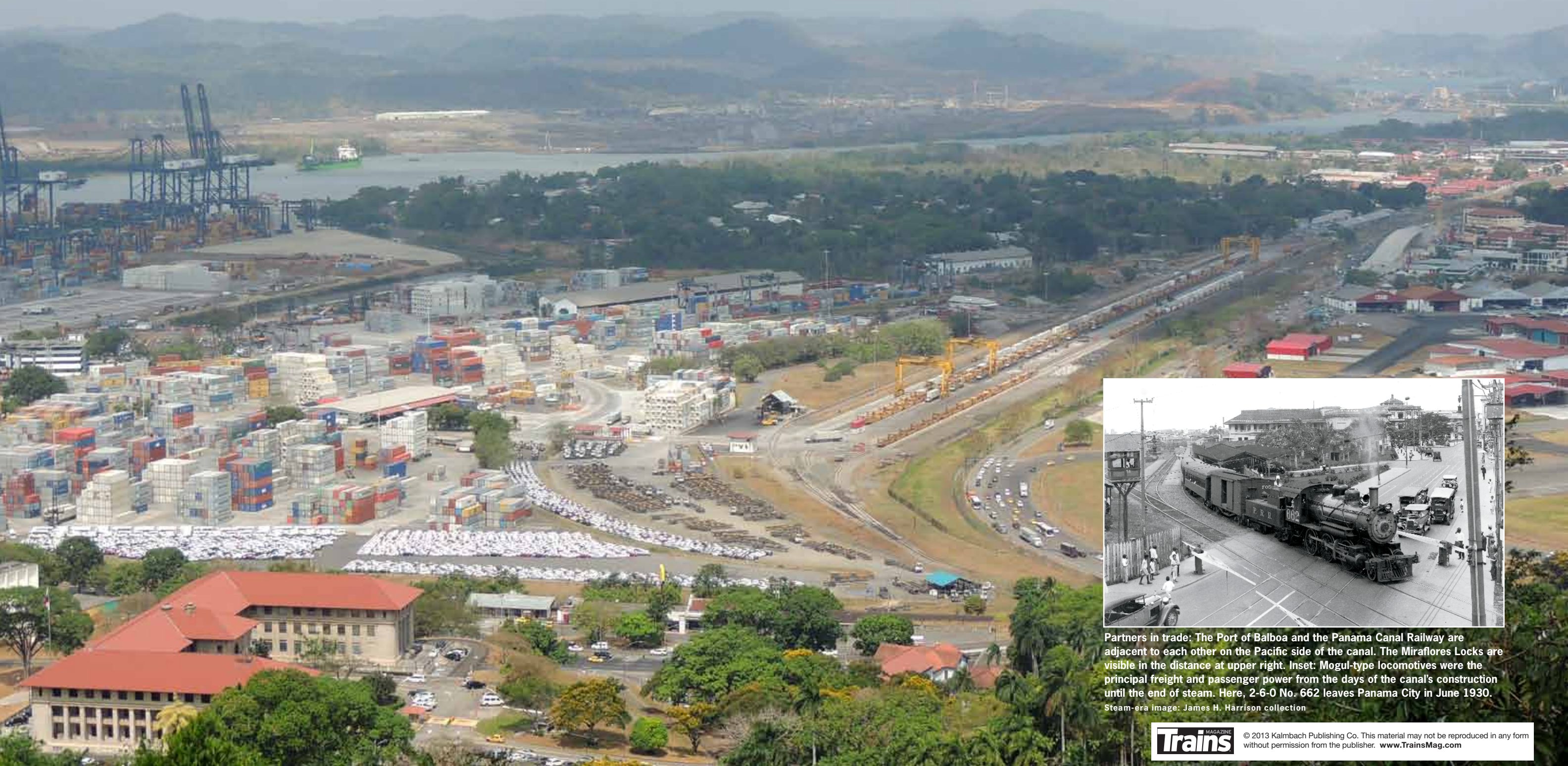


# THE BIGGEST LITTLE RAILROAD ON EARTH

How the Panama Canal Railway became incredibly profitable, and why the canal expansion will only help • Story and photos by Peter A. Hansen



Partners in trade: The Port of Balboa and the Panama Canal Railway are adjacent to each other on the Pacific side of the canal. The Miraflores Locks are visible in the distance at upper right. Inset: Mogul-type locomotives were the principal freight and passenger power from the days of the canal's construction until the end of steam. Here, 2-6-0 No. 662 leaves Panama City in June 1930. Steam-era image: James H. Harrison collection



Trucks are perpetually in motion, constantly cycling containers between the docks and the intermodal terminal on the Pacific side. F40 No. 1863 has just arrived with a train.

Some 3.5 million years ago, during the Pliocene Epoch, an isthmus rose up from the sea to separate the Atlantic and Pacific oceans. The implications of this accident of geology went unremarked until 1513, when Spanish explorer Vasco Nuñez de Balboa stood atop a hill in Panama and became the first European to glimpse the Pacific. In the ensuing centuries, the Spanish dreamed of a canal, the French tried to build one and failed, and finally the Americans succeeded. All of them were on to something: There is money to be made in uniting the world's two great oceans. But the most reliably profitable way to do so may be with trains instead of ships.

Enter Dario Benedetti. In the 1990s, he had become one more in a long line of dreamers. He was an international sales manager with Mi-Jack Products, an Illinois-based manufacturer of rubber-tire gantry cranes that are used in ports and intermodal terminals the world over. Strictly speaking, it wasn't his job to conjure em-

pires, but he did have occasion to meet a lot of people in the Latin American business community. Some of them were pitching a concept called the Alpha-Omega project, which would have created a rail line between Atlantic and Pacific ports in Southern Mexico. Similar projects were envisioned in Nicaragua and Costa Rica, but Benedetti thought they all required too much capital to be feasible.

And then he found the Panama Railroad. Mi-Jack was part-owner of a small container port in Cristóbal, a part of Colón on Panama's Atlantic coast, and Benedetti met government officials who were interested in privatizing the railroad. The line had fallen into disuse and ruin, but the important thing was that the right-of-way for a land bridge already existed. Like flecks of gold in the muck of a stream, it would need to be cleaned up, but the riches were there.

The analogy is an apt one, because the Panama Railroad was a child of the California gold rush, completed in 1855. In the mid-19th century, there was no easy way to get to California from the eastern U.S. The '49ers either went overland, or by sea around Cape Horn, or across the Isthmus, which generally afforded the fastest pas-

sage. It was not without its rigors, however. The jungle was dense, the weather was steamy when it wasn't teeming with rain, and frequently fatal tropical diseases were an ever-present threat.

Most of the people who got rich from the gold rush weren't the argonauts themselves; they were the people who provided goods and services that the gold-seekers needed. The Panama Railroad and its founder, William H. Aspinwall, were no ex-



Cargo Operations Manager Jose Williams monitors the movements of drays between the intermodal terminal and the port.

ception. This "other PRR" was only 47 miles long, but once opened it charged \$5 for a one-way passage across the Isthmus, and that was for people who walked. It cost \$10 to ride in second class, an astounding \$25 in first class, and ten cents a pound for baggage. (A dollar in 1855 had about the same spending power as \$30 today.) Atlantic-bound traffic was just as profitable, since the railroad was the principal means of shipping gold to the eastern U.S. The railroad's expenses were commensurately high, however: Its initial construction cost was \$8 million, and Panama's jungle and rivers were forever threatening to swallow the tracks. Still, investors loved the railroad. It recouped its initial investment within seven years, the stock paid dividends as high as 44 percent in the early days, and at \$295, its shares were once the most highly priced on the New York Stock Exchange.

The Panama Railroad was the first transcontinental railroad, but the world moved on when that other transcontinental, the Union Pacific-Central Pacific, was completed in 1869. Panama's railroad was revived when the canal builders showed up, since it was the only feasible way to carry off the spoil from excavation of the big



ditch. (The canal isn't entirely a ditch: man-made Lake Gatún accounts for about half its length, though the 9-mile Culebra Cut was a truly gargantuan work of excavation.) The railroad remained active during the days of U.S. control, since it was the primary means of transporting goods and passengers within the Canal Zone. Carload freight is not a part of the modern railroad's business model, but most industrial buildings in the former Canal Zone have remnants of their old spur tracks.

**'I DON'T HAVE ROOM FOR YOU ON TUESDAY'**

"Dario is not only the father of the railroad," says Tom Kenna, Panama Canal Railway's president and director general, "he's the most patient human being I've ever met." That trait would serve Benedetti well as he methodically went about reviving the railroad. If conjuring empires wasn't a part of his job description, neither was building railroads. But he did know two people who could pull it off, provided he could get them interested. The first was his boss, Mike Lanigan, founder and CEO of Mi-Jack. The second was Mike Haverty, who was running his own transportation investment firm in 1994 after stepping

down as president and CEO of the Santa Fe Railway three years earlier. Haverty and Lanigan had known each other for years. Each in his own way, they were important players in the intermodal revolution, and the new Panama Canal Railway would be all about intermodalism.

"Had it not been for Benedetti and Lanigan twisting my arm," Haverty recalls good-naturedly, "I never would have gone to Panama." But the Mi-Jack men didn't know railroading like Haverty did, and they needed him to provide a reality check. The railroad was so dilapidated that it took 4 hours for Haverty and Benedetti to ride from Balboa to Colón, perched on the pilot deck of a locomotive. Still, Haverty saw potential. He was so impressed that he took the idea to his board of directors at Kansas City Southern Railway shortly after he became its president and CEO in 1995. That's how the Panama Canal Railway became a partnership between KCS and Mi-Jack.

The business model was unique in all the world. Think of a giant "X," with ships converging from Atlantic and Pacific, north and south, with the crux at Panama. A ship originating in Hong Kong might carry containers bound for several destinations in

the Atlantic basin. At some point, that ship will dock, and its containers will be parceled out among ships going to the various Atlantic ports. Maersk Lines, for example, has an Atlantic transshipment center at Kingston, Jamaica. Why not unload the ship from Hong Kong on the Pacific side of the canal and use the railroad to get containers to the Atlantic? The railroad hauls the containers “in-bond,” meaning that they’re sealed in transit and don’t have to undergo customs inspection, and the Colón free trade zone at the railroad’s Atlantic terminal means that the containers can go to another ship duty-free. From a customs standpoint, the railroad functions exactly as the canal does: It’s as though the containers never left the ship.

Why would an ocean carrier want to do this? Two reasons: speed and cost avoidance. “We can load a train in an hour and a half, and it’s on the other side 75 minutes later,” says Kansas City Southern President and CEO Dave Starling. “The minute it’s out our gate on the other side, it’s at the port because we’re contiguous to the ports at both of our terminals.” Starling gives a real-life example: “A vessel comes up from Chile with produce on it. It gets to our Pacific terminal in the morning, and it’s on a ship on the Atlantic side bound for New York that afternoon. Another carrier was transiting the canal without taking it off the

**Gamboa siding, near the midpoint of the railroad, was lengthened in early 2012. Here, track workers connect two segments of continuous welded rail while a ballast train waits.**



ship, and it took them a full day longer to get to New York. The minute that started to work, we knew we had something.”

The cost advantages to the ocean shippers can be eye-popping, both in terms of capital expense and operating cost. Again, Starling offers an example: “Let’s say you’re an ocean carrier, and you want to sail from Hong Kong every Friday. It’ll take eight vessels to provide every-Friday service across the Pacific and into the Caribbean. Now, if Maersk does its transshipment in Panama instead of at Kingston, they can do it with seven vessels instead of eight. [Each vessel costs about \$30 million.] So they’ve saved the capital expense of an entire ship.

“With only seven vessels, they save 104 transits a year — one a week in each direction — and a transit costs about \$300,000. So now they have another \$30 million or so to play with. Then I ask the question, what does it cost to discharge the vessel on the Pacific side and move the containers across by rail? About \$27 million. So now they’ve saved \$33 million. [\$30 million on the eighth ship, and \$3 million on Panamanian transit.] The service is actually faster than if they used Kingston for transshipment, plus there’s no market in Kingston. When the railroad brings it into the Atlantic side of the canal, there’s a \$30 billion-a-year free trade zone. So they started doing that, and it just exploded. You’re talking about a full-

vessel discharge. And that’s just Maersk. Meantime, you have APL saying, ‘Wait a minute, I gotta have some of that.’ And then you have MSC, Evergreen, and so on — to the point that the railroad is actually picking who they’re going to have: ‘I don’t have room for you on Tuesday...’”

### FIELD OF DREAMS

It’s remarkable that Benedetti, Haverty, and Lanigan all saw the potential immediately, because over the next several years, almost everyone else was either skeptical or didn’t grasp the model. First came the Panamanian government, which was prepared to grant a concession, but without terminal properties on either end. The terminals were indispensable to the business model, and the two Mikes didn’t want the railroad without them, but the land had already been given to port operator Hutchison Whampoa, Ltd. An arduous 18-month negotiation ensued, involving the government, the port operator, and the Mi-Jack-Kansas City Southern team. Benedetti philosophically describes the period as “an educational process, convincing Hutchison Whampoa and the highest levels of the Panamanian government that this was in their interests.” Finally, they saw the light, and the investors received a 50-year concession to operate the line, with terminals included. The property was renamed the

Panama Canal Railway to better suggest where it ran within the country.

Later skeptics would include the ocean shipping companies, the same customers the fledgling Panama Canal Railway was targeting. Kenna, who came to the railroad from ocean carrier Hapag-Lloyd, admits that he didn’t get it at first. “In my world, the rule of thumb was that it didn’t make sense to put a container on a train for less than 500 miles.” Other shipping firms were puzzled, too. “They thought the railroad would never get off the ground,” Haverty recalls. “We saw some economies of scale that the ocean carriers didn’t see at first because rail didn’t fit their traditional business model for Panama. Service and economics ultimately prevailed.”

One shipping guy who did get it was Starling. He was a vice president in Hong Kong with container line APL when Benedetti came to town with Panama Canal Railway’s global dog-and-pony show. Starling was facing a job relocation he didn’t particularly want to make, and when Benedetti made his pitch, Starling began thinking about more than just being a customer. He had spent 13 years in operations with Frisco and Burlington Northern and 10 years with APL, with a stint at Mi-Jack in between. He knew railroading, container shipping, terminal operations, and both Mikes: “a perfect fit,” in Haverty’s words. “It was June 1999,” Starling recalls, “and the railroad hadn’t started yet. I was intrigued because it was an opportunity to build a new railroad. You don’t get to do that very often.”

And build it, he did. Starling became Panama Canal Railway’s president, and in the following two years, the railroad was reinvented. “We removed the rail, the ties, everything,” he recalls, “and started over. We did 18 inches of sub-ballast, 22 feet wide across the whole system, rolled and compacted. You could drive across it at 70 mph before we put the ties on top of it.” The rebuilding is even more impressive considering that everything had to be imported. “There’s no rail material in Panama,” Starling continues, “so everything to build the railroad had to come by ship, even the ballast, which came from Nova Scotia.” Continuously welded 136-pound rail was laid on concrete ties, a necessity in light of the moist climate. Now, after 12 years of operation, the rail has been ground exactly once. The initial cost was \$35 million (with another \$75 million for rolling stock and terminals), but the railroad was built to last for the entire 50-year concession.

The financing came from KCS and Mi-Jack in equal 45 percent shares, with 10 percent support from the International Finance Corp. (The finance corporation was bought out in 2006, and now KCS and Mi-



**The morning commuter train simmers at the new Panama City passenger terminal. The train has an F40 on each end, precluding the need to turn the consist at each end.**

Jack are 50/50 partners.) It was a gutsy investment, especially considering the skepticism of the ocean carriers. It comes as no surprise when Lanigan says, “It was pretty scary, and there were a lot of sleepless nights. We invested over \$100 million without a single customer. But Mike Haverty’s expertise confirmed everything we thought we had. It was a field of dreams: If you build it, they will come.”

### WHAT’S GOOD FOR THE CANAL IS GOOD FOR THE RAILROAD

“Whenever people talk about Dave Starling, they mention the rail experience, the terminal experience,” Kenna observes. “That’s nothing. His real talent is people. I had 15 years in shipping, happy as a bee, but somehow he charmed me into coming to the railroad.”

Kenna, too, had indispensable qualities. He knew shipping, of course, but he also holds dual citizenship in the U.S. and Panama, where he has spent most of his life. He knows the culture and he knows the nation’s government and business leaders. In a small country like Panama, where it often matters who you know, Starling needed a man like Kenna as his second-in-command. Together, they worked 14-hour days for more than two years, rebuilding and selling the railroad. “It was a crazy time — more a lifestyle than a job,” Kenna says, “and we spent more time with the railroad than we did with our wives.”

The pace is a little saner now that the Panama Canal Railway has matured, but Kenna’s enthusiasm is undiminished. He’s at the Balboa passenger station almost ev-

ery morning, greeting the commuters by name, and they return the greeting. Most of them live in Panama City and work in the Colón free trade zone, and they’re among the country’s movers and shakers. The train consists of six cars, mostly of Budd origin, but also including an ex-Southern Pacific “terrace dome” car, which SP had converted from a Pullman tavern-lounge in 1955. The train is frequently chartered for shore excursions by cruise lines, making one or more round trips between its morning and evening commuter assignments. It’s probably the plushiest commuter train anywhere.

Kenna’s connections often come in handy. “There’s no Association of American Railroads here: We *are* the railroad industry. Unauthorized incursions happen every single day because the country has no railroad mentality.

There was one place where we had a crossing with gates and everything. All of a sudden — big project! — they start building a roundabout. Right over the crossing, and completely forgetting the railroad! I go to the authorities and say,

‘You can’t do this,’ and they say, ‘Why not?’ The concession agreement does include terms that guarantee the right-of-way, but from a practical standpoint, Kenna has to tread lightly. “We’re guests here.”

The incursions are both blessing and curse, because many of them stem from Panama’s booming economy, and ultimately, that’s good for the railroad. Kenna describes the results of the U.S. exit from Panama in 2000: “We were living very complacently off the American bases, but when the U.S. left, Panama had to find a way to survive. We went out and started



**Tom Kenna**



The Paoli local out of Philadelphia was never like this. Panama's elite ride the commuter train, and it's also booked by cruise lines, so refinement is the order of the day.

marketing ourselves. Now, Caterpillar, Dell Computer, and Procter & Gamble all have significant operations here." Today, "bustling" doesn't begin to describe the glitz, the construction dust, and the chaos of Panama City, a center of international trade and finance, and home to about a million people.

Inevitably, the conversation turns to the biggest single driver of the Panamanian economy — the canal — and the likely effect of its current expansion on the railroad. As early as the 1930s, the U.S. recognized a need for wider and deeper locks and channels to accommodate bigger ships; indeed, an expansion project was actually under way until World War II caused resources to be diverted. The current canal improvements, slated for completion in 2015, will accommodate ships with roughly three times the capacity of current vessels in TEUs, container ship lingo for 20-foot equivalent units, a standard measurement of capacity.

"None of our business today has anything to do with the canal's limitations," Kenna says. "These larger ships will bring more cargo, which will necessitate more transshipment in order to maintain full utilization of the ships; otherwise, they kill their economies of scale." Haverty echoes the theme: "The business plan was always based on repositioning containers from one side to the other, and to and from the free trade zone in Colón. The more business the canal does, the more (the Panama Canal Railway) does." Starling cites yet another factor: "The canal has to recoup its cost of capital for the expansion. So they just keep raising their rates, and every time they do that, the transit becomes more painful."

### SOUTHERN EXPOSURE

Television viewers may remember a 1990s series called "Northern Exposure," which revolved around Joel Fleischman, a

young New York doctor who was sent to a remote Alaskan village in order to repay his education. Everyone in town was a little quirky and decidedly un-New York, making for a classic fish-out-of-water story.

Meet Steve Hooper, the Panama Canal Railway's Fleischman. A native of Vancouver, British Columbia, he spent 21 happy years with Canadian Pacific, serving all over his native land in almost every operating capacity from carman to yardmaster to road foreman. Hooper is a recreational sailor, and he spends his vacations serving on the crews of sailing vessels. He visited Panama in 2004, rode the railroad for fun, and was so intrigued that he later contacted the railroad to learn more about it. In 2008, he became the Panama Canal Railway's director of operations. He packed his bags, found a place to live, closed the door behind him, and asked, "What have I gotten myself into? I don't even speak the language." But he has an irrepressible taste for adventure, and now it's hard to imagine him anywhere else. He embraces Panama with all its foibles. Seeing a vendor alongside the road, he stops and rolls down the window of his truck. The vendor knows what he wants, and in Spanish, he tells Hooper that he'll have it in five minutes. "¿Cinco minutos de Panamá, o cinco minutos normales?" Hooper asks and they both laugh.

He drives his high-rail truck to a grade crossing and climbs down to position the flanged wheels on the rails. "Don't touch that," he says, pointing to a plastic bag on the ground. "There's a dead chicken in it." A writer with a healthy sense of curiosity can't help asking how he knows that. "Because there was another one here last week. A voodoo lady lives in that shack over there. A dead chicken, stuffed into a plastic bag and left on the tracks, exorcises evil spirits." Oh.

We high-rail from one end of the railroad to the other, and Hooper recounts the adventures and challenges of railroading in the jungle, like the time he ran over a huge boa constrictor on the tracks. There was no way it could have survived getting run over by four flanged wheels, so Hooper stopped his high-railer and got down to remove the snake, only to find it slithering off the tracks under its own power. Another high-rail truck wasn't so fortunate: It hit a crocodile and went flying into the ditch. The jungle is brimming with life, and critters are always on the right-of-way, though they usually scatter when confronted by locomotives. At another location, Hooper removes a large turtle from the tracks: It was probably dropped there by waterfowl, who know it can crack its shell on the rails.

At Paraíso (Paradise), he radios the dispatcher for permission to stop. There's a pineapple juice vendor parked in a grassy strip between the tracks and a parallel roadway, and Hooper wants his guest to partake of a tropical pleasure. It's cold and uncommonly delicious.

The Panama Canal Railway is like that, a small railroad with a homespun quality to it. But it runs like a big railroad, from its maintenance standards to its operational discipline, and even to its positive train control system, which was adopted in 2006.

Of necessity, the railroad has learned to be self-sufficient. With a payroll of about 200, all but three of whom are Panamanian, the railroad does all of its own maintenance. One of the road's F40 locomotives, bought secondhand from Amtrak, has just



Steve Hooper rescues a turtle: Good for the reptile, good for the railroad. In a few seconds, the turtle will be in Lake Gatún.

received a new prime mover, which was lifted into place by a Mi-Jack crane. Daniel Chanis supervised the job. He ran his own machine shop and did contract work for the Panama Canal Railway until the railroad offered to buy his firm and take his employees onto the payroll. He now reports to Colin Corrigan, an American who has lived most of his life in the Canal Zone and stayed put when his fellow "Zonians" went home. Corrigan retired from a career with the canal and became the railroad's chief mechanical officer.

Their job is mission-critical because this is a scheduled railroad that has to be kept moving. Every 60 to 90 minutes, around the clock, a train leaves one terminal, bound for the other. (There are two sidings along the route.) The railroad is a conveyor belt, and just like coal trains or commuter operations, the idea is to keep the trains shuttling back and forth. In 2012, the railroad hauled 400,000 containers, all of them in Gunderson "Twin Stack" cars, 100 boxes to a train. These cars are now rare in the U.S., but their bulkheads are an advantage for the railroad since they make it impossible to open the containers in transit, thus ensuring in-bond transport.

"Whereas larger railroads would face greater challenges in getting a train from point A to point B, our challenges are at the terminals," Hooper says. Every freight train has the same consist, and there aren't any connecting railroads, so getting a train over the road is a comparatively simple exercise. In contrast, Hooper adds, "We live or die by the terminals. When they're running well, everything else falls into place."

What if they're not running well? That's when the railroad does a cut-and-run. "Let's say a crane broke down at the port," Hooper explains. "The ship is supposed to execute 400 moves during its berthing window: 200 boxes on and 200 off. If the crane breaks down, what do they do? They have to make their transit, because [the Canal Authority] will charge a big penalty if they miss it." So the ship leaves the boxes behind, and the railroad takes them to the other side. "But generally, it's first-in, first-out. We're offering the same high standard of service to everybody," Hooper says matter-of-factly.

### RESULTS AND REVERIES

The Panama Canal Railway is profitable by any standard, due not only to the efficiency of its operations, but also to its pricing power. The company is the only railroad in town, and as long as it represents a savings compared with the canal, it'll have all the traffic it can handle. The picture promises to get even better, not only because of the canal expansion, but also because the Panama Canal Railway received



The morning commuter train leaves Balboa, bound for Colón, with engineer Omar Sanchez at the throttle. Note the positive train control monitor atop the control stand.



Rivers of commerce: the Panama Canal Railway and the famous Panama Canal. Two ships enter the locks at Pedro Miguel, the first step down in the trek to the Pacific.

prime development land as part of its concession, the potential of which is still mostly untapped. "We spent several years building the railroad," Kenna says, "but now you'll really see real estate taking off."

Future capital improvements will be financed out of cash flow, not from debt, and the Panama Canal Railway can well afford to do so. Top line revenue for 2012 was \$65 million, and the railroad paid healthy dividends to the two owners. Just as startling, the railroad's operating ratio hovers in the low 40-percent range, a figure that North American railroads can only dream of.

Indeed, there's a dreamlike quality to so much of Panama. It's maddening and charming, ugly and beautiful, backward and modern, all at the same time. Standing in the jungle, amid the monkeys and the huge blue morpho butterflies, a person

could be forgiven for thinking that the place was just made yesterday.

Turn around, though, and you'll see the railroad and the canal both running through it, forces of nature in themselves with their unending and mesmerizing rivers of commerce. The country has cast a spell on visitors for 500 years, and that includes the people who came in search of riches. If it's possible to be a romantic and a hard-headed railroader at the same time, the folks at Panama Canal Railway have mastered the art. **I**

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