJ Transit purchased new Bombardier bi-level coaches to increase passenger loading on the Northeast Corridor, SEPTA picked up six coaches and two cab control cars built as Comet I cars for Erie Lackawanna now deemed surplus by NJ Transit.

In 2006, a $274 million contract was awarded to United Transit Systems, a consortium consisting of Hyundai-Rotem and Sojitx Corp. of America and the low bidder, to construct 120 new Silverliner V electric m.u. cars for SEPTA with four funded by DelDOT. The cars were built in South Korea and shipped to a refurbished facility in South Philadelphia for final assembly. These new cars would allow for the retirement of the Silverliner II and III cars in 2012. Once in service, the Silverliner Vs were a vast improvement over the 40-year-old Silverliner IVs with very bright interior lighting, automated announcements, and a closed-circuit television system showing destination announcements and bad commercials.

By early 2015 the AEM7/ALP-44 electric locomotives were showing their age and road failures were not uncommon as the locomotives never received their mid-life overhaul. SEPTA announced in mid-2015 that it would order 13 new ACS-64 electric locomotives from Siemens at a cost of $154 million; the proposal included an option for five more. When the dust settled, SEPTA ordered 15 new ACS-64 locomotives (901–915) with funding provided under Act 89. The first locomotive (901) was delivered in December 2017.

In July 2018, SEPTA's first Siemens ACS-64 entered revenue service. As new ACS-64s were delivered and placed in service, the AEM7s were making their final trips. Later that year, SEPTA ran an "AEM7 Farewell Trip."

While the ACS-64s could replace the AEM7s/ALP-44 on the conventional single-level Bombardier coaches, SEPTA also awarded an order to the American subsidiary of the China Railway Rolling Stock Corporation for 45 new bi-level coaches. The CRRC bid came in $34 million less than the next-closest bidder, Bombardier. In early May 2023, the first multi-level car shells arriving from China showed up on CSX freight trains en route to CRRC's final assembly plant in West Springfield, Mass.

SEPTA also maintains a small fleet of diesel-electric switchers and genset locomotives for the wire trains and

LEFT: While the Silverliner V cars were out of service due to cracked equalizer beams, train consists tended to be an Amtrak ACS-64 locomotive with several MARC coaches and a SEPTA cab car. On October 7, 2016, Train 9547 slows for its stop at Bryn Mawr.

BELOW: SEPTA began heavily promoting its new key card system as a way to avoid purchasing tickets from an agent on board.

RIGHT: A joint Amtrak/SEPTA project is the complete replacement of the Paoli station with a new center island platform, elevators to access each side, and an enclosed pedestrian walkway over the tracks. Phase 2 of this project will result in the removal of the 1953 station built by PRR along with construction of an additional 600-car parking garage.

BELOW RIGHT: A train discharges passengers at Narberth on the Paoli/Thorndale Line, where the platform is located on a sharp curve. High-level platforms would require an entirely new station to be built on a tangent section of track.

maintenance-of-way service, and to tow stranded m.u. cars and trains back to one of the repair shops. The current roster consists of three ex-Conrail SW1200s (50–52) inherited at startup, with two being repowered by Brookville Equipment and reclassed as BL15s. SEPTA has also purchased two new RL60 locomotives (60, 61) equipped with head-end power from Republic Locomotive. In 2009, SEPTA purchased its first and only genset locomotive, a GS14B (70) from National Railway Equipment. The latest addition to the switcher roster came in 2017 when Knoxville Locomotive Works built a single SE15B (80).

On July 1, 2016, a car inspector in Powelton Yard noticed a Silverliner V listing slightly to one side. The resulting inspection found a 10-inch-long crack in one of the 350-pound truck equalizer beams. The crack appeared where the plate welded to the beam had totally severed the equalizer beam; fortunately, this did not occur when the train was in motion. SEPTA immediately began inspecting the cars over the July 4th weekend and found the same defect in 114 of the remaining 119 Silverliner Vs, 95 percent of the fleet. On July 5, a modified Saturday schedule was put in place on weekdays while a solution was found.

That week, train service could best be described as chaotic. Riders who boarded stations closer to Center City were often left standing as the few already stuffed trains skipped stops. SEPTA quickly worked out plans with Amtrak, NJ Transit, and Maryland to lease extra equipment until a fix could be found. The leased equipment operated on Amtrak-owned lines and required some temporary platform lengthening to accommodate the longer trains. Amtrak provided one spare Keystone Service set for use between Suburban Station and Bryn Mawr. Amtrak also provided three additional ACS-64 locomotives that were used with the leased MARC single-level coaches, mainly on the Paoli/Thorndale Line. NJ Transit provided a single eight-car trainset with an ALP-46 locomotive that ran between Trenton and Center City.

SEPTA repaired the beams on the Silverliner V cars, and by October 2016 had enough equipment to resume regular weekday service.

Repair Shops and Yards

Originally, the electric m.u. cars were maintained at the former PRR shop at Paoli. On the former Reading side, a shop was built at Wayne Junction to maintain the former Reading cars. In 1994, the new Overbrook Maintenance Facility opened in West Philadelphia, allowing for the closing and demolition of the Paoli Shop.

Today, Wayne Junction handles the diesel switchers in addition to part of the electric m.u. fleet and is the normal base for the wire trains. When the Center City Tunnel was being built, an additional storage yard, inspection facility, and car wash was built at Roberts Avenue as part of that project. This provided additional tracks to store unneeded trainsets during midday off peak and weekends. The former PRR yard at Powelton Avenue just west of 30th Street Station also stores trainsets and can handle minor car repairs.

A new shop was required when the locomotive-hauled push-pull trainsets were placed into service, so SEPTA built a facility at Frazer, west of Malvern, on the Paoli/Thorndale Line. The shop was initially staffed with Bombardier managers and SEPTA craft labor to perform the maintenance and running repairs on the push-pull consists. SEPTA eventually took over supervision of the shop and can perform some work on the electric locomotives now as well. When the Paoli shop and yard were closed, local trains that used to originate at Paoli were extended to Malvern.

Expansion, Contraction, and Upgrades

Prior to the discontinuance of all diesel service on the former Reading side in 1981, SEPTA briefly extended service from Bethlehem to Allentown in 1978. The extension ended after just one year when the affected counties elected not to continue funding. The new Airport Line opened in 1985, providing direct service from Suburban Station and 30th Street Station to Philadelphia International Airport. Citing poor track conditions, the West Chester Line was cut back to Elwyn on September 19, 1986, but on August 21, 2022, service was restored from Elwyn to Wawa. The Paoli Line was extended from Downingtown to Parkesburg in 1990, but was cut back to Downingtown in 1996. Service was again extended to Thorndale in 1999, and in 2019 SEPTA announced its intention to return to Coatesville, pending construction of a new station currently in the design phase. SEPTA extended service on the former PRR branch from Manayunk to a new park-and-ride at Ivy Ridge in 1980. Concerns about the condition of the Manayunk bridge led to truncation of the branch at Cynwyd. The bridge was refurbished between 1996 and 1999, but SEPTA did not resume service on the line, instead lifting the rails north of Cynwyd between 2008 and 2010, and leasing the right-of-way to adjacent towns for a rail trail that opened in 2015. SEPTA service to Delaware on the Northeast Corridor was not restored until service resumed to Wilmington in 1989, with a Claymont stop added in 1991. Service was extended to Newark in 1997, with the Churchmans Crossing infill station opening between Wilmington and Newark in 2000.

In November 2017, SEPTA introduced a new mobile app that provides schedule information and train locations in real time, as well as the ability to buy or manage tickets. While it has gained in popularity, SEPTA conductors continue to sell onboard fares.

ABOVE LEFT: A Silverliner V is running on the "wrong main" due to trackwork as it stops at the ex-Reading station in Mount Airy on the Chestnut Hill East Line on January 20, 2021. STEVE BARRY PHOTO

LEFT: Since September 11, 1915, electric m.u. cars have been the mainstay of the "Paoli Local" between Paoli and Center City. One hundred years later, on February 14, 2015, Train 554 slows for its station stop at Paoli en route to Lansdale/Doylestown.

The World Grinds to a Halt

On March 6, 2020, the Philadelphia metro area recorded its first two cases of COVID-19. As state and federal mandates to slow down the spread of the virus were enacted, SEPTA would wind train service down gradually until April 9, 2020, when the "Lifeline Service Schedule" was instituted with just 137 daily trains (18 percent of normal service) operating every two hours on seven lines to allow for essential workers to reach their jobs. The new two-hour scheduling would see no trains on the Chestnut Hill East and West lines, Cynwyd, Manayunk/Norristown, West Trenton, and the Wilmington/Newark lines. The Paoli/Thorndale Line operated only as far as Malvern and the Lansdale/Doylestown Line was operated only to Lansdale. During this time, all ticket windows and waiting rooms were closed and paper tickets were phased out.

SEPTA did make productive use of the increased time between scheduled trains and had maintenance forces working on various projects, such as the final phase of the Southwest Connector Improvement Program that revamped track, structures, and overhead wire work in the University City area. SEPTA also finished its refurbishments of the last of the Bombardier push-pull coaches during this time.

Slowly, SEPTA added to the schedule with the Cynwyd Line being the last line restored. On September 5, 2021, new Regional Rail timetables were issued restoring weekday service to 65 percent of pre-pandemic levels.

Challenges Ahead

Since 1983, SEPTA has joined two separate systems into a unified railroad network and continues to upgrade station facilities and infrastructure. Like its counterparts in New York and New Jersey, SEPTA is facing the challenges of rebuilding ridership, as well as securing funding for future projects for the next 40 years of operation.