The Development of Canada's Pacific Gateway in the Age of Steam Globalization 1871-1939

Jan Drent

The completion of the Canadian Pacific Railway in 1886 made British Columbia's coast Canada's Pacific Gateway. Meanwhile, global trade boomed and growing marine traffic was supported by the systematic charting of the intricately indented British Columbia coastline, improved port infrastructure, and the creation of ship repair facilities. The opening of the Panama Canal in 1914 also resulted in a major boost to the Pacific Gateway. Vancouver became the dominant BC port and competed with eastern Canada for exports. This paper examines the main traffic flows through the Pacific Gateway and the development of its ports between 1871 and the start of the Second World War.

L'achèvement du chemin de fer Canadien Pacifique en 1886 a fait de la côte de la Colombie-Britannique la porte d'entrée canadienne du Pacifique. En même temps, le commerce mondial était en plein essor et l'augmentation de la circulation maritime était appuyée par la cartographie systématique de la côte découpée de la Colombie-Britannique, l'amélioration des infrastructures portuaires et la création d'installations de réparation de navires. L'ouverture du canal de Panama en 1914 a également donné un sérieux coup de pouce à la porte d'entrée du Pacifique. Vancouver est devenue le port le plus important de la Colombie-Britannique, faisant concurrence à l'est du Canada pour les exportations. Le présent article analyse les principaux courants de circulation dans la porte d'entrée du Pacifique et le développement de ses ports entre 1871 et le début de la Seconde Guerre mondiale.

When British Columbia joined Confederation in 1871 international investments and the transformative impact of steam power were creating a global economy. Seaborne world trade climbed steeply from 20 to 140 million tons

The Northern Mariner / Le marin du nord **31, no. 4 (Winter 2021), 365-386**

between 1840 and 1887.[1] Shipping links already tied British Columbia to the burgeoning US West Coast and other growing economies on the Pacific, and with distant Britain; access to Canada was limited by difficult terrain. The completion of a transcontinental railway in 1886, a key promise of Confederation, would create a Pacific "transportation gateway" for Canada, a node where freight could be transferred between transport providers.[2] The importance of the Pacific Gateway in Canada's overseas trade was enhanced in 1914 by the Panama Canal which shrank distances to markets. This paper describes the main cargo flows and port development on the West Coast between 1871 and 1939.

The changes that would facilitate British Columbia's connections to the burgeoning global trading system were well underway in 1871. Steam power was gradually replacing sail as compound marine engines widely introduced in the 1860s required less hull space and consumed less coal.[3] At the same time, new iron and then steel sailing ships built in the last quarter of the nineteenth century had hull forms optimised to carry more cargo than their predecessors and labour-saving machinery and improved rigs that required smaller crews. As a result, sail power transported a significant portion of BC bulk exports until the Great War.[4] Steamships combined the advantages of increased productivity (more voyages in a given period) and increasing carrying capacity. By the start of the twentieth century the number of scheduled liner services linking BC with webs of other ports was rising.

Improved communications through underwater cables and telegraph lines were a key aspect of trade globalization that enabled merchants and shippers to exchange trading information and to receive commercial intelligence and news from distant areas. A telegraph line connected New Westminster on the British Columbia mainland in 1865 to the transcontinental cable across the United States completed four years earlier. It was extended across to Victoria in 1866. Coincidentally, the first successful cable across the Atlantic was laid in 1865.

Measures to Facilitate Shipping

The practice of coastal navigation and the resources available to navigators were improved substantially during the nineteenth century. Advancements included significantly better compasses, logs to measure speed accurately, reliable tidal information, and more detailed charts accompanied by the publication of coastal sailing directions. The Admiralty initiated a series of hydrographic surveys by the Royal Navy along the coasts of what became British Columbia in 1846. These improved the accuracy of Captain Vancouver's "grand chart" of 1794 which had combined his own surveys with reports from traders. Over a thirteen-year period starting in 1857, Captains Henry Richards and Daniel Pender systematically charted the extensive BC coastlines. When British Columbia joined

---

1 Martin Stopford, *Maritime Economics, Third Edition* (London: Routledge, 2009), 23.

2 The railway reached tidewater in Port Moody in 1886 and Granville, which became Vancouver, in 1887.

3 Stopford, *Maritime Economics*, 26.

4 Gerald S. Graham, "The Ascendancy of the Sailing Ship 1850-85," *Economic History Review* 9, no. 1 (1965): 85.

Confederation, the Canadian government became responsible for hydrography in its waters. The grounding of the Canadian Pacific liner *Parthia* in Vancouver harbour in 1890 triggered the first Canadian survey of Burrard Inlet. By the end of the century increasing traffic by larger and faster ships had highlighted the need for more modern charts and tidal data. Due to these requirements, the survey ship HMS *Egeria* worked out of Esquimalt from 1898 to 1910. Meanwhile, Canadian hydrographers returned to the coast in 1906. The survey ship *Lillooet* was built in Esquimalt two years later and the first Canadian chart of the West Coast was published. The wooden schooner *Naden* built in 1913 in North Vancouver was active surveying the following summer. Coastal surveys resumed after the Great War and by the 1930s were being facilitated using echo sounders, gyro compasses, and aerial photography.[5]

The first aids to navigation in British Columbia's waters were created in the wake of an influx of shipping bringing prospectors to the Fraser River Gold Rush of 1858. A buoyage system was established in the river the following year. The colonial governor, James Douglas, asked hydrographer Captain Henry Richards for recommendations. These resulted in the completion of two lighthouses in the Victoria area in 1860 and the stationing of a light vessel at Sand Heads off the mouth of the Fraser River. After 1871 the federal Department of Marine and Fisheries built a series of lighthouses on the coast, particularly between 1880 and 1919 when the dynamic Colonel William Anderson was chief engineer of the department.[6]

The use of quarantine (originally 40 days) to control the arrival of travellers from diseased locations was a standard nineteenth century public health measure. Facilities were created at entry ports where travellers thought to have been exposed would spend their quarantine. Starting in 1872, ships arriving in BC waters had to be granted "pratique" before entering a harbour and were cleared for communicable diseases at Victoria by a medical officer. The Canadian government appointed a quarantine officer for the west coast in 1883. He operated out of Victoria at first, but a quarantine station opened at Albert Head in its approaches in 1886.[7] Because it lacked a wharf arriving ships were visited by launch. The Albert Head station had limited quarantine accommodation. It was replaced in 1893 by a new facility at William Head further to seaward with good wharfage and accommodation. All ships inbound for BC ports were required to report to William Head for inspection by a health officer.[8] They berthed alongside for inspection and, when necessary, fumigation. The station functioned until 1957, when international health procedures, better drugs, and the clearance of incoming ships by radio made

---

5 See R.W. Sandilands, *The History of Hydrographic Surveying in British Columbia* (Victoria: Canadian Hydrographic Service, 1965); Andrew S. Cook, "The Publication of British Admiralty Charts for British Columbia in the Nineteenth Century," in *Charting Northern* Waters, ed. William Glover (McGill-Queens University Press, 2004), 50-73; William Glover, "The Challenge of Navigation to Hydrography on the British Columbia Coast, 1850-1930," *The Northern Mariner* VI, no. 4 (1996): 1-16.

6 See Clay Evans, "All but Forgotten: Early Measures for Maritime Safety on Canada's West Coast," in this issue of *The Northern Mariner*.

7 Peter Johnson, *Quarantined Life and Death at William Head Station, 1872-1959* (Victoria: Heritage House, 2013), 53.

8 *The British Columbia Pilot, 3rd edition* (London: Hydrographic Office, Admiralty, 1905), 3.

it redundant. Statistics for the twelve years from 1902 to 1914, a period when the main concern was smallpox, demonstrate the scale of operation. The total number of ships inspected was 2,700 but the average detained for quarantine was only two per year.[9]

Marine pilotage has a long tradition of operating as a guild. Local pilots had been guiding ships into Victoria harbour and up the Fraser since the 1858 goldrush. The colonial legislature created boards to license pilots in 1864, but in practice the ports of Victoria, New Westminster, and Burrard Inlet organized their own systems for appointing pilots. The federal government created a pilotage district for the entire province in 1875. Within a few years the coast had been divided into separate districts. Pilotage was compulsory and vessels moving between districts had to engage pilots for each district. After a Royal Commission in 1919, all districts except for the Fraser River were merged and pilots were now to board off Victoria, Sand Heads for the Fraser, and off Prince Rupert. Other findings by the commission, and in particular its proposal to reduce fees by paying pilots salaries for less than they were earning, were controversial, and not accepted by the shipping industry. The government abolished the BC Pilotage District and compulsory pilotage. Pilots organized themselves into three different groups and several companies like CP Ocean Ships and Blue Funnel had their own pilots. After a ten-year hiatus, the pilotage district was reinstituted, and tighter regulations instituted following a second Royal Commission in 1929.[10]

Principal Cargo Flows

Seaborne trade has always dominated British Columbia's export earnings. Its origins lay in the efforts of the Hudson's Bay Company (HBC) to create a diverse economy on the West Coast to complement the declining fur trade. The Hawaiian (Sandwich) Islands had been a logical stop in any case for sailing ships bringing supplies from Britain to replenish with water and fresh produce because they went far out into the Pacific to catch the Westerlies in that area. They loaded sugar, tobacco, molasses, and salt for the northwest coast. HBC ships returning to Britain carried lumber and salted salmon to Hawaii out of the Columbia River starting in the 1830s. They were supplemented by company ships employed exclusively in this northwest Pacific trade. The shipping point moved north when the company had to move its centre of operations to Vancouver Island a decade later.[11]

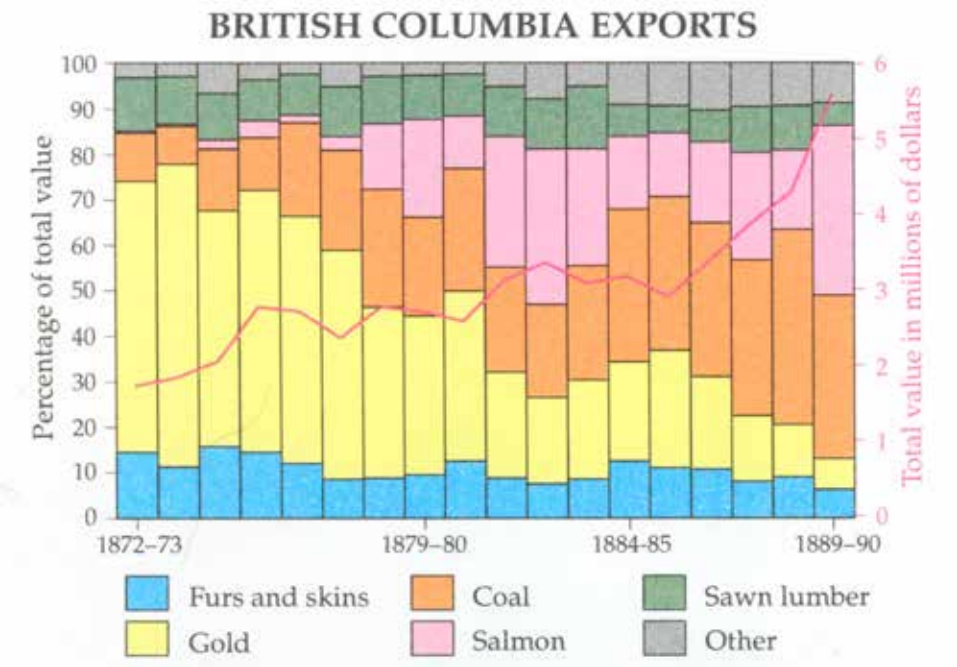
In the period after 1871, the principal British Columbia exports ranked by value were gold, coal, canned salmon, sawn lumber, and furs and skins. Gold, shipped mostly to San Francisco, represented almost sixty percent in value of shipments in 1871, but its portion in overall exports declined while the value of other goods

---

[9] Linda Ambrose, "Quarantine in Question: The 1913 Investigation at William Head, B.C.," *Canadian Bulletin of Medical History* 22, no. 1 (2005): 143.

[10] David Hill-Turner, *Business in Great Waters: A Brief History of Pilotage in British Columbia Waters* (Vancouver: World Ship Society of BC, 1987), 19-34; Hill Wilson, *The Marine Pilots of Canada's West Coast The First Century 1858-1958* (Victoria: self published, 2005), 28-30, 40-43.

[11] The development of this trade is covered extensively in Ricard S. Mackie, *Trading Beyond the Mountains: The British Fur Trade on the Pacific 1793-1843* (Vancouver: University of British Columbia Press, 1997).



British Columbia's waterborne exports, 1872-1890. (Plate 36 in *Historical Atlas of Canada Volume II*. Reprinted with permission of the publisher.)[12]

climbed from under $2 million in 1871 to $17 million in 1900.[13] Between the 1850s and 1900, a financial nexus between San Francisco and Victoria played a key role in British Columbia's maritime trade and as a major source of capital for the province's industries. San Francisco's burgeoning population was already 150,000 by 1871 and would double in twenty years.

Coal was a core factor driving 19th century global industrialization and trade; it powered railways, factories, heating plants, a wide variety of other machinery, and ships. The mining of coal at the northern end of Vancouver Island had been started by the HBC around 1846. A contract in 1848 to supply coal for a fledgling American steamship ship service from Panama to Astoria prompted increased production. This location was not a success because its coal proved to be of poor quality and coal ballast in ships coming from Britain was catering to the still-limited market in California.[14] Mining then began further south on the island in

---

[12] Robert M. Galois and R. Cole Harris, "The Gold Rushes in British Columbia, 1858-1881," in *Historical Atlas of Canada Volume II: The Land Transformed,* ed. R. Louis Gentilcore (Toronto: University of Toronto Press, 1993).

[13] Jean Barman, *The West Beyond the West* (Toronto: University of Toronto Press, 1991), 125.

[14] The mine at Fort Rupert did not produce enough coal to meet the American contract; eventually an estimated 10,000 tons of coal were produced 1846-1854. Some had been shipped to San Francisco and some had been supplied to the Royal Navy. Barry Gough, "Fort Rupert, Its Coal and Its Spar Trade," in *The Company on the Coast*, ed. E. Norcross (Nanaimo: Nanaimo Historical Society, 1983), 37; G.W. Taylor, *Mining The History of Mining in British Columbia* (Saanichton BC and

1852 in what became Nanaimo. This new operation attracted capital from London. By the mid-1860s coal was being shipped steadily to San Francisco. In 1869, James Dunsmuir, originally a miner employed by the HBC, brought a new seam he had discovered at Wellington outside Nanaimo into production. A shipping wharf was built at Departure Bay north of Nanaimo. When new mines opened around Cumberland, 130km north of Nanaimo, a major loading terminal was created at Union Bay in 1888.[15] Additional coaling wharves were later built at Ladysmith and Boat Harbour. Scows transported coal from island loading docks to Vancouver and Victoria. Deepsea freighters outbound from Vancouver also called at Union Bay to fill their bunkers. San Francisco buyers arranged the coal shipping contracts.[16] Coal was carried to California in a combination mostly of sailing vessels (seventeen were involved as early as 1865, some which made up to three voyages) and steam colliers.[17] Steam tugs typically towed the sail colliers to and from Nanaimo and the entrance to the Strait of Juan de Fuca. *Revere*, a representative American barque, made almost thirty voyages shuttling between Nanaimo and San Francisco between 1856 and 1888, and bringing general merchandise or sand ballast north.[18]

Coal production on Vancouver Island rose steeply after 1874 to meet rising demands in California for an expanding network of railways and as a heating fuel. Shipments, climbing from 56,038 tons in 1874 to their peak of 906,215 in 1900, represented roughly one-third the value of total exports from British Columbia during those years. Most shipments went to San Francisco, while other destinations were Los Angeles (Southern Pacific Railway) and San Diego. Sporadic shipments also went to Mexico, the Hawaiian Islands, Alaska, Hong Kong, China, Japan, and Siberia. Vancouver Island mines provided more than 40 percent of California coal imports in 1900 despite competing with coalfields in Puget Sound that benefited from high protective duties. After the turn of the century, California switched increasingly to using fuel from its local oilfields and its market for coal declined. By 1920 the portion of Vancouver Island coal being exported to California had shrunk to twenty percent from seventy-five percent just twenty years earlier.[19] At the same time, demand in BC was rising due to its rapidly growing population and industrialization; coal production on the island peaked in 1922. Exports declined to 100,000 tons per year in the late twenties, and to 41,000 in 1939.

Seattle: Hancock House Publishing, 1978), 73.

[15] The last sailing ship to load a coal cargo was the barque *Pamir* in August 1946. R.E. Wells, *The Vancouver Voyages of the Barque Pamir* (Victoria: Sono Nis Press, 2005), 13.

[16] Robert Dunsmuir had become BC's first major capitalist and his son Alexander relocated to San Francisco to handle company interests.

[17] E.W. Wright (ed.), *Lewis & Dryden's Marine History of the Pacific Northwest* (Portland: Lewis & Dryden, 1895), 141.

[18] *Revere*'s round voyages took two and a half months. She also made several with coal to Honolulu; others took lumber from Puget Sound to San Francisco. *Revere*'s length was 48 m (157 feet), 750 tons. Ship rig when built in Massachusetts in 1849, changed to barque in 1875 to reduce crew. The ship traded on the West Coast between 1865-81. *Revere* is noteworthy because the ship's first master was the patent holder in 1854 for the double topsail, a significant labour improvement that became standard. Madeleine Rowse Glenn, *The Voyage of the Ship Revere 1849-1883* (Palo Alto: Associates of the National Maritime Museum and Glencannon Press,1993), 85-111.

[19] Statistics and destinations from Denis Kerfoot, *Port of British Columbia* (Vancouver: Tantalus Research, 1966), 63-68 and 118.

Canned salmon became an important export in the 1880s whose value roughly matched that of coal by 1890.[20] The HBC had started exporting salmon packed with salt in barrels manufactured in Fort Langley on the Fraser River to Hawaii, and later Britain, in the 1830s. Knowledge about hermetically sealing salmon in cans was brought from New Brunswick in 1867. Canneries multiplied rapidly on the Fraser below New Westminster, and later spread up the coastline to the mouths of the Skeena and Stikine Rivers. British Columbia producers were able to sell to markets that had been developed a decade earlier by Columbia River canneries. The first shipments from the Fraser went to San Francisco, and, after 1889, to Britain.[21] The canned product, packed in wooden boxes, was brought to Victoria by paddlewheel steamers for transshipment, but by 1895 as many as fourteen sailing ships also loaded at Steveston near the mouth of the Fraser. After the turn of the century there was a rapid transition to using steamships because of their productivity advantage. In 1903 six steamships and three sailing vessels were carrying salmon, but two years later sailing ships were absent.[22] Capital for the Fraser canneries was for several years largely provided by Victoria "commission agents" who handled imports and exports and were able to access funds from banks in London and San Francisco. By 1900, eastern Canadian banks became involved in the industry, which underwent a series of consolidations of separate canneries into two monopolistic companies by 1902.[23] This transition in financial dominance was one of the many factors in Vancouver displacing Victoria as the province's economic hub.[24]

Sawn lumber ranked fourth in value among British Columbia export cargoes in the first three decades after 1871 and would become increasingly significant after the First World War when the Panama Canal opened new markets. Small quantities of Vancouver Island lumber had been produced before 1850. The California Gold Rush of 1848 created an insatiable new market. British Columbia lumber was, however, subject to twenty percent American import tariffs.[25] The California requirements would be supplied largely by immense lumbering industries developed in Oregon and Puget Sound starting in 1847-49 and in the 1850s in the Humboldt Bay area of northern California. US lumber production dwarfed

---

[20] Geoffrey J Matthews and Byron Moldofsky, Plate 36, in *Historical Atlas of Canada: Volume II: The Land Transformed, 1800-1891,* ed. R. Louis Gentilcore, Don Measner, and Ronald H Walder (Toronto: University of Toronto Press, 1993).

[21] The first shipment was in the HBC barque *Titania* which had made a fast passage from Britain of only 105 days. *Titania* made annual voyage between Britain and BC 1886-92. W.B.M. Hick, *Hay's Orphan: The Story of the Port of Prince Rupert* (Prince Rupert Port Authority, 2003), 90; and S.C. Heal, *Inbound to Vancouver* (Vancouver: Cordillera Books, 2006), 71.

[22] Cicely Lyons, *Salmon: Our Heritage* (Vancouver: British Columbia Packers, 1969), 200-201.

[23] Robert A.J. McDonald, "Victoria, Vancouver and the Economic Development of British Columbia. 1886-1914," *British Columbia: Historical Readings*, eds. Peter Ward and Robert McDonald (Vancouver: Douglas & McIntyre, 1981), 389.

[24] Robert A.J. McDonald, "Urban Growth," in *British Columbia: Historical Readings*, 391.

[25] Eighteen of the nineteen separate sailings that cleared from Sooke on southern Vancouver Island and Victoria with lumber cargoes in 1853 were to San Francisco. W. Kaye Lamb, "Early Lumbering on Vancouver Island: Part I: 1844-1855," *The British Columbia Historical Quarterly* 2 (January 1938): 50-51. Lamb notes that the nineteenth sailing (for Valparaiso) was the first Vancouver Island lumber shipped to South America.

the BC industry: for example, Douglas Fir production in California, Oregon, and Washington was 2.3 million board feet in 1898 compared with 200,000 in BC.[26]

Still, the province's mills were able to sell to other developing Pacific economies. The Australian "Long Economic Boom" began in the 1860s. The country's population more than tripled from 450,000 in 1851 to 1.7 million in twenty years creating a large requirement for building materials that was increasingly met by BC starting in 1865.[27] China also became a significant market for BC lumber after 1865. Most shipments went to Shanghai, China's most northerly ice-free port located in a large cotton-growing and manufacturing area. Its rise after the Treaty Port status imposed by the British in 1842 was spectacular: its population quadrupled in thirty years to become one million in 1890 as western-owned steamboats exploited its river links with a vast hinterland and connected it with coastal and ocean steamships.[28] In 1891, the British Columbia Timber Inspector described Chile and Peru as "the best markets the exporting mills ever had."[29] Both countries were tapping into global markets to export raw materials – Guano from Peru, copper from Chile, and nitrate from both countries. Neither country had ready access on their arid Pacific coasts for timber at a time of economic growth. Valparaiso had benefited initially as a stopping point for sailing ships bound both ways on the long voyage around Cape Horn. By the mid-19th century, it had become the most important trading centre on South America's West Coast, and the unloading port for many lumber shipments from British Columbia. In 1871, sixty percent of the value of export lumber from Burrard Inlet went to Chile and Peru, the destination of half of the forty ships outbound that year.[30] Commerce with Hawaii (the Sandwich Islands) had been developed by the HBC starting in the 1820s. Rice, molasses, and sugar had been traded for BC salted salmon. By the 1860s sugar, mainly for export to a rapidly growing US market was being produced on an industrial scale, creating a building boom and destination for BC lumber.[31]

The first consistently successful export sawmills in BC were on Burrard Inlet: Moodyville on its north side and the Hastings Mill on the south shore. They represented the only important lumber exporting centre in BC during the 20 years after 1865 – a period when waterborne exports took almost ninety percent of provincial production – and attracted San Francisco capital for expansion. By 1870 they were shipping lumber, shingles, and spars to Britain, Australia,

---

[26] Thomas R. Cox, *Mills and Markets: A History of the Pacific Coast Lumber Industry to 1900* (Seattle: University of Washington Press, 1974), 301.

[27] Joseph C. Lawrence, *Markets and Capital: A History of the Lumber Industry of British Columbia (1773-1952)* (Master's thesis, University of British Columbia, 1957), 12. Australian builders adopted the "Balloon" framing system for construction which did not require skilled labour. Developed in the US in the 1830s it was being used in North America.

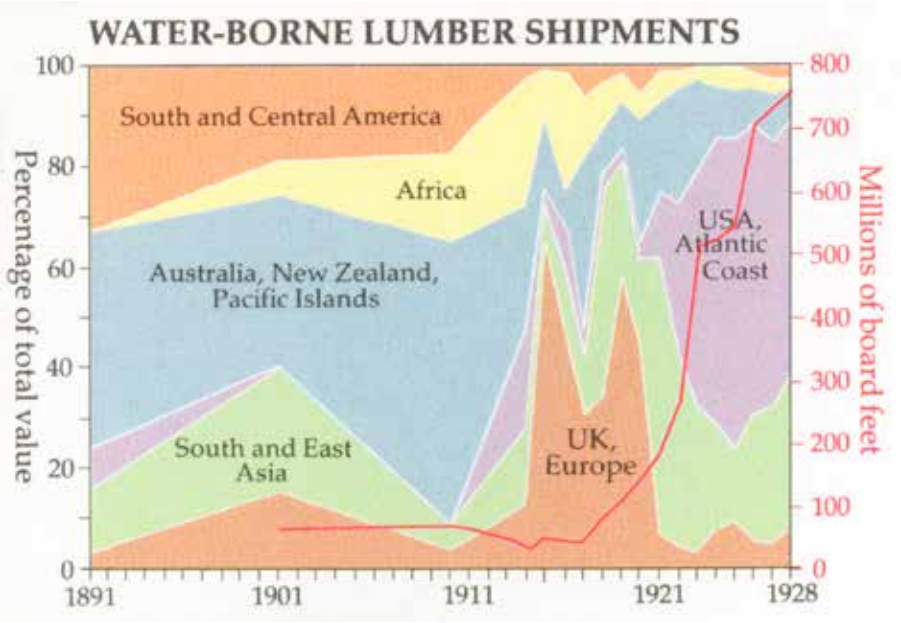
[28] John Darwin, *Unlocking the World Port Cities and Globalization in the Age of Steam 1830-1930* (London: Allen Lane, 2020), 283-289.

[29] Fred Braches, "Chile, Peru, and the Early Lumber Exports of British Columbia," *British Columbia History* 42, no. 2 (April 2009): 2.

[30] Braches, "Chile, Peru, and the Early Lumber Exports of British Columbia," 2-9.

[31] Lawrence, *Markets and Capital*, 13.

China, Mexico, Peru, Hawaii, and Tahiti.[32] The coming of the Canadian Pacific (CP) Railway to Vancouver in 1887 (the terminal was just west of Hastings Mill) eventually opened markets for coastal forest products as the interior was developed. Growing populations – British Columbia's went from 98,000 in 1891 to 392,000 in 1911, while the prairie provinces expanded from 252,000 to 1.3 million over the same twenty years – created a voracious new continental market for coastal lumber. This caused a dramatic shift after 1900 from offshore to inland shipments. While lumber production on the coast grew exponentially, the proportion being exported by water declined to less than a third. Vancouver's sawmills in 1911 were described by historian Robert A.J. McDonald as "the geographic centre" that year of what had become the province's largest industry.[33] Ships loaded directly at Hastings Mill, which had been joined by sawmills concentrated around False Creek in the city core.[34] Fifty-two percent of waterborne lumber exports in 1900 went out of Vancouver; forty-five percent from Chemainus on Vancouver Island, and three percent from New Westminster. As shown in the diagram, the largest portion between 1891 and the Great War was going to Australia, New Zealand, and the Hawaiian and other Pacific Islands.



Waterborne lumber shipments, 1891-1928. (Plate 29 in *Historical Atlas of Canada Vol III*. Reprinted with permission of the publisher.)[35]

---

[32] Cox, *Mills and Markets*, 134-5; Kerfoot, *Port of British* Columbia, 27, Lawrence, *Markets and Capital*, 29.

[33] Robert A.J. McDonald, *Making Vancouver 1864-1915* (Vancouver: UBC Press, 1996), 94.

[34] Hastings Mill would not be dismantled until 1928. The location is now part of the Centennial Terminals ("Centerm") container facility.

[35] Robert Galois, Plate 21 "British Columbia Resources," in *Historical Atlas of Canada, Volume III: Addressing the Twentieth Century, 1891*-1961, ed. Deryck W. Holdsworth and Donald Kerr (Toronto: University of Toronto Press, 1990).

The "total shipments" line on the graph shows how BC waterborne exports remained steady between 1900 and 1916. Total lumber shipments from the US west coast states and British Columbia to other Pacific economies grew five times between 1894 and 1914, but the province's share fell from thirty to eight percent.[36] Sailing ships were still dominant as lumber carriers until the Panama Canal transformed ocean connections. Comprehensive statistics for BC are not readily available, but in 1893 its lumber exports were carried in nearly 60 sailing vessels.[37] This lingering preponderance of sail over steam was matched in Puget Sound where sail still powered ninety percent of the vessels transporting lumber in 1903.[38] Loading lumber onto a sailing ship was a laborious process that could take weeks. "Deals" (timber cut into standard lengths) were passed through holes cut in the bow or stern directly into their unencumbered hulls (unlike steamships, sailing vessels did not have bulkheads separating holds) or hauled over the poop on a planked skid and then into the hold.[39]

Before the Great War, San Francisco brokers had handled roughly sixty-eight percent of lumber shipments from BC. The end to the building boom on the prairies along with a slump in sales during the economic downturn of 1912-1913 shifted local attention to the potential for sales to Britain. British Columbia, however, had no commercial arrangement to sell timber directly to Britain and the industry's problems were exacerbated by a dearth of shipping once the war started. Pressured by the activist BC government of Premier Richard McBride and lumber capitalists the federal government sent H.R. MacMillan, the first BC Chief Forester, on a productive sixteen-month tour starting in 1915 to investigate possibilities for marketing Canadian lumber in Britain, Europe, and Asia. He confirmed that better promotion was required and was involved in arranging for British wartime timber purchases to be made through the BC government instead of through US brokers.[40] After resigning in 1916 from government and managing a sawmill, he started the H.R. MacMillan Export Company and would remain a dominant figure in the industry for the next 50 years. Meanwhile, several large mills formed a marketing organization that became Seaboard Lumber Sales. Two major British Columbia firms were created in the war's aftermath to draw the marketing and transport of lumber away from American interests. Both firms subsequently formed their own

---

36 Kerfoot, *Port of British Columbia*, 43-44.

37 Lewis and Dryden, *Lewis & Dryden's Marine History of the Pacific Northwest*, 410. This trade was carried mainly in aging square riggers in contrast to the US Pacific northwest where locally-built lumber schooners dominated. Auxiliary lumber schooners would not be built in BC until during the Great War.

38 Cox, *Mills and Markets*, 293. H.R. MacMillan managed the busy sawmill at Chemainus in Vancouver Island for 10 months starting in June 1916. He later recorded that over this period there were usually one to five ships alongside the wharf but only a single steamer loaded, taking timber to China. "Reminiscence" by H.R. MacMillan, in W.H. Olsen, *Water Over the Wheel* (Chemainus: Chemainus Valley Historical Society, 1963), 164.

39 S.C. Heal, *The Maple Leaf Afloat Volume II* (Vancouver: Cordillera Publishing, 1993), 142. Many of the sailing ships had small wood-fired "donkey boilers" to provide power for loading.

40 Donald MacKay, *Empire of Wood* (Vancouver: Douglas & McIntyre, 1982), 36-39. The dynamic MacMillan was well known in Ottawa where he had served in the Forestry Branch. During his tour he arranged lumber sales in France and South Africa and learned about potential contracts in other countries, including railway ties for India.

shipping arms: The Canadian Transport Company was created by the MacMillan Export Company in 1924, while Seaboard established a marine arm in 1931 eventually known as Seaboard Shipping Company.[41] Both chartered and, in the long run, also owned ships and operated liner services.[42]

The Panama Canal, opened in 1914, shortened ocean passage times to Europe by almost five weeks. Easier access to the Atlantic opened an enormous new market for lumber on both the US eastern seaboard and the St. Lawrence River. US carriers enjoyed a monopoly in the American intercoastal trade because the Jones Act of 1920 barred foreign ships. Ships under British and European registries, however, transported British Columbia lumber to the East Coast at rates two-thirds those being charged by US carriers to transport American lumber, facilitating a boom in sales of Canadian timber.[43]

Subsidized shipping played a role in the 1920s and early 1930s. The Canadian Government Merchant Marine (CGMM) was created by the federal government in 1918 to carry Canadian exports in ships built in Canada.[44] It was not a long-term commercial success, but its transpacific service starting in 1920 from Vancouver, Victoria, and Prince Rupert, and an intercoastal run (1924-32) helped to establish trading patterns. Ships of the Canadian Robert Dollar Line of Vancouver, subsequently the Canadian American Shipping Company, and the John Coughlan Company of Vancouver transported lumber to Japan and China between 1924 and 1932 and were also initially subsidized.[45] At the end of the 1920s, H.R. MacMillan lobbied successfully to have the shipping of lumber to Australia subsidized. This resulted in the British Columbia-Australia Shipping Company.[46] The American Smoot-Hawley Tariff of 1930, followed by further duties in 1932, shrank Canadian lumber exports to the East Coast. However, imperial preference tariffs of ten percent enabled BC to increase lumber shipments to Britain and Australia and edge out US competition. Great Britain also imposed an embargo on imports of lumber from the USSR. By 1935, the province was supplying eighty-three percent of the lumber shipped from the Pacific Northwest to the UK, and ninety-two percent of the flow to Australia.[47]

Pulp and paper mills had been established on the BC coast starting in 1909. They promised more efficient use of resources and new export markets. By 1918,

---

41 Richard Hallock, *Pick Up Sticks: A History of the Intercoastal Lumber Trade* (Vancouver: Cordillera, 1995) 390-394. By 1936, Canadian Transport operated 150 voyages; Seaboard ran 46 that year but was up to 140 in 1939.

42 MacKay, *Empire of Wood*, 104; E.G. Perrault, *Wood and Water* (Vancouver: Douglas & McIntyre, 1985), 107-8. The Canadian Transport Company would grow to have as many as 51 ships under charter between the wars. Lawrence, *Markets and Capital*, 51. The vessels chartered by both companies were overwhelmingly under non-Canadian registries.

43 Lawrence, *Markets and Capital*, 132. Shipments by water to the US in 1920-25 grew from 4 to 326 million board feet.

44 Kenneth S. Mackenzie, "C.C. Ballantyne and the Canadian Government Merchant Marine, 1917-1921," *The Northern Mariner* II, no. 1 (January 1992): 1-13. Operation of the 67 CGMM ships of four standard designs was taken over by Canadian National Railways in 1928.

45 Lawrence, *Markets and Capital*, 118*;* Heal, *Inbound*, 120--123.

46 Lawrence, *Markets and Capital*, 118. The service was operated by the Canadian Transport Company.

47 Kerfoot, *Port of British Columbia*, 47.

this sector accounted for roughly one-fifth of the value of forestry production.[48] Most pulp and paper shipments went directly by ship from the mills to offshore markets – lesser quantities were barged to Vancouver for shipment east by rail or to be loaded on to freighters.[49] Shipments grew steadily after 1919 but were modest compared with the great post Second World boom.

The second major boost to exports from the Pacific Gateway due to the canal opening was grain. As early as 1905, it had been shipped to countries in the Pacific in limited quantities, transported in sacks to avoid shifting of cargo and to provide adequate ventilation. The federal government completed a grain elevator in Vancouver in 1916. Shipments through the canal were delayed by war but five experimental shiploads of grain in bulk in 1917-1918 demonstrated that the cargoes would not deteriorate in the tropics.[50] The westward shift of grain growing from Manitoba to Alberta and Saskatchewan which by 1929 were producing ninety-three percent of prairie wheat also played a role in boosting exports from the Pacific Coast.[51] Shipments, growing from 56 million bushels in 1924 to 106 in 1932, the peak year, were mostly to Europe, with Britain frequently receiving more than fifty percent of the yearly total. By the 1930s, roughly thirty percent of all Canadian grain exports by water were through the Pacific Gateway. This was a fundamental shift from the traditional routes out of the head of Lake Superior, the St. Lawrence River, and eastern ports coupled with rail shipments to terminals along the Eastern Seaboard of the US. Vancouver, where five additional grain elevators were created in the 1920s handled all but three percent of the massive west coast exports between 1922 and 1932 even though elevators were built in Prince Rupert (1925), Victoria (1928) and New Westminster (1929).[52] Shipments fell starting in 1937 because of a slump in demand and higher ocean freight rates.

The organization of shipping into liner services was an essential part of the global transport network that evolved in the second half of the nineteenth century.[53] Vessels on liner service provided shippers with predictable schedules and an ability to consign cargo to multiple ports. American steamer companies started liner connections between San Francisco, Victoria, and Puget Sound in 1861. Canadian Pacific established the first transpacific liner service in 1887, followed by a connection with Australia, New Zealand, and Pacific Islands five years later by the Canadian Australian Steamship Company.[54] These three early services carried passengers and mail (government mail contracts were financially significant). By the turn of the century, they were followed by freighters in liner service which transported increasing proportions of all cargoes through the Pacific

---

48 Allen Seager, "The Resource Economy," in *The Pacific Province A History of British Columbia*, ed. Hugh J.M. Johnston (Vancouver: Douglas &McIntyre, 1996), 222.

49 Kerfoot, *Port of British Columbia*, 52.

50 W.B.M. Hick, *Canada's Pacific Gateways Realizing the Vision* (Prince Rupert: Prince Rupert Port Authority, 2011), 84.

51 Lawrence, *Markets and Capital*, 119.

52 Kerfoot, *Port of British Columbia*, 25-33.

53 Stopford, *Maritime Economics*, 23.

54 J.H. Hamilton, "The 'All-Red Route' 1893-1953: A History of the Trans-Pacific Mail Service between British Columbia, Australia and New Zealand," *British Columbia Historical Quarterly,* (January-April 1956): 1-127.

Gateway. These cargo liners also carried passengers in the era before air travel. The first liner services from Europe were by British companies coming out via Suez and Japan because the distance by that route was comparable to going around South America.[55] By 1912, twelve shipping lines operated regular services from Vancouver: two (one British, one Japanese) to Japan, China and the Philippines, two (both British) to Australia and New Zealand, four (two British, one Danish, one German) to Europe via the Strait of Magellan, two American companies with runs to California and Mexico, and another US line to New York via South America. One of the British lines around South America and one of the American coastal services offered a cargo link with the Atlantic via the port of Salina Cruz, the western terminal of a railway across Mexico.[56] After the opening of the Panama Canal several European and British companies operated round the world services, mostly from east to west, on lines that included BC ports. The frequency of service was high because the ships involved also called at Seattle and Tacoma and other Puget Sound ports.

Local arrangements were handled by shipping agencies which contracted to arrange customs and other clearances, berthing, cargo handling, tugs, and pilots. They were a development of "commission agents" such as the Victoria and San Francisco firm of Welch and Rithet that had earlier handled shipping. The first identifiable agency in BC was Robert Ward and Company of Victoria which arranged tugs for sailing vessels in the Strait of Juan de Fuca. They were linked to an office in London so that information would arrive about a sailing ship's estimated arrival off Cape Flattery.[57]

The boost to shipping after the end of the Great War due to the opening of the Panama Canal was dramatic.[58] It was reflected in an increase in the number of shipping lines serving Vancouver from twelve in 1920 to forty-nine in 1930, and a jump from ten to 100 deep sea arrivals and departures between January 1920 and January 1930.[59] Waterborne exports increased from 1.2 million tons in 1913 to 1.5 in 1920 and then to 4.6 in 1929-30 and 5.3 in 1938-39.[60] A typical cargo could be bulk wheat in lower holds with lumber in the tween decks and a deck load of lumber, timber, or logs.[61] Import cargoes were highly varied, from manufactured goods to rice and raw materials. Raw silk was an exotic product first brought across the North Pacific by CP liners starting in 1888. Fast freighters of the Blue Funnel and Japanese lines became competitors after the Great War. Ships were unloaded directly into waiting CP or CN "silk trains" which were given priority routing to New York City. By the 1920s, a parallel US route with landings in Seattle and San Francisco handled roughly seventy-five percent of the transpacific shipments. In

---

55 Heal, *Inbound to Vancouver* (Vancouver: Cordillera Books, 2006), 89.

56 R.E. Gosnell, *The Yearbook of British Columbia* (Victoria: Legislative Assembly, 1911), 319-10; Heal, *Inbound*, 34. The voyage from Liverpool via Cape Horn customarily took 75 days; after the canal opened 43. *Harbour and Shipping* (May 1920), 349; (August 1921), 911.

57 Heal, *Inbound*, 13.

58 The canal opened in August 1914 as war broke out. Its impact on world trade was delayed by the conflict.

59 *Harbour and Shipping* (January 1930), 7.

60 Kerfoot, *Port of British Columbia*, 86-88 and 120.

61 Lawrence, *Markets and Capital*, 121.

1927, the best year for shipments through Vancouver, CP, and CN silk trains earned $1.9 million, equivalent to $29 million in 2021. The West Coast trade petered out by the mid-1930s when silk cargoes were increasingly transported to New York City through the Panama Canal in fast Japanese ships.[62] Another specialized trade was the export of Okanagan fruits (particularly apples) to northern Europe. A combined liner service by British and Dutch freighters with refrigerator space started in 1920 and, in the 1930s, a Norwegian line also operated specialized small fast freighters on this run with chilled and limited stowage. Both services also picked up fruits in Puget Sound and California.[63]

Until 1920, import and export cargoes through the Pacific Gateway were roughly balanced by weight. Between the First and Second World Wars, however, the increased grain and lumber trades along with minerals shipments raised the proportion of exports to between seventy and eighty percent of the total tonnage.[64] Victoria had been the leading Gateway port in the first 30 years after Confederation. It was overtaken in marine traffic just before 1900 by Vancouver, the hub of coastal shipping services that connected it with resource-producing feeder ports and whose rail connections were making it BC's main distribution and manufacturing centre. Vancouver's population grew to 100,000 by 1911, compared with Victoria's 32,6000. By that year it dominated overwhelmingly in total cargo handled, 623,023 versus 77,026 tons.

Major Ports

By the 1890s, port facilities were being improved in both Victoria and Vancouver. The cramped and shallow Victoria inner harbour was no longer adequate for larger vessels which handled more cargo. R.P. Rithet, a local importer involved in the sugar trade and a shipowner with strong business links in San Francisco, created a company to develop two wharves on the south side of Shoal Pont near the outer harbour entrance. They were able to handle the new CP Empress liners but were exposed to winds. In Vancouver, CP had built a wharf west of Hastings Mill to handle its ocean shipping in 1886. It incorporated a rail line to create a seamless link from the outset between steam-powered ships and steam-driven trains. It was followed by further piers as traffic grew. When the Americans renewed the construction of the Panama Canal in 1904, harbour improvements were planned in both Victoria and Vancouver in anticipation of its benefits. The federal government completed a new breakwater in Victoria and two new larger outer harbour wharves with cargo sheds at Ogden Point in 1916. The Rithet wharves would become part of the Victoria Machinery Depot yard no. 2 in 1941 – the area now houses the Naval Reserve training and Coast Guard bases. In Vancouver, the First Narrows giving access to Burrard Inlet was proving cramped for the larger ships now in service. *Mastodon*, a large bucket dredge ordered from Scotland worked around the clock six days a week between 1912 and 1917, followed by further dredging in the 1920s to widen the channel to 540 m (1800 feet) from 129 m (400 feet).

---

62 W. Kaye Lamb, *Empress to the Orient* (Vancouver: Vancouver Maritime Museum, 1991), 115; Bernard Webber, *Silk Trains* (Kelowna: Word Work Publications, 1993), 71.

63 Heal, *Inbound*, 155-6; *Harbour and Shipping* (August 1920), 431; (September 1920), 487.

64 Kerfoot, *Port of British Columbia*, 10 and 120.

Extending the channel and removing shoals also decreased the amount of tidal current through the narrows.[65] Wharfage in Vancouver was improved in the 1920s, particularly by the Ballantyne Pier capable of berthing several freighters which had large cargo sheds and a grain handling conveyer.

New Westminster, thirty-five kilometres from the sea, had its beginnings in 1859. The Fraser River Gold Rush the previous year brought a sudden infusion of over 20,000 prospectors, which caused the British government to take responsibility for the mainland area where the HBC had trading rights.[66] It created the colony of New Caledonia. Colonel Richard Moody, in charge of an expedition to suppress an insurrection by American miners, chose a strategic location for the capital just above where the Fraser divides into north and south arms. Named New Westminster later in the year it was soon connected by steamboats with Victoria and the head of navigation further east at Yale. One early riverboat entrepreneur was William Irving who previously had interests in Columbia and Willamette River steamers, and whose son would play a major role in the Pacific Coast Steamship Company. Buoys, pilots, lightships (replaced by a fixed light structure 1880-1913), and tugs enabled ocean going sailing ships to reach New Westminster in the late 1860s. Although a tidewater location on Burrard Inlet further west was chosen as the western terminus of the CPR, riverboat traffic with the new farming areas in the Fraser delta and lower valley enabled New Westminster to grow. By the 1880s, the south arm of the Fraser, the longer of the two, was the preferred channel. Keeping the Fraser navigable included the operation of a Department of Works snag boat to clear debris carried by the river. The first in a series of these vessels, all named *Samson,* entered service in 1884 and the last one was retired in 1980. Starting in 1909, major public works projects created rock jetties on both sides of the river to control its seaward end and increase flow to carry sediment further seaward. Done in stages, this work finished in 1935 and both narrowed and deepened the channel.

The Canadian Northern Railway which passed through New Westminster via Port Mann on its way to Vancouver was completed in 1915. New Westminster had been connected earlier with the US Great Northern system in 1891 at the border town of Blaine. As a CPR spur line had reached the city in 1888 it was now served by three transcontinental railways. The Canadian Western Lumber Company (Fraser Mills) on the north side of the river east of New Westminster in what is now Coquitlam became the largest lumber producer in the province by 1931. Processing timber since 1889, the mill was bought in 1903 by new eastern corporate owners when they acquired extensive timber rights on the lower mainland and Vancouver Island in the Comox Valley.[67] There were two major infrastructure projects in New Westminster in the 1920s. A grain elevator designed by C.D. Howe, then a young engineer, on the south bank of the river was completed in 1928. Pacific Coast Terminals, a private venture, was a large complex of deep-water wharfage, storage

---

[65] Hicks, *Hay's Orphan*, 66; Fred Thirkell, *Vancouver & Beyond: Pictures and Stories from the Postcard Era 1900-1914* (Vancouver: Heritage House Publishing, 2000), 134-37. *Mastodon* subsequently dredged the outer portion of the north arm of the Fraser. During the Second World War it was converted for the RCN as an oil tanker, later sold to Peru, and finally broken up in 1965.

[66] Barman, *The West Beyond the West*, 65.

[67] Lawrence, *Markets and Capital*, 72. Logs were assembled in rafts in Comox on Vancouver Island and towed to Fraser Mills.

sheds and cold storage to handle Okanagan fruit that opened in 1929 with backing from the CNR. Use of the port by ocean freighters increased from thirteen in 1921 to 248 in 1929, and 434 in 1935.[68]

Prince Rupert had been created starting in 1905 as the western terminal of Canada's second transcontinental railway, the Grand Trunk Pacific, completed in 1914. It had the advantages of deep water and of being 935 km closer to Asia than Vancouver (but further from the Panama Canal).[69] The railroad reached Prince Rupert in 1914. Its ambitious infrastructure included a shipyard with a foundry and machine shops. A 169 m (556 feet) wooden floating drydock, the largest on the Pacific coast for its time was completed on site in 1915. Steel struts for the walls came by ship from New York. It was in three sections and could handle a 20,000-ton vessel. During the Great War, the new dock was used by Royal Navy armed merchant cruisers, too large for the existing Esquimalt graving dock. The floating dock and shipyard were leased from the railway by an American syndicate in 1918 to build two 5,300 gross registered tonnage (grt) freighters for the CGMM. Prince Rupert Dry Dock went bankrupt and the freighters were completed by Wallace Shipyard of North Vancouver. Prince Rupert was unable to attract much deep-sea shipping between the wars. A grain elevator completed in 1926 loaded 22 ships, mostly for Japan, the year it opened, but once a large new Alberta Wheat Pool elevator opened in Vancouver two years later the Prince Rupert facility was used only in an overflow role. Prince Rupert became a busy fishing port with three large cold storage plants. The shipyard and dock, now operated by the new Canadian National (CN) Railway Company, were reasonably busy in the 1920s doing maintenance on CGMM cargo ships, CN coastal vessels, and the local fishing fleet. The 1930s were difficult for the shipyard after the CGMM fleet was finally wound down.[70] Extensive logging was underway in Haida Gwaii and the northern mainland coast in the 1920s and 1930s, but lumber was towed down the coast in innovative large Davis or other types of rafts to pulp and paper or lumber mills in the south rather than to Prince Rupert.[71]

Shipbuilding and Repair Yards

Before the Great War, shipbuilding in BC was limited to producing mostly wooden vessels for local requirements. The deep-sea ships that carried foreign

---

[68] Hicks, *Hay's Orphan*, 75; Jacqueline Gresko and Richard Howard (eds), *Fraser Port Freightway to the Pacific 1858-1985* (Victoria: Sono Nis Press, 1986), 62. Pacific Coast Terminals was reorganized under the control of Consolidated Mining and Smelting in the 1930s and began also exporting lead and zinc.

[69] The differences to Yokohama are 935 km (505 nm) to Vancouver or 1574 km (850 nm) to San Francisco: 2.1 or 3.5 days for 10 knot ships.

[70] Alister Crerar, "The Development of the Port of Prince Rupert, British Columbia," *Yearbook of the Association of Pacific Coast Geographers,* vol. 11 (1949): 23-26; Hicks, *Hay's Orphan*, 154-155.

[71] Several methods of constructing rafts of logs were developed in BC and the US northwest. The Davis raft, patented by the creator, Otto Davis was developed in 1911 in Port Renfrew on Vancouver Island and was widely used. Logs were piled on a loose mat woven together using wire and logs. The whole raft was then secured together with more heavy wires. R.E. Sherbet, *Tugs, Booms and Barges* (Victoria: Western Isles, 1999), 81.

trade were built and owned offshore.[72] City directories in 1894 listed twelve boatbuilders in Victoria and four in Vancouver.[73] Such firms, some with marine railways, did repairs and built small coastal vessels, ferries, tugs, fishing craft, scows, and sternwheelers for interior lakes and rivers "almost artisan-like from available materials."[74] The construction of the 46 m tug *Lorne* in Victoria in 1889 was typical. Built to tow sail-powered colliers in the Strait of Juan de Fuca for the Dunsmuir Company, it was designed by a San Francisco naval architect. The wooden hull was produced by the Laing yard whose location is now Fishermen's Wharf. *Lorne* would remain in service for fourty-seven years.[75] Its machinery, boiler, and propeller were manufactured by the Albion Iron Works, by then a sprawling enterprise on the upper harbour established in 1863. Albion had become a public company whose directors included Robert Dunsmuir, R.P. Rithet, and Captain John Irving of the Canadian Pacific Navigation Company. At the turn of the century Albion was the largest engineering enterprise in western Canada, manufacturing a wide range of iron and steel products from railcars to cooking stoves.[76] The government graving dock in Esquimalt opened in 1887 and was strategically important. With a length of 147 m (481 feet), it could service average cargo ships of the time and the RN warships on the Pacific Station. Two new marine railways came into service around the turn of the century. In Esquimalt W.F. Bullen, until recently the manager at Albion Iron Works, established the Esquimalt Marine Railway Company in 1893. This new firm did repair and refit work on warships and merchant vessels in the nearby graving dock and constructed a marine railway with a cradle that could handle vessels of up to 2,500 tons. While most of its work was repairs, Bullen's yard built three small steel ships for the CP coastal service and the hydrographic survey ship *Lillooet*, all with British engines and boilers. On the eve of the Great War Bullen's yard was bought by Yarrows Shipyard of Scotland.[77] Meanwhile, in Vancouver Alfred Wallace opened a small shipyard on False Creek in 1894. This moved to North Vancouver in 1905 where it had a 1,600-ton marine railway and built wooden tugs specialized for towing logs, harbour ferries, and the hydrographic auxiliary schooner *Naden* in 1913.[78]

During the First World War, government funding stimulated the first building of ocean-going vessels on the West Coast. British Columbia eventually ranked first among the provinces in total value of wartime shipbuilding contracts and a distant fourth in munitions production.[79] The initial impetus behind government

---

[72] The ocean shipping arm of Canadian Pacific operated from the UK. Only one of the CP transpacific Empress fleet homeported in Vancouver was registered there, the others were registered in London. All had European officers and largely Chinese crews hired in Hong Kong.

[73] Francis Mansbridge, *Launching History The Saga of Burrard Dry Dock* (Madeira Park BC: Harbour Publishing, 2002), 3.

[74] Chris Madsen, "Wages, Work and Wartime Demands in British Columbia Shipbuilding, 1916-19," *BC Studies,* no. 182 (Summer 2014): 79.

[75] "Our Past: Victoria Machinery Depot showed off Island's Manufacturing prowess," *Victoria Times Colonist*, 6 January 2008.

[76] Seager, "The Resource Economy," 242.

[77] G.W. Taylor, *Shipyards of British Columbia* (Victoria: Morris Publishing, 1986), 60 and 68.

[78] Mansbridge, *Launching History*, 3-18.

[79] Madsen, "Wages, Work and Wartime Demands in British Columbia Shipbuilding, 1916-19," 74.

J. Coughland & Sons shipyard, Vancouver BC, 9 May 1918 (City of Vancouver Archives via Flickr and Wikimedia Commons)

stimulus for shipbuilding came from the lumber industry.[80] The freighters under offshore flags that had been carrying BC lumber and other exports had been drawn away by the war and export markets had collapsed. The BC government under Premier William Bowser, a former vice-president of the Wallace shipyard, passed a bill in early 1916 to provide financial aid for shipbuilding firms along with loans and subsidies for tonnage to carry exports. This brought in venture capital and the building of eighteen five-masted wooden auxiliary schooners with twin screws in Vancouver, New Westminster, and Victoria.[81]

Meanwhile, Allied shipping losses were mounting in the Atlantic. In 1917, the British government started placing orders under an ambitious program to build 27 wooden freighters in BC. These 2,300 grt vessels, which were of medium size for the time, were 76 m (250 feet) long. They were ordered by the Imperial Munitions Board (IMB), responsible for letting war contracts in Canada. The local IMB organization was under concrete mogul R.P. Butchart, assisted by Captain J.W. Troup of CP's coastal ships. Six shipyards were involved, all "greenfield" operations built from scratch to meet wartime demands (two were building auxiliary schooners under the provincial program). Cameron Genoa and Foundation were in the Victoria inner harbour, Lyall Shipbuilding was in North Vancouver, New Westminster Shipbuilding was on Poplar Island in the Fraser,

---

[80] Seager, "The Resource Economy," 223.

[81] Nine of the auxiliary schooners were operated by the West Coast Navigation Company, a syndicate of Great Lakes capitalists. The other 9 ended up in French ownership. All had short careers because they were not competitive after the war. The schooners owned in BC transported lumber to Australia and India in 1917-1920. *Malahat,* later a self-unloading log barge, became a notorious rum-runner "mother ship" off the California coast in the 1920s. Ruth Bailey, "Twelve 'Mabel Brown' Type Five-Masted BC Auxiliary Wooden Schooners, Built in 1917," *Harbour and Shipping* (December 1978), 46-49; Rick James, "Victoria Built Lumber Schooners: Across the Pacific with BC Lumber," *Argonauta* XXXVIII, no. 3 (Summer 2021): 3-13.

Western Canada Shipyards was in False Creek, and the Pacific Construction Company of Vancouver took over and completed two ships started by another firm in Port Coquitlam. Most of the freighters had machinery made in eastern Canada, while eighteen were towed to Ogden Point for fitting out by Yarrows for the IMB. As the wooden freighters were completed in 1918, they were sent across the Atlantic loaded with lumber and flour, but they all had short postwar careers because like the auxiliary schooners they were not competitive against tonnage now available.[82] The French government placed orders shortly after the war for thirty-eight small wooden freighters with Foundation, New Westminster Shipbuilding, Western Canada Shipyards, and Lyall Shipbuilding.

The worldwide wartime shipping emergency also prompted the building of the first large steel ships in British Columbia. J. Coughlan & Sons of Vancouver was the first company involved. They were steel fabricators in False Creek who created an efficient shipyard with four building ways, overhead conveyors, and travelling cranes. They had originally obtained a Norwegian order to build a 5,800 grt freighter, but this was taken over by the IMB which ordered a sister ship and seven slightly smaller ones. The Coughlan order of ten ships was the largest order placed by the IMB in Canada for steel ships (and for the largest ships). Only the first two were completed before the end of the war. Like the Coughlan yard, Wallace Shipyards in North Vancouver had received an order in 1916 for a steel freighter from a Japanese buyer that was taken over by the IMB. This was a 3,000 grt vessel completed as *War Dog* in 1917. Two similar ships were delivered to the IMB in 1918. BC yards eventually built twenty-four of the thirty-nine steel ships ordered by the IMB in Canada.[83]

---

[82] Taylor, *Shipyards*, 89-92*;* W.H. Mitchell and L.A. Sawyer, *British Standard Ships of World War I* (Liverpool: Journal of Commerce and Shipping Telegraph, 1968), 150-156.

[83] Madsen, "Wages, Work and Wartime Demands in British Columbia Shipbuilding, 1916-19," 91-

In the years just after the war, yards on the West Coast built nineteen more steel freighters, of which fourteen went to the new CGMM. Coughlan & Sons built six of the largest size (5700 grt) for the CGMM, plus three which the company operated on the North Pacific until the 1930s, and two for Swedish owners. Wallace Shipbuilding (which became the Burrard Drydock Company in 1921) built two 5,400 grt cargo ships, and four of 3,300 grt. Victoria Machinery Depot leased land on the Songhees Indian reservation on the Victoria inner harbour where it installed two building slips, a travelling crane, and workshops to build two 5,400 grt CGMM freighters. Finally, Prince Rupert Drydock started two 5,400 grt freighters for the CGMM but went bankrupt – the pair was completed by Wallace Shipbuilding.

Two batches of submarines ordered by Russa from the Electric Boat Company in Connecticut were assembled in Vancouver to circumvent the neutral status of the US prior to April 1917. Both projects were handled by a new company called British Pacific Construction & Engineering whose driving force was Scottish American naval architect James Venn Paterson.[84] The first batch of five boats was assembled on a greenfield site at Barnet on the south shore of Burrard Inlet east of Vancouver. The submarines were checked for fit after assembly, taken apart, and shipped in crates from Vancouver to Vladivostok along with machinery and other components despatched from Electric Boat. They were assembled by the Baltic Yard in Petrograd before the end of 1916. A second batch of six boats was assembled in the first part of 1917 at a new temporary site behind the CP Vancouver railyards. The steel casings and forgings for these boats had been manufactured in Montreal by Canadian Vickers. The change of government in Russia intervened before this batch could be shipped. They were crated, eventually sold to the US Navy, and assembled in Seattle where they were commissioned in the fall of 1918.[85]

The war and immediate postwar years had been transformative for BC's shipbuilding industry. Although much of the machinery in the ships and all the steel had to be sourced in eastern Canada or the USA, fully 135 deep-sea vessels, totaling more than half a million tons had been built in the province. The shipyards had employed some 15,000 people and a further 5,000 had been involved in manufacturing auxiliary equipment.[86] The wartime boom had stimulated secondary industries, but no further large ships were built in BC until the Second World War. The CGMM did not prove commercially successful because its operating costs were not competitive. International shipping in that era prior to Flags of Convenience was dominated by European countries, Japan, and the US which all used domestic yards. Moreover, Canadian shipbuilding was as much as 30 percent more costly in materials than building in Britain.[87] The federal government financed the construction of two major drydocks in the 1920s large enough for

---

93, Mitchell and Sawyer, *British Standard Ships of World War I*, 141-150.

84 Paterson was the president of the Seattle Construction and Dry Dock Company which had been building submarines since 1910, including two for Chile acquired for Canada in 1914.

85 W. Kaye Lamb, "Building Submarines for Russia in Burrard Inlet," *BC Studies*, no. 71 (Autumn 1986): 3-26; J. David Perkins, *The Canadian Submarine Service in Review* (St. Catherine's: Vanwell Publishing, 2000), 83.

86 Taylor, *Shipyards*, 104.

87 Garth Wilson, *A History of Shipbuilding and Naval Architecture in Canada* (Ottawa: National Museum of Science and Technology, 1994), 52.

repairs and maintenance on the growing numbers of merchant ships now trading to the coast.[88] A 171 m (560 ft) floating drydock with two sections built in North Vancouver in 1925 by the Burrard Drydock Company, could handle vessels of up to 15,000 tons. In Esquimalt, a massive 357 m (1,173 ft) graving dock was completed in 1927. Both yards remained just alive between the First and Second World Wars through repair contracts and the building of scows, ferries, and fishing vessels.[89] The Coughlin yard, responsible for the greatest number of large vessels built during the burst of shipbuilding was dormant from the early 1920s until 1941, when it was revived as "Western Bridge" (West Coast Shipbuilding Ltd).

The First Seventy Years of Canada's Pacific Gateway

Once Vancouver became the terminus of a transcontinental railway in 1887, the low costs of water transport enabled it to become, slowly at first, a gateway for imports to the Canadian heartland and the export of products from inland areas. After 1900, an expanding web of international shipping lines calling in BC harbours provided regular connections with ports on all the world's oceans. These as well as domestic shipping services conveyed not only trade but passengers in that era before air travel. The Panama Canal became significant for British Columbia after the First World War when it dramatically shrank voyage times to the Atlantic. Three-quarters of the cargo shipped through Pacific Gateway ports after 1920 were exports, and in particular lumber, grain, flour, paper and pulp, and minerals. Imports included sugar, rice, and manufactured goods.

The ocean shipping involved in the gateway from 1871 to 1939 was almost entirely registered outside of Canada. A modest number of subsidized Canadian-flagged freighters operated out of the West Coast for over a decade after 1918, while two major ship chartering companies created in Vancouver to transport BC lumber exports used vessels registered abroad. A shipbuilding industry developed before 1871 to build small vessels and for ship repair. Government funding, initially provincial and then from Britain, jump started a substantial wartime shipbuilding boom starting in 1916. This included the construction of the first large steel ships on the West Coast. British Columbia eventually ranked first among the provinces in the value of Great War shipbuilding contracts. While no substantial vessels were built after the early 1920s, repair work was sufficient to keep three shipyards in business. They would again expand rapidly during the Second World War.

Vancouver's location as a railway terminus and its growing manufacturing sector enabled it to become the dominant Pacific Gateway port. Victoria, British Columbia's only deep seaport in 1871, had declined to a distant third place in shipping activity by 1939. New Westminster ranked in second place due to its lower mainland location, railway connections, and modern cargo handling infrastructure. Prince Rupert would not capitalize on its advantages of being the port closest to Asia until the boom in bulk exports starting in the 1950s and the opening in 2007 of its container terminals. Vancouver, with a commodious deep

---

[88] Roland H. Webb, "Burrard Drydock Co. Ltd.: The Rise and Denise of Vancouver's Biggest Shipyard," *The Northern Mariner* VI, no. 3 (July 1996): 4.

[89] Wallace built a coastal liner *Princess Louise* for CP in 1921. The engines boilers were manufactured in Vancouver. Taylor, *Shipbuilding,* 101.

harbour, was ringed in 1939 by several modern cargo terminals including grain elevators. It was served by three transcontinental railways and was the hub for the shipping artery which connected it with resource producing ports stretching up the long BC coast. It dominated the Pacific Gateway in 1939 as Canada's second port and would overtake Montréal in cargo volume in 1955.

Jan Drent was a career officer in the Royal Canadian Navy, commanding three warships on both coasts and serving ashore in Canada and overseas. His nautical writings have included articles and book reviews in periodicals in Canada and the UK. (Contact: janjdrent@gmail.com)