A Rare Re-Platforming Through Paoli

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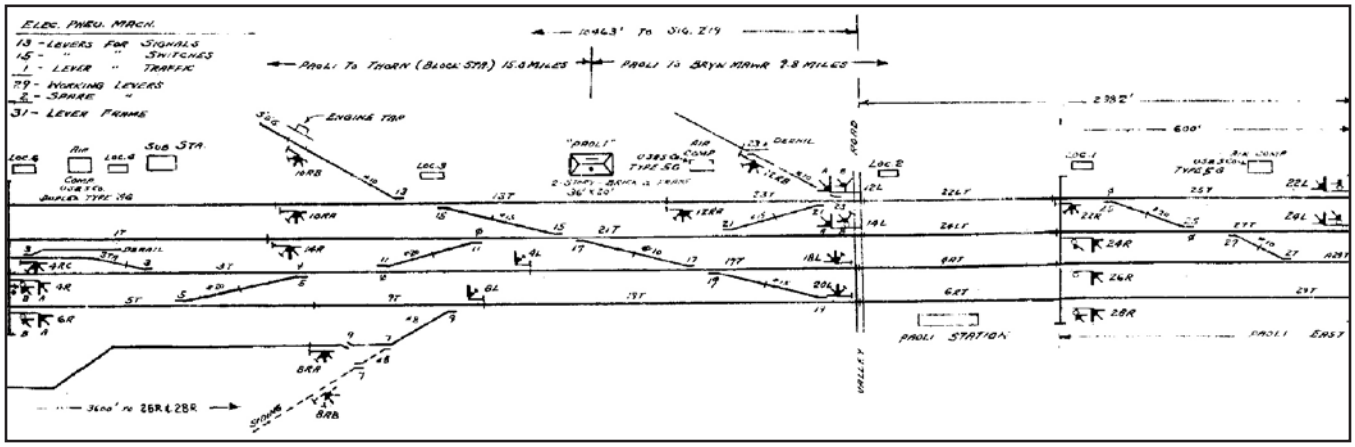
A Brief History of the Paoli Interlocking:

By the 1890s the power and influence of the mighty Pennsylvania Railroad (PRR or "Pennsy") was forcefully expanding. Many country villages adjacent to the PRR right-of-way just west of Philadelphia were being developed into highly desirable, gentrified communities. The last stop on what became known as the Philadelphia Main Line was the small town of Paoli, in Chester County.

Long-distance freight and passenger service from New York and Philadelphia to Pittsburgh, and the Midwest beyond, was dramatically increasing through Paoli during the last decade of the 19th century. And with the addition of its Philadelphia suburban commuter service, referred to as the "Paoli Local," the PRR constructed closely-spaced automatic block signaling to enable the safe passage of all this traffic. Then, in a final step in this effort, in 1895 and 1896 respectively, two new interlockings [1] were built on the four-track Main Line: the first at Bryn Mawr at Mile Post (MP) 10.1 (measured from Broad Street Station, Philadelphia); and the other at Paoli, at MP 19.8.

The Paoli Interlocking was originally designed as the terminal point for western Main Line commuter service, and built primarily to manage the numerous steam commuter trains and their combinations of local, limited and express service. But as the Pennsy's influence grew, so too did the role of the Paoli Interlocking. By 1915 the overhead AC electrification of the line from Philadelphia to Paoli was completed (and extended in 1938 all the way west to Harrisburg). Paoli remained the western Main Line terminus for commuter service, and also hosted a large storage yard and shop facility for the new fleet of commuter multiple-unit (MU) cars called MP54s. Paoli's original interlocking, adjacent to the station, became a four-track crossover with connections to the commuter yard. A subsequent addition to the interlocking, called the East End (east of the station), allowed track #3 to be signaled in either direction in order that the PRR's *Blue Ribbon Fleet* could bypass the heavy morning commuter traffic which operated on tracks #1 and #2. The Paoli Interlocking thus extended from Mile Post 19.5 to MP 20.2.



A portion of a diagram entitled "The Penn Central Harrisburg Division - East "Paoli" Interlocking, Paoli, PA. Correct as of January 1, 1972." *Courtesy of the Pennsylvania Railroad Technical & Historical Society.* **http://broadway.pennsyrr.com/Rail/Prr/Maps/Itlk/paoli.gif**

[1] A railroad interlocking can be described as the arrangement of signals, switches and other equipment so interconnected that one train will be prevented from conflicting with another train or equipment as it passes through an interchange of tracks such as a junction or crossing. If properly operated, an interlocking's equipment makes it impossible for an engineman to receive a signal to proceed unless his route is proven to be safe. **https://en.wikipedia.org/wiki/Interlocking**

But while traffic in and through the Paoli Interlocking continued to increase during the 1930s, nothing prepared the PRR for the transportation demands of the Second World War (WWII). For those reading this article in the 21st century, seven decades after the end of WWII, most never knew, or have forgotten, or simply can not comprehend the unrelenting surge of passenger and freight traffic that flowed continually through, or stopped at, Paoli. Three points of explanation need be remembered.

First, getting a seat on any American passenger train during the war years was never assured. The Pennsylvania Railroad's expansive long-distance passenger service was the largest in the nation, and by 1944 total passenger-miles on the Pennsy had increased more than four times from its 1939 pre-war totals. And the Pennsy's 15 elite *Blue Ribbon* trains, with names like *Broadway Limited, General, Spirit Of St. Louis and Trail Blazer*, which daily connected New York City with Midwestern business centers like Chicago, St. Louis, Cleveland and Detroit, all made daily eastbound and westbound stops at Paoli.

A second point to understand is that no PRR through-train connecting the West with New York City made a station stop in Center City Philadelphia. For example, every eastbound passenger desiring a Philadelphia-area destination had only two choices for disembarkation: Paoli, or the North Philadelphia station. Thus, each week during the war years, thousands of additional eastbound long-distance military and civilian passengers would arrive at the Paoli station to transfer to the "Paoli Local" MU trains to join the throng of regular Main Line suburban commuters for transit into central Philadelphia, or for continuation to the Navy Yard or "points south." This increase at Paoli placed a multiplied scheduling burden on the PRR commuter fleet.

Each of the eastbound *Blue Ribbon Fleet* early morning arrivals into Paoli were nominally scheduled to use the track #1 platform adjacent to the station. But by 1942 and "for the duration," as rail traffic through the Main Line grew exponentially, the Pennsy increasingly "re-platformed" its eastbound arrivals through Paoli so as not to conflict with the steady stream of MU commuter trains. Carl Landeck, historian of the Philadelphia Chapter of the Pennsylvania Railroad Technical & Historical Society (PRRT&HS), and a Paoli resident during a part of WWII, still recalls the regularity with which the crack eastbound Fleet trains would cross-over the Paoli Interlocking to actually make their brief stop along the long westbound (track #4) Paoli platform. All during the war years this process, while never explicitly scheduled, was routinely used to provide greater flexibility and smoother overall traffic flow to the railroad. With the end of the war, and the steep decline in American passenger rail use, the need for "re-platforming" measures were made unnecessary.

One final point: around the clock through Paoli, the middle tracks # 2 and #3 were ceaselessly filled by freight and mineral trains during the war years continually passing east or west. The right-of-way's elevation from Paoli drops 500 feet over the 19 short miles down to low-lying Philadelphia. As a result every eastbound freight and mineral train destined for the Philadelphia terminals and the Navy Yard was required to queue-up from just outside Paoli to as far west as Thorndale (MP 35.3) to allow brakemen to set sufficient retainers on the brake valves of each train's cars to prevent a catastrophic runaway during the steep descent.

The Current Status of the Paoli Interlocking:

In the seven decades since the high-water mark of the war years, so much has changed, including the demise of the mighty Pennsy, the interlude of the Penn Central and Conrail, the acquisition of the eastern "Keystone Corridor" from Philadelphia to Harrisburg by Amtrak, and the elimination of the Paoli Yard and the Car Shop. In 2016, Paoli station is owned by Amtrak, and the Paoli Interlocking serves the remaining Amtrak regional passenger trains and the numerous Southeastern Pennsylvania Transporation Authority (SEPTA) Regional Rail trains on the Paoli-Thorndale Line. Freight service on the eastern Keystone Corridor ended around 1983.

On any given weekday, thirteen Amtrak *Keystone* trains arrive and depart Paoli (connecting Harrisburg and New York City); as well as a single, daily *Pennsylvanian* connecting Pittsburgh and New York City. Eastbound from Harrisburg the Amtrak right-of-way is mostly two tracks towards Paoli, but as an Amtrak train enters the Paoli Interlocking in preparation for its routine passenger stop, the number of main tracks increases to four.[2] The interlocking normally melds each Amtrak arrival onto track #1 to facilitate its stop at Paoli station, all the while coordinating the arrivals and departures of the eastbound SEPTA commuter trains on the same track at the same station. That is the way the sequencing is supposed to work, and it works quite well.

[2] The four-tracks eastward from Paoli towards Philadelphia are numbered, sequentially, from the southernmost track (number 1 track) to the northernmost track (number 4 track). Typically, the number 1 and 2 tracks are eastbound, and the number 3 and 4 tracks are westbound, with track 3 signaled in both directions.

Looking west towards a portion of the complex Paoli Interlocking from atop the North Valley Road bridge, January 11, 1959. Partially hidden from view amidst the maze of catenary towers, the Paoli Interlocking Tower was built in 1896 with a brick base and a wooden upper story. This tower literally combined the eras of the all-wood towers and the later all-brick towers on the PRR. Immediately north of the tower sit row upon row of MP54 commuter MU cars. This image was taken by photographer Jim Shuman, and is provided courtesy of the Railroad Museum of Pennsylvania.

An Extraordinary Weekend in September 2015:

But on the weekend of September 26 and 27, 2015, circumstances would require fundamental changes to normal train operations and sequencing through Paoli — sequencing barely used since the tumultuous days of World War II. The Roman Catholic pontiff, Pope Francis, was visiting Philadelphia, and it was anticipated that between 1.5–2 million pilgrims would converge on Center City to see the Holy Father. Because of substantial security-based road closures in and around Philadelphia during that weekend, virtually all the faithful would have to use public transportation, most of it rail service.

SEPTA had announced the previous month that it would double its rail capacity over that September weekend, but because of security and logistical concerns, only 18 SEPTA stations would be available for passenger boarding throughout SEPTA's system. Trains would operate on an express schedule with limited stops to reduce travel time into Philadelphia.

On the Paoli/Thorndale line, one of SEPTA's busiest Regional Rail corridors, only two stations, Paoli and Radnor, would be available, and these exclusively for papal visit passengers. The sole terminus in Center City for the Paoli/Thorndale line was 30th Street Station. SEPTA had scheduled 13 trains in each direction, with an additional three trains prepared should they be needed. It was anticipated that Paoli would be the most-used station throughout the entire Delaware Valley.

SEPTA's eastbound service from Paoli and Radnor stations into the city would run every half-hour from 5:30 a.m. to noon on each of the two days, and westbound trains on a similar schedule each evening from 5:30 p.m. through 12:30 a.m. Every 25–30 minutes, a long MU consist [3] would pull into Paoli station on track # 1 to load all available passengers, with another MU consist behind the first a short distance on the same track waiting to replace its predecessor upon its departure. For six-and-a-half hours this progression would continue. No passengers would be carried westbound from Center City during the morning travel period, and no inbound trains would operate from outlying stations during the evening period. [4]

[3] Consist: the group of rail vehicles making up a train. **https://en.wikipedia.org/wiki/Glossary_of_North_American_railway_terms**

[4] *Philadelphia Inquirer*, section B, page 11, August 2, 2015

Amtrak's *Keystone* Train #664 glides eastbound from Track #1 onto #2 on Sunday, September 27, 2015. *Photograph courtesy of the author.*

During that papal weekend, from 5:30 a.m. to noon, two eastbound Amtrak *Keystone* passenger trains were scheduled to stop in Paoli (plus a third train on Saturday morning only). The *Keystone* normally loads/unloads at the Paoli station on track # 1, but that track would be continually occupied during the morning.

As a local historian [and as documented in the preceding article in this issue], I decided that during this papal visit I would spend both Saturday and Sunday mornings in and around Paoli taking photographs of what was certain to be a memorable event indeed, and speaking to the faithful from all over the world pouring into and through Paoli to Center City and those assigned to protect the crowds. And on that weekend, I observed thousands of pilgrims as they patiently waited for SEPTA to transport them on their journey, protected by hundreds of police officers, emergency responders and National Guardsmen.

Shortly before 9:00 a.m. on Saturday the 26th, I walked across what was, for this weekend only, the North Valley Road "pedestrian bridge" in Paoli, and headed for the old wooden steps down to the westbound platform to take frontal shots of the crowds waiting to board the next SEPTA Express. I had vaguely noticed that in and around the Paoli station area was signage instructing Amtrak passengers to cross the bridge for eastbound boarding at the opposite platform, but honestly those instructions had not registered with my prior experience, and I ignored them. Now, arriving on the westbound platform, I chatted briefly with several Amtrak police officers who informed me that the next eastbound *Keystone* (Train Number 660), normally due in at 8:41 a.m., was running a bit late, but would be pulling into the *westbound* platform on the #4 track in just a couple minutes. It was at that moment that it occurred to me that, for this extraordinary papal weekend, Amtrak would be re-platforming its eastbound long-distance trains in a way virtually identical to the manner in which the PRR's *Blue Ribbon Fleet* frequently passed through Paoli during World War II.

The eastbound *Keystone* train, hauled by a newly operational "ACS-64" type electric locomotive (#617), approaches Paoli station's westbound platform on Sunday, September 27, 2015, while crossing from Track #3 onto #4. *Photographs courtesy of the author.*

Soon, *Keystone* #660 effortlessly glided through the interlocking from the #2 eastbound express track, across the #3 westbound express track and onto the #4 westbound local track, stopping alongside the old 1890s westbound shelter. All the while, I was taking dozens of images of this rare diversion sequence. In the past, my friend Carl Landeck, who had lived in Paoli during WWII, had described to me in detail this re-platforming sequence from those long-ago war years, but of course I had never witnessed such a diversion myself. As the train departed Paoli toward Center City, an Amtrak police captain, who had been watching while I took my photographs, approached from behind and commented: "In almost 30 years with the railroad, I have never seen this happen before."

Over that historic weekend I took many images of interlocking crossovers of Amtrak *Keystone* trains passing through Paoli. I was so fortunate to be there, in a real sense reliving history. With the changes stemming from the pending construction of the new "Paoli Intermodal Transportation Center," [5] it is likely that we will never see it happen this way again.

[5] For more information on the new Paoli Train Station, see **http://www.tredyffrin.org/projects/septa-penndot-amtrak/paoli-train-station**

Eastbound *Keystone* train 660 crosses from Track #3 towards Track #4 as it approaches Paoli station's westbound platform

Passengers and Amtrak police officers stand along Paoli station's westbound platform on Track #4 as eastbound *Keystone* Train 660, hauled by locomotive #612, draws into its station stop, Saturday, September 26, 2015. *Photographs courtesy of the author*

This image, taken from the crest of the North Valley bridge in Paoli looking east on September 27, 2015, shows an eastbound *Keystone* train heading toward Philadelphia and New York City after departing the westbound Paoli platform. The Paoli station is located at milepost 19.8, with crossover switches at MP 19.5, and the Daylesford station at MP 18.6. The train is shown leaving #4 Track, crossing over the #3 Track (which is the only track signaled in both directions), and joining onto the #2 Track where it normally runs. Just beyond the train, an empty SEPTA consist patiently waits for the crossing to be completed. *Photograph courtesy of the author*

Acknowledgement:

I wish to heartily thank three railroad historians, Carl Landeck, Frank Tatnall and James Brazel, who helped me place the incident described within its correct historical context. I am very grateful to my friends for their help.