

A SHORT LINE LIKE NO OTHER

Pacific Harbor Line Assistant Trainmaster/
Train Dispatcher Vic Yoder keeps track of the
railroad's multiple movements inside the
bridge tender and dispatch center on Badger
Bridge in Long Beach, Calif. Charles Freericks

Pacific Harbor Line keeps traffic moving
at North America's biggest port complex
by Bill Stephens



Pacific Harbor Line built this international stack train at the ports of Los Angeles and Long Beach for BNSF Railway. A quartet of BNSF locomotives hauls the eastbound train up Cajon Pass at Hill 582 on Sept. 12, 2021. Three photos, Bill Stephens



Bound for PHL and an export facility at the Port of Long Beach, 154-car Union Pacific iron ore train OUTSI creeps down Cajon Pass on Sept. 11, 2021, with C45ACCTE No. 6002 as the trailing distributed power unit. The lead locomotives of the 8,174-foot, 21,504-ton train are visible downgrade in the distance.

Pacific Harbor Line stands in a league of its own. The railroad that serves the ports of Los Angeles and Long Beach is a short line in the sense that its trains roll over 19 route-miles and a grand total of 96 miles of track.

But nearly all of the railroad's shortline similarities end

there. And then PHL's superlatives begin to stack up like containers at North America's busiest port complex. PHL boasts centralized traffic control, a double-track main line, and 41 radio-operated, power-assisted switches. Every day, 30 or more PHL crews fan out across the ports and their 10 on-dock marine terminals to build and receive BNSF Rail-

way and Union Pacific international double-stack trains as long as 16,000 feet. Another eight to 10 PHL switch jobs dodge their way around all the stack trains to provide frequent and flexible service to 29 carload customers in and around the San Pedro Bay ports.

The enormity and complexity of PHL's operations begin to sink in when you consider that



PHL President Otis Cliatt II. PHL

nearly all of this activity is crammed into a footprint that measures just under 6 square miles. "There are not a lot of short lines that even consider us to be a part of their peer group, because of how big we are," PHL President Otis Cliatt II says. "We have a complex network with significant density in a very small area."

Yet PHL, as the neutral switching company for two competing ports and a pair of rival Class I systems, somehow manages to fly under the railroad world's radar. PHL handles around 40,000 manifest carloads per year. "Once I say that's our secondary business, you get people's attention," Cliatt says.

What raises eyebrows is when Cliatt mentions to the uninitiated that PHL carries up to 2.8 million containers per year and launches and lands 30 or so stack trains a day. "That really gets people's attention," he says.

And it should. PHL is a vital link in the global supply chain. Nothing has made that more apparent than the pandemic-related surge in imports that brought record volumes to Los Angeles and Long Beach starting in the second half of 2020. PHL kept the container trains moving, despite the heavy toll COVID-19 took on the railroad's employees through a combination of infections and quarantines.

About a third of the containers that land on the docks at Los Angeles and Long Beach ride BNSF and UP intermodal



Handling a cut of cars for interchange, PHL MP20B-3 No. 21 backs off the railroad's trackage onto the Alameda Corridor on Sept. 15, 2021. Support tracks for Union Pacific's Intermodal Container Transfer Facility are at right, lined with double stacks.

trains to inland points including Chicago, Kansas City, Memphis, and Dallas-Fort Worth. Watch a parade of BNSF and UP international stack trains climb Cajon Pass, or UP's Dallas-bound stacks work up Beaumont Hill on the Sunset Route as they leave the LA Basin, and you see PHL's handiwork in action. The only rail-hauled eastbound marine containers that don't bear PHL's fingerprints are those originating from UP's near-dock terminal, the Intermodal Container Transfer Facility (ICTF), and BNSF's Hobart Yard.

A LITTLE SWITZERLAND

The Pacific Harbor Line was born from inefficiencies that mounted in the mid-1980s as container traffic at the ports grew exponentially.

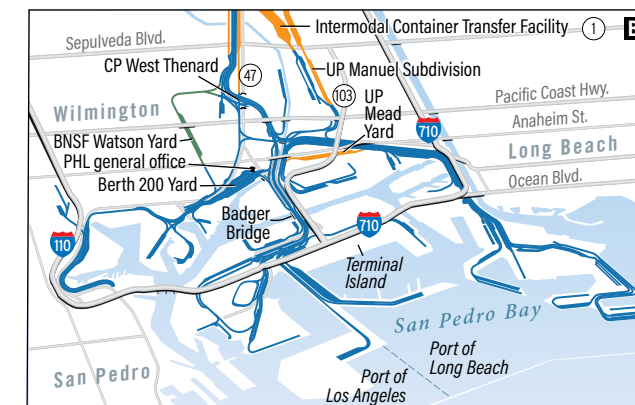
The ports had different rail service models at the time. Since the 1920s, Harbor Belt Line had provided switching service at the Port of LA. Jointly owned by the port, Pacific Electric, Santa Fe, Southern Pacific, and Union Pacific, the Harbor Belt had become an unwanted stepchild. It was saddled with outdated labor contracts, was expensive to operate, and was not known for providing good service. The Harbor Belt switched carload traffic at the port, with the Class I railroads retaining the right to operate unit trains. Long Beach was more straightforward, with SP serving the port and handling switching. UP, meanwhile,

had exclusive access to Terminal Island, which is split between the Port of LA and the Port of Long Beach.

Trucks hauled containers in droves from the ports to the Santa Fe, Southern Pacific, and Union Pacific ramps near downtown LA, some 20 miles from the docks. As volume grew, the ports looked for more efficient solutions: near-dock and on-dock intermodal terminals. The ICTF, a joint facility developed by the ports and SP, opened in 1987. The first on-dock terminals opened around the same time, creating an odd mix of competition involving three Class I railroads, two ports, and multiple marine terminals and ocean carriers.

SP controlled about two-thirds of the container traffic thanks to the ICTF. After investing \$150 million in the facility, SP was not happy when other railroads landed contracts at Long Beach's new on-dock terminals. "At SP, we howled bloody murder," says Andrew Fox, a former SP executive who helped create PHL and went on to become its first president.

SP made life miserable for container lines and Santa Fe. SP wouldn't agree to improve its Long Beach trackage and sometimes resorted to operational mischief. Santa Fe could race a train across the country from Chicago, only to have to sit outside the port waiting for a Southern Pacific local to finish switching scrap.



Similar competitive dynamics played out on Terminal Island, where UP had no incentive to work with ocean carriers who used SP or Santa Fe.

As a result, each Class I railroad made independent decisions, which affected the overall fluidity in the port complex, and ultimately led to severe criticism of rail inefficiencies. By the early 1990s the ports had seen enough. Their solution was to create an entity that would act in the best interests of all parties involved, operating over a neutral territory —

like a little slice of Switzerland — that would level the playing field for both ports, the Class I railroads, marine terminals, and ocean carriers.

The Ports of LA and Long Beach separately acquired SP and UP property within their respective port boundaries. SP, UP, and Santa Fe (which owned no port trackage) agreed to cooperate with the creation of a neutral switching railroad. The ports sought rail operators, and in 1995 selected Anacostia Rail Holdings over several other bidders. PHL began operations



The day's last beams of light shine on Pacific Harbor Line YPUP09-27, a Union Pacific dock job, on Nov. 27, 2021, as the train pulls off Terminal Island with a trio of cranes looming in the background. Charles Freericks

in fall 1997 by taking over switching operations at the APL terminal at the Port of LA, then at the Evergreen terminal. The railroad began full operations in LA in February 1998 and at Long Beach in August 1998.

Anacostia based its bid on two assumptions, Fox says. First, that the Class I railroads would continue to run unit trains to and from the ports, including stack trains. And, second, that carload business would stabilize, anchored by automotive import traffic. Carload traffic had been in decline for years as the ports prioritized containerized traffic.

Meanwhile, the growing confidence in PHL's ability to act as an extension of the Class I railroad operations, while remaining neutral, led to BNSF and UP turning over much of their on-dock intermodal operations to PHL. This business became PHL's mainstay, Fox says, and today about 30 intermodal and terminal crews work around the clock at the ports, providing switching for

BNSF, UP, and the marine terminals. Manifest traffic requires an additional 10 crews, on average. "It's an incredible achievement, and we are fortunate that our partners gave us the opportunity," says Fox, who is retired but remains on PHL's board. "We didn't know when we bid on it that we would be providing all this intermodal service. That was originally not included."

PHL has to keep earning the business every day because of flexible agreements that would allow the Class I railroads to step back in if they wanted to.

PHL's carload business has grown, too, thanks to changes such as providing multiple switches per day and improving interchange reliability by retrieving cars from BNSF's Watson Yard and UP's ICTF complex — as well as several other locations — instead of having the Class I railroads deliver cars. "Today we have anywhere from two to three times the carload business than when we took over, despite having fewer

actual customers," Fox says. "None of it would exist without the trust of the Class I railroads in our ability to be part of their solution and provide service to their local customers."

RAINBOW TRAINS

PHL's operations have become more complex over the years amid rising container volumes, longer trains, ever-larger ships, and shifting ocean carrier alliances.

Initially, PHL built pure stack trains that carried the containers of one ship from a single ocean carrier. "One marine terminal had blue containers, and we'd build a blue train," Cliatt says. "One marine terminal had yellow containers, and we'd build a yellow train."

Once a 5,000-foot train was assembled, PHL would deliver it to BNSF or UP at one of several locations between the docks and West Thenard, PHL's junction with the Alameda Corridor, as well as UP's ICTF support yard.

When the Great Recession

hit in 2007, BNSF and UP began focusing on longer trains of up to 10,000 feet. This required PHL to shuttle stack cars from one marine terminal to another, or in some cases from one port to another. "It definitely increased the complexity," Cliatt says of moving 5,000-foot cuts of cars from terminal to terminal.

A few years later, the complexity ratcheted up again as ocean carriers began deploying massive new container ships that could carry between 15,000 and 21,000 TEU, or 20-foot equivalents, the common measure of marine containers. To fill the ships, the ocean carriers reduced the number of shipping alliances to three, down from four, that include nine of the 10 largest container lines. The larger ships flood the ports with surges of volume. They also scramble PHL operations because they carry boxes destined for both BNSF and UP trains. "You have a rainbow on the ship that's going from anywhere from one to four ter-

A PHL switch job handled by MPI MP20-3B No. 21 — a low-emission locomotive, like all the railroad's current units — emerges from beneath the Harbor Freeway with a car from the Phillips 66 refinery in Wilmington (right). Below, the same crew pushes cars across John S. Gibson Boulevard into the refinery. The railroad serves 29 carload customers, but must work around stack trains to handle that traffic. Two photos, TRAINS:

David Lassen



minals," Cliatt says. "Instead of an all-blue train, now you've got a blue, green, yellow, and red train."

Meanwhile, BNSF and UP continued to increase train length, first to 12,000 feet, then 14,000 feet, and now to up to 16,000 feet. Receiving trains is more difficult than building them because the on-dock terminals are all stub-ended, requiring PHL to perform gymnastics to avoid trapping locomotives when trains enter the terminals.

"Everything's got to wye and shove," says Rick VanZee, PHL's director of operations. When a stack train arrives off the Alameda Corridor, PHL needs to efficiently handle the complex movements frequently required to get the train to its destination. Often, one crew climbs aboard the lead unit, while a second separates the train and hops on the mid-train distributed power units. If the train has a DP unit on the rear, it's removed. Both halves of the train are wyeed, then shoved to the correct marine terminals.

All this activity — running

cuts of cars between terminals and ports, departing outbound trains, and breaking up inbound trains — is no small feat on a compact railroad. Roughly two-thirds of the stack traffic originates or terminates on Terminal Island, which is reached by Badger Bridge. The double-track vertical lift bridge sees more than 80 train movements — working around some 13 bridge lifts — on a typical day. "The chokepoint definitely is Badger Bridge," VanZee says.

The bridge is home to PHL's dispatchers, who also combine yardmaster and bridge operator skills. "You have to have a creative mind and strong multitasking ability to succeed in this environment," says dispatcher Vic Yoder, who previously worked at UP's Harriman Dispatching Center.

BNSF and UP dock managers, based at PHL's modern headquarters building, plan rail operations in the harbor and provide the PHL with daily switch lists. "There's a lot of collaboration that goes on here, just by the fact that we have UP and BNSF in this building,"

says Cliatt, who played line-backer at Florida A&M University and went on to become a Division I referee.

Cliatt's experience wearing zebra stripes comes in handy at a neutral switching railroad where PHL, BNSF, and UP all vie for track space. "Everyone wants to go first," Cliatt says. PHL prioritizes its moves pursuant to a set of dispatching protocols that all parties have agreed to.

LOOSE CAR RAILROADING AND ORE TRAINS

For all its complexity, PHL has one simple operating rule: Don't delay stack trains. So, traffic bound to and from PHL's 29 carload customers has to work around intermodal trains. "Switching the customers themselves isn't the challenge," Cliatt says. "It's getting to them."

Virtually all of the carload customers have short spurs, including a handful with only a four-car spot. "We can double their output if we can give them a double switch every day," VanZee says.

"We provide a very tailored service product that allows our customers to compete effectively, which in turn affords us traffic growth — we view our relationships as partnerships," says Kimia Khatami, who was PHL's director of customer service until an October 2021 promotion sent her to Anacostia's headquarters in Chicago.

PHL's commercial and operations teams are joined at the hip to coordinate how to re-

spond to customer requests. "We're hands-on every day, all day long," VanZee says as Khatami nods in agreement.

Almost every carload customer is "order-in," meaning their cars sit in PHL's Berth 200 Yard until requested. The 28-track facility opened in 2014, replacing Pier A Yard, which was converted to an on-dock intermodal yard. PHL's headquarters and adjacent locomotive servicing facility are also located at B200. Two dozen tracks are devoted to manifest operations and can hold 625 cars. The other four tracks support intermodal operations.

The carload customers include autos, petrochemicals, lumber, grain, cold storage, and scrap metal. All are within the port complex, except for a handful located in the Reyes industrial district, where PHL took over local operations from UP in 2010.

Overnight in October 2020, iron ore exports became PHL's priority non-intermodal commodity. The railroad last handled iron ore in 2014 and figured it was gone for good due to changing economics. But new ownership at the mine in Cedar City, Utah, on UP's Cedar City Subdivision, and Chinese steelmakers' demand for high-quality ore proved to be a winning combination.

Several times per week UP delivers 154-car, 21,500-ton ore trains to PHL. "This place isn't built for unit trains. And you can't have a unit train block an intermodal train," Cliatt says. "There's not really a place in



One of Pacific Harbor Line's 3GS21C genset locomotives pulls a long stack train for clearance over Henry Ford Avenue in Wilmington. PHL jobs generally work with a single unit despite the lengthy trains the railroad handles. Two photos, Charles Freericks



The Yang Ming Switch Job works the end of track at Knoll in San Pedro, home of the Los Angeles Harbor, with a considerable amount of containers stacked behind. PHL's locomotives wear a paint scheme inspired by early Santa Fe switchers and road-switchers.

this port that can handle it intact. So we have to dissect that train.”

PHL's crews wye the 8,100-foot trains and split them into cuts of 50 cars or so. The cars are then delivered in dribs and drabs to the SA Recycling terminal at the Port of Long Beach, where the ore is loaded onto a waiting ship.

A VITAL LINK

The COVID-19 pandemic upended the global supply chain in unprecedented ways. At the onset of the pandemic, imports were reduced to a trickle because Chinese factories shut down. American consumers shifted their spending from experiences to goods, which increased demand and

depleted retail inventories to historically low levels. Container imports came charging back beginning in June 2020 thanks to what Port of Los Angeles Executive Director Gene Seroka called a 100-year surge in consumer buying. The combination of whipsaws in volume, record imports, and the impact of COVID-19 infec-

tions created congestion that extended across the Pacific from Asian ports to Los Angeles and Long Beach, and on to inland intermodal terminals and warehouses.

PHL, whose logo proclaims the railroad as “Gateway to the World,” was in the thick of it all. “We are really at the ground zero level of the supply chain,”

Cliatt says. PHL, like the ports, ocean carriers, and Class I railroads, bent under the strain of the pandemic but did not break.

Prior to the pandemic, about nine of PHL's 150 Brotherhood of Locomotive Engineers and Trainmen employees would have been off duty on a typical day. “From March 15, 2020 through the end of April 2021, we averaged 30 employees off per day” due to infection or quarantine, Cliatt says. When COVID spiked in the Los Angeles area in November, December, and early January, PHL averaged 40 workers out per day — a quarter of its workforce. “How do you serve your customers? You're in the middle of a pandemic. You can't hire additional employees,” Cliatt says.

“November and December 2020 were living hell,” Cliatt recalls. “Many times we utilized managers to operate trains to service customers who were being severely affected.”

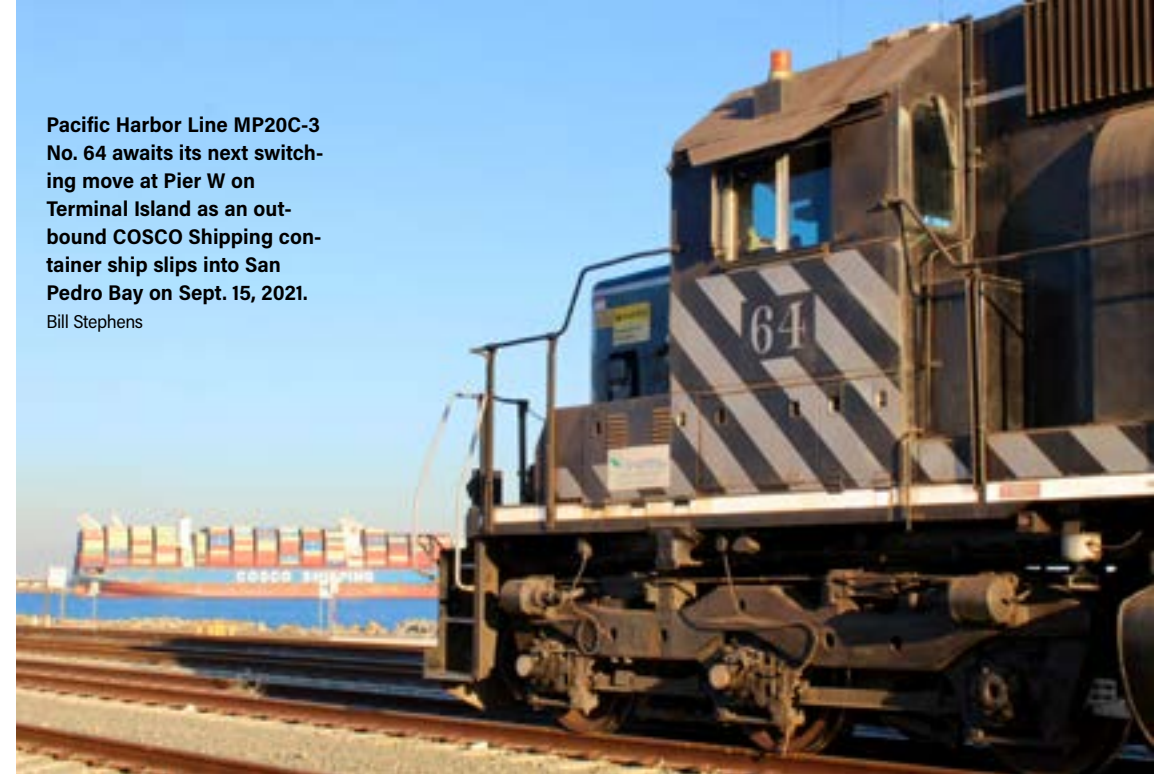
Cliatt, a combat veteran, could have worked from home. But, like PHL's train crews, he worked out of the railroad's headquarters every day. “You can't lead a group of people who are coming in, putting their life on the line every day to serve America, from the house,” Cliatt says. “We are the front line of the global supply chain.”

PHL prioritized intermodal operations and played catch-up with surging carload traffic when it could. “We did not face any volume declines across the many commodity groups handled — on the contrary, most of our customers had record years,” Khatami says.

Lumber traffic skyrocketed. “Because of the unexpected spike in commodity demand, many importers/exporters began shipping unprecedented volume to capitalize on high pricing, knowing it would not last forever,” Khatami says. “This led to severe congestion in the ports and within our serving yard because, while the capacity of destination facilities remained the same as before, our customers were unable to absorb this new inventory at a

Pacific Harbor Line MP20C-3 No. 64 awaits its next switching move at Pier W on Terminal Island as an outbound COSCO Shipping container ship slips into San Pedro Bay on Sept. 15, 2021.

Bill Stephens



A PHL crew works at CP Mole on Terminal Island, assembling a train from the APL Global Gateway South facility, on Sept. 23, 2021. Locomotive No. 61 is one of 14 MP20C-3s on the roster. TRAINS: David Lassen

speed necessary to open up space for incoming traffic.”

PHL worked through it and by November 2021 employment was back to full strength thanks to new hires.

MORE CHANGES COMING

The port complex is constantly evolving, bringing change to PHL and its operations. In October 2021, the Port of Long Beach opened the final phase of its massive Long Beach Container Terminal, which includes on-dock rail capacity for 1.1 million TEU annually. By itself, the \$1.5 billion facility, with a total capacity of 3.3 million TEU, would rank as the nation's sixth-busiest port.

Next up: Long Beach aims to break ground in 2024 on a Pier B On-Dock Rail Support Facility that will be completed in phases through 2032. Ultimately, the project will double the Pier B yard capacity, add five new arrival and departure tracks, 93,000 feet of support tracks, and a locomotive servicing facility.

“Long Beach Pier B yard will be a huge plus,” Cliatt says. The project will create intermodal car storage that doesn't exist at Long Beach today and will smooth operations with 10,000-foot tracks where PHL can build trains that combine volume from both ports.

PHL's locomotive fleet, clad in a black-and-aluminum

livery that's a tribute to early Santa Fe hood units, is a far cry from the five former Conrail SW1200s and a pair of Harbor Belt GP7s the railroad deployed at startup. Current locomotives are all low-emission units due to stringent air-quality regulations at the ports. Fourteen Motive Power Industries MP20C-3s are the backbone of the fleet, which also includes several National Rail Equipment gensets, a pair of MP20B-3s, and a Progress Rail PR24B and PR30C.

The fleet is about to get even cleaner: PHL has ordered a zero-emission EMD Joule battery locomotive from Progress Rail as part of a demonstration project at the ports. The 3,200-hp, six-axle unit is equipped with a 2.4 megawatt-hour lithium-ion battery and A.C. traction. It's expected to be able to run for 24 hours between charges.

Delivery of the Brazil-built Joule locomotive, initially scheduled for late 2021, has been put off until late 2022 due to supply chain issues.

“Because of our footprint, we have a great location for testing locomotives. We have track grades, curvature, length, and we have tonnage,” says Cliatt, who hopes the PHL fleet will be battery-electric by the end of the decade. **I**