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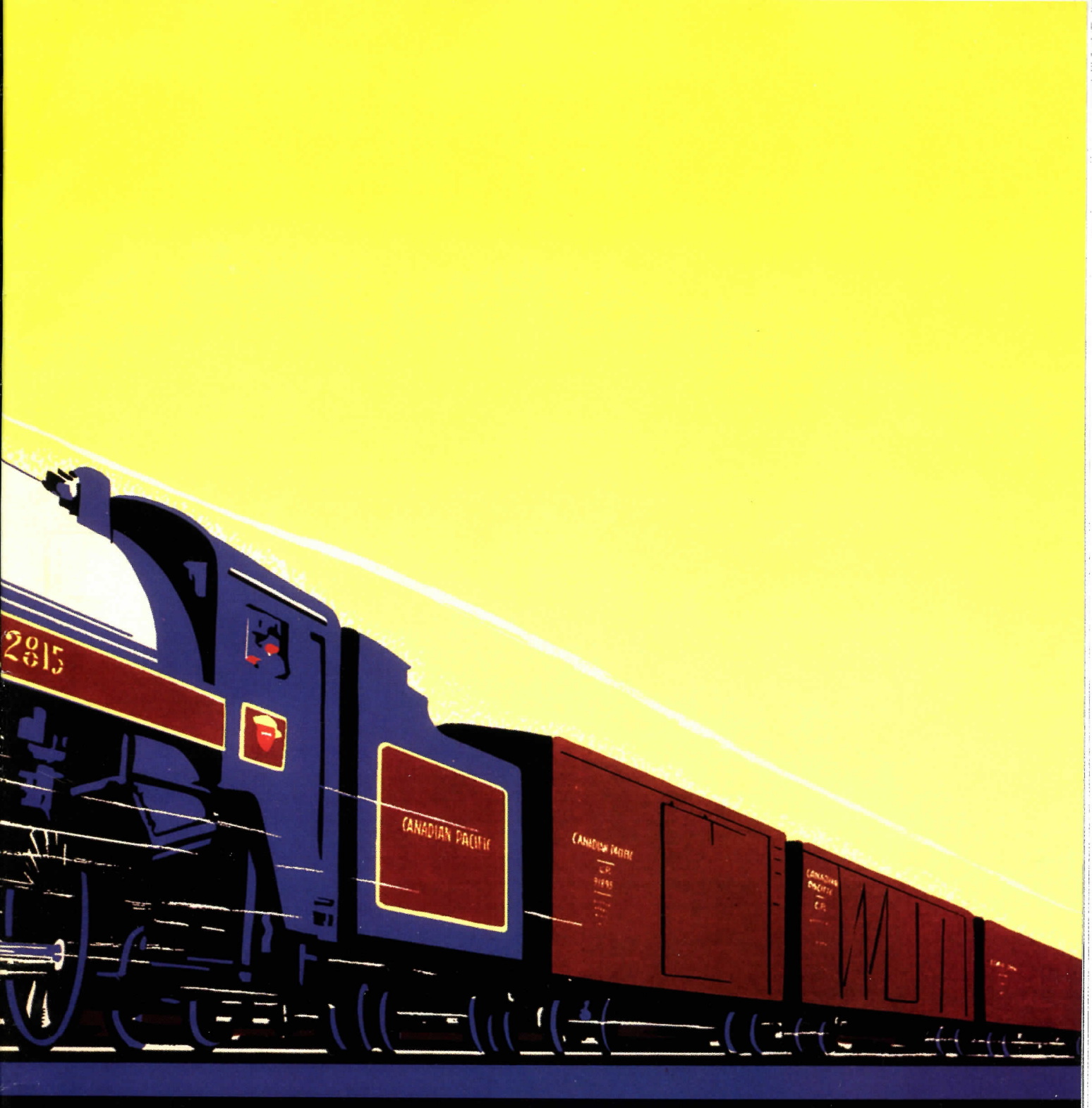
Canada's

From the Orient to New York via Vancouver, precious silk could only be transpo



Silk Road

CANADIAN PACIFIC RAILWAY ARCHIVES

one way – by rail. For Canadian railways, every minute counted. by Graham Chandler

When Mary Lynas was in Grade 6 she and her classmates would race down to Canadian Pacific's train yard on the eastern fringes of Calgary to watch a spectacle that still captivates her as she remembers that early-1930s scene.

"That train came in at terrific speed," recalls the granddaughter of Colonel James Walker, one of Calgary and Alberta's most influential early citizens. "They stopped only to put water in, change crews and go again."

The pit-stop action Lynas is talking of was to service Canada's special silk trains that roared out of the port of Vancouver between 1887 and the late 1930s through the Rockies, across the prairies, through the Canadian Shield to Montreal and Buffalo, N.Y., loaded with precious cargoes of raw silk from the Orient. Bound for the National Silk Exchange in New York and the mills of the eastern seaboard, the perishable silk, used to make luxury items like scarves, ties, shirts and dresses, was given the ultimate priority over all rail traffic, even express trains and, some said, royal trains.

CANADIAN PACIFIC RAILWAY ARCHIVES/2838

Unloading silk bales from the *Achilles* at the port of Vancouver in 1927.

Adding to the rush was the exorbitant cost of insurance. A bale of raw silk could easily fetch more than $800 in the 1920s. With about 470 bales to the car, a full trainload was worth upwards of $6 million, a lot of money in the days when a brand new Ford cost less than a bale of silk. Insurance companies started the clock as soon as the bales were unloaded – rates were charged by the hour from the time the cargo left the boat until it was unloaded at its eastern destination.

The silk business was so lucrative for both Canadian National and Canadian Pacific railways that every minute counted. Nothing was left to chance. Freight agents would often board a ship in Victoria and feverishly complete their paperwork so unloading could start the second they docked at Vancouver. There, as soon as the ropes cinched the ship tight at the wharf, the race was on. The captain was on the megaphone shouting orders. Silk bales were streaming off by conveyor belt even before passengers stepped on the gangplank. Stevedores whipped into action manhandling the 90-kilogram bales onto the dock and into the warehouse for waiting customs agents, who would clear them on the spot. Then the burlap-wrapped 12-inch by 24-inch by 36-inch bales were wheeled onto specially built rail cars, which were sealed and panelled with wood.

These special cars were built shorter than normal boxcars, to take curves at higher speeds. "They were totally different from the other freight cars, they had to be lightweight and fast," says Jonathan Hanna, Canadian Pacific Railway's corporate historian. Mounted on passenger car trucks [suspension and wheel systems], "they were solid, so they could put up with high speed," says Hanna. At Vancouver, well before the ship approached, 8 to 15 of them were already coupled to an engine fired up to full steam, an engineer's hand poised on the throttle.

Loading crew action was measured by the seconds per bale. For one eight-car train, a typical regimen reported by CN was: ship docked at 15:42, commenced unloading at 16:13, train loading completed by 17:45 and train left dock at 17:52 – total time from ship tie-up to train departure of 1 hour 39 minutes. Another reported an average time of 2.45 seconds per bale; anything less demanded an explanation to management.

Train loaded, a couple of armed railway police jumped aboard (although no robberies ever occurred) and with a blast of the whistle the engineer pushed the throttle forward. Smoke belching and steam hissing, they'd roll out toward Hope. It was more than an express train. As the *Vancouver Daily Province* reported on Jan. 10, 1903, the silk train "makes the regular express time appear as but a snail's pace." The particular CP silk train about which the newspaper was commenting had left Vancouver at 6 a.m. and reached Kamloops, 400 kilometres northeast through the mountains, 10 hours and 45 minutes later – beating the regular express's time by a full hour.

Transfer of silk bales from a shed to a waiting CPR train.

CANADIAN PACIFIC RAILWAY ARCHIVES/NS 6940

The silk business was so lucrative for both Canadian National and Canadian Pacific railways that every minute counted. Nothing was left to chance. Freight agents would often board a ship in Victoria and feverishly complete their paperwork so unloading could start the second they docked at Vancouver.

Coming out of the mountains with their steep grades and tight curves that limited train speeds, throttles were opened wide on the straight lines of the prairies where speeds routinely hit 1.5 kilometres per minute and more. "Steam locomotives didn't have speedometers or governors like locomotives today," says Hanna. "In those days you were supposed to go track speed which rarely exceeded 70 miles [112 kilometres] per hour but you couldn't say if you did or didn't because it was all in counting the time between mileage markers – if you knocked it off in 45 seconds that meant you were going 80 [130 kilometres]."

Sustained high speeds could be taxing on the locomotives and cars, so stops were made at every divisional point – about 200 kilometres apart. "They didn't feel comfortable running them at speed with maintenance limited to a couple of shots of grease and some lube oil," explains Hanna. "There's so many thousands of moving parts, and roller bearing technology wasn't around yet."

Pit stop times averaged about seven minutes. As the hot engine hissed and squealed to a stop, it was quickly uncoupled and a freshly watered, fired-up engine snapped on. At the same time, a 'car man' was rushing around with his oil can, opening each journal box, shooting oil in and slamming it shut, then moving on to the next one. "It was all wonderfully exciting to watch," recalls Mary Lynas.

Fresh crews took over at each stop. Silk train crews weren't particularly special – but they were usually the senior men. "The senior crews had first choice of trains," explains Hanna, "and if you chose a silk train that was your whole day's shift and you got home sooner – you worked fewer hours than on a regular train shift. So it would have been the 'A' team on the silk trains but more for selfish reasons than pride in being the best."

Steaming on through the Canadian Shield and south, CN silk trains completed their race against time crossing the border over the Niagara suspension bridge

CANADIAN PACIFIC RAILWAY ARCHIVES/NS6940

A CPR silk train picks up speed as it leaves Vancouver.

Across the continent, silk trains followed no regular schedule, so it was an exhilarating moment to catch a glimpse as they flew past unexpectedly in a cloud of cinders, smoke and steam.

to Buffalo. There, U.S. Customs quickly sampled the bales (silk wasn't subject to import duties) and CN handed the torch over to the New York Central Railroad, which made the dash to the finish line at Manufacturers Terminal in Hoboken, N.J.

Across the continent, silk trains followed no regular schedule, so it was an exhilarating moment to catch a glimpse of the fabled trains as they flew past unexpectedly in a cloud of cinders, smoke and steam. There was an intriguing myth that inside the bales silkworms were happily spinning their glossy cocoons as the trains sped across the country. That was pure fable, however – silkworms spin their full cocoon in two to three days, after which silk harvest timing is critical.

Despite all the rush, silk train accidents were surprisingly few. The only serious occurrence was on Sept. 21, 1927, when a car jumped the tracks as the train rounded a bend in B.C.'s Fraser Canyon just east of Hope. Two or three cars followed it, sending silk bales tumbling into the river. There were no deaths and the cargo was salvaged.

The first shipment of raw silk arrived at the port of Vancouver soon after the last spike of the cross-Canada ribbon of steel was driven. Those 65 bales arrived on the afternoon of June 13, 1887, aboard the 3,600-ton *Abyssinia* from Hong Kong, along with mail and 80 Chinese steerage passengers. When Canadian Pacific's fast Empress ships entered service, with their side ports for speedy unloading, Vancouver was vaulted into a leading silk port.

On Oct. 2, 1902, the *Daily Province* reported the steamship *Tartar* was due to arrive with 539 tons, or 2,156 bales, of raw silk – worth $1.5 million. Just six days later the newspaper ran the headline "Large Cargo of Raw Silk," reporting that the *Empress of Japan* was due in with $1.6 million worth. On Oct. 25 it reported: "Vancouver, the silk port of North America: Over four and a half million dollars worth of raw silk will be received within thirty days," making October 1902 the highest value of silk shipping to date. In 1919, a CPR bulletin stated, "All records for silk handling were broken with the arrival from the Orient of the Canadian Pacific Steamship *Empress of Asia* … 10,000 bales of raw silk … valued at $8,500,000 …. "

The pace accelerated, and CP with its fleet of trans-Pacific steamships maintained domination. Shortly after its full formation in 1923, Canadian National entered the fray with its first silk run in July 1925. CN made silk top priority too: their best time of 83 hours 56 minutes was almost a day faster than their transcontinental passenger train. But CN lacked the ocean shipping advantage, relying on the British Blue Funnel Line or Japanese ships to bring the raw product from the Orient.

With two railroads putting silk traffic ahead of every other shipment, business boomed in the 1920s, and the profits rolled in. But 1929 was tumultuous – silk shipments peaked, then came Black Friday in October, when stocks plummeted and the world fell into depression. Consumer demand flagged; luxury items such as silk were soon out of reach for most. Prices crashed – by 1934, raw silk was $1.27 a pound, down from $6.50 a decade earlier. That precipitated a tumble in insurance rates, so speed became less of a priority and soon Japan was shipping silk in its own vessels through the Panama Canal, which had opened in 1914.

The change was rapid: in 1928, 94 percent of all silk from the Orient to New York had crossed North America by train; just 6 percent went through the canal. Then, according to the B.C. Historical Quarterly of 1948, the Nippon Yusen Kaisha Steamship Line of Japan started Panama service in 1929. Results for the railways were disastrous: by 1931, their share had dropped to just 40 percent; ships through the Panama handled the rest.

The ships wooed business by dropping their freight rates to $6 a ton, $3 less than the railways charged. CN Traffic Executive Officers held a series of meetings to look at the impact of matching the Panama shippers' rates. Alas, the numbers were telling: based on 1929 silk tonnage, the railway would lose $211,902. Nevertheless, the reductions were made in 1931, but proved ineffective. Three years later they were back at $9.

CP stopped running single-purpose silk trains in 1933, instead hitching two or three silk cars onto their regular trans-Canada passenger runs. Trips for both railways continued sporadically until the late 1930s, and by 1940 CN shipped just 504 bales. War with Japan was the final blow, killing all trade between the two countries. As well, the U.S. government ordered all silk futures trading and production to cease as demand for silk changed from fashion runways to airfield runways – silk was used to make the parachutes on the backs of aircrew members.

But the silk trains have their legacy. "It did teach us how to keep things fluid, which is what we're still trying to do today," says Hanna. "But now it's not a question of insurance or perishability, it's just-in-time delivery for Wal-Mart and the Bay and Zellers and Canadian Tire. It still comes by the shipload from the Orient and we're still trying to get it across the country as quickly as possible. What we learned from silk trains is that you've just got to keep it moving."

Today, CPR's last remaining silk car of 46 built sits forlornly in CPR's Ogden Shops in southeast Calgary, just a few kilometres south of where Mary Lynas and her friends played. "But it's not in the shape of a silk car any more," says Hanna. "It survived because we first converted some of [the silk cars] into mail express cars and then in the '60s we took five of them and converted them into robot cars that took radio signals from the head end to tell the mid-train power what to do." This one survived because it was converted to carry an experimental steam generator as a novel way to kill weeds along rights of way in B.C. "This ex-steam generator, ex-robot, ex-express, ex-silk car is the only one left."

Graham Chandler is a Calgary-based writer with a PhD in archaeology.

The Silk Industry

Silk production developed more as an art than an industry. The process of harvesting silk was kept secret for almost 3,000 years. In time, silk production reached Europe, with England taking the lead in the 18th century, owing to innovations in textile manufacturing. Today, sericulture (the raising of silkworms) is widely practiced in China, Japan and Korea, with smaller harvests coming from Russia and other countries.

A silkworm moth lays about 500 minuscule eggs. One ounce of eggs yields 30,000 worms, which produce 12 pounds of raw silk. It's a finicky business: moths must be prevented from hatching prematurely, their diet perfected and the temperature kept just right.

Once eggs hatch, thousands of silkworms gorge on mulberry leaves, then enter the cocoon stage. In a process called "reeling," the cocoons are loosened and unwound to produce tightly woven filaments, which can then be spooled. Finally, the silk threads are woven into cloth.

The Depression hurt the silk trade and the silk industry dwindled as items such as silk stockings were viewed as extravagances. (Many North American women stocked up on stockings as relations with Japan deteriorated.)

Japan began sending silk on ships through the Panama Canal. Continued price increases spurred the development of synthetics. World War II exacerbated silk's downward spiral.

Today, synthetic silks (rayon) pervade the market. Still, production of silk has doubled in 30 years. Although it represents a minute percentage of the global textile fibre market, silk is still a multi-billion dollar world trade item. China leads the world's production. And with more processing into fabric done closer to where silk is grown, far less raw silk is shipped across seas.

Et Cetera

Silk Trains: The Romance of Canadian Silk Trains, or "the Silks" by Bernard Webber. The Word Works Publications, Kelowna, 1993.