

An American Sales Engineer in Early 20th Century Japan:

S. M. Vauclain Jr. and the International Marketing of
Baldwin Locomotive Works

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Abstract

This paper examines the overseas marketing activities of American locomotive manufacturers through the story of Samuel M. Vauclain Jr. (1880–1913), a sales engineer for Baldwin Locomotive Works who sold American locomotives in Japan in the early twentieth century. Through the lens of one individual, the paper explains the factors that led to the rapid rise of American railway equipment manufacturers, which ultimately replaced British manufacturers in the Japanese market.

In the late nineteenth century, American manufacturers developed new marketing techniques and methods to sell their products on the vast and expanding US market. Utilizing those same techniques and methods, American railway equipment manufacturers successfully penetrated foreign markets such as Japan in the early twentieth century. Previous studies exploring the technological transfer of locomotives and other railway equipment from the US to Japan paid limited attention to individuals like Vauclain Jr. In contrast, this paper highlights Vauclain Jr.'s activities to discuss in depth the pivotal role of field representatives in international marketing. It will focus on how, as a sales engineer, Vauclain Jr. effectively promoted and sold Baldwin locomotives and parts while gathering information from local stakeholders that he reported to headquarters. The paper will also detail how Vauclain Jr. explored the new business opportunities in domestic Japanese markets that arose as industrial production gained a bigger share of Japan's overall economy in the early twentieth century. To achieve these purposes, the analysis will utilize Vauclain Jr.'s dailies and letters from Samuel M. Vauclain, his father and Baldwin's vice president.

The story of Samuel M. Vauclain Jr. (1880–1913), a sales engineer who sold American locomotives in Japan and Australia in the early twentieth century, provides the lens through which this paper examines the overseas marketing activities of American locomotive manufacturers. Vauclain Jr. was the son of Samuel M. Vauclain, the vice president of Baldwin Locomotive Works, and his individual experiences help explain the factors behind how American railway equipment manufacturers swiftly ascended and finally overtook British manufacturers in the Japanese market.

Mire Wilkins conducted a pioneering study in 1970 on multinational enterprises, particularly examining the regional distribution of US corporate foreign direct investment as of 1914, just before World War I. She found that most of this investment was concentrated in the Western Hemisphere, particularly in Canada, Mexico, and Central and South America, followed by Europe. In contrast, investment in Asia and Oceania was extremely limited. Geographical distance, information paucity, and low cultural familiarity indeed made Asia a region associated with high investment risks and costs for American companies.¹ However, this does not imply that American companies were uninterested in the Asian market. In fact, from the late nineteenth to the early twentieth century, American manufacturing actively expanded product exports to East Asian markets. This period can be viewed as a time when the industry was beginning to develop emerging markets by exporting prior to making direct investments. With this context in mind, this paper examines the efforts of American companies during this period to enter East Asia, focusing on Japan and using the locomotive manufacturing industry as a case study.

The analysis below examines the expansion of US manufacturing into East Asia from a marketing perspective. The primary reference for this research is *Merchants and Manufacturers* by Glenn Porter and Harold Livesay, a classic 1971 work on the history of industrial product marketing in the United States.² The book highlights the significant role of sales representatives (sales reps), a new type of salesman who possessed specialized knowledge and operated within corporate sales organizations. These sales

¹ Mire Wilkins, “Conclusion,” in *The Emergence of Multinational Enterprise* (Harvard University Press, 1970).

² Glenn Porter and Harold C. Livesay, *Merchants and Manufacturers* (Johns Hopkins University Press, 1971).

reps emerged in the US industrial goods sector during the late nineteenth century alongside local manufacturers' agents. For instance, Porter and Livesay illustrate how Carnegie Steel grew by utilizing manufacturers' agents for domestic marketing in the 1870s and 1880s, and how it applied this same approach to its overseas expansion in the late 1890s. This study is particularly interesting because it shows how remote marketing techniques developed for the vast US domestic market were adapted for international markets. However, the overseas marketing strategies of American manufacturers did not rely solely on independent sales representatives. As this paper demonstrates, another approach involved manufacturers' own employees—sales engineers—being sent overseas to develop markets in collaboration with local agents.

John Brown's 1995 study, in the context of railway materials, examines overseas marketing in the locomotive manufacturing industry from the 1870s to the 1890s, highlighting the case of Baldwin Locomotive Works, the largest locomotive manufacturer in the United States. However, Brown positions Baldwin's overseas exports as a safety net during periods of domestic market recession and only briefly mentions an overseas network of local agents and branches.³ This paper will clarify that a significant aspect of Baldwin's overseas marketing involved sending sales engineers with specialized knowledge of locomotive technology. These engineers played a vital role in conducting product marketing activities in collaboration with local agents. Unfortunately, Brown does not mention these sales engineers, who were central to Baldwin's marketing efforts.⁴ The following study of S. M. Vauclain Jr.'s activities as a Baldwin sales engineer in Japan and Australia allows us to better understand their contributions.

Japan at the turn of the nineteenth and twentieth centuries was experiencing its industrial revolution. During this period, modern industries such as railways, mining, and cotton spinning emerged, requiring vast quantities of machinery and materials that were imported from Europe and the United States. The railway industry, established in the 1870s through the introduction of British technology, relied primarily on orders for railway equipment—including locomotives—from Britain until the 1880s. However, full-scale exports from American manufacturers to Japan began in the late 1890s, and by the early twentieth century, American products rapidly replaced British ones. What was the driving force behind this swift growth of American manufacturing in the Japanese

³ John Brown, *Baldwin Locomotive Works* (Johns Hopkins University Press, 1995), 44–47.

⁴ See chap. 3 of Nakamura Naofumi, *Umi wo wataru kikansha* [Locomotives from across the oceans] (Yoshikawa Kōbunkan, 2016).

market? Naofumi Nakamura⁵ notes that, in addition to innovations in American production technology that enabled shorter lead times and lower prices, advancements in marketing methods—particularly the active involvement of manufacturers in sales activities—played a significant role. To clarify these marketing strategies, Steven Ericson and Nakamura respectively provide detailed examinations of the marketing efforts of W. C. Tyler (1856–1936), an independent sales representative dispatched to East Asia by the American Locomotive Company (ALCO), a rival of Baldwin and one of the two major American locomotive manufacturers.⁶ However, American manufacturers did not rely solely on indirect methods through independent sales reps. Their other approaches involved greater headquarters involvement, with manufacturers dispatching their own employees—sales engineers—into overseas markets.

The nature of these marketing activities may be revealed through following the work of Vaucrain Jr. in Japan via his diaries and letters from his father. As a sales engineer, Vaucrain Jr. effectively promoted and sold Baldwin locomotives and parts while gathering information from local stakeholders that he reported to his US headquarters. He also adopted various ways of exploring new business opportunities in the Japanese markets, which were expanding as industrial production gained a bigger share of Japan's overall economy in the early twentieth century.

1. International Marketing by American Manufacturers in the Early 20th Century

From the late nineteenth to the early twentieth century, American manufacturers commonly dispatched representatives from their headquarters, such as sales representatives and sales engineers, to address overseas customer needs alongside local agents like trading companies. This marketing strategy was a unique characteristic of American manufacturers not found in other Western countries such as the United Kingdom. An 1896 report from the British Consulate in Japan noted that, over the

⁵ “Japan's Industrial Revolution and American Locomotives,” chap. 3 of Naofumi Nakamura, *Trading Locomotives* (Columbia University Press, 2025).

⁶ Steven J. Ericson, “Taming the Iron Horse: Western Locomotive Makers and Technology Transfer in Japan, 1870–1914,” in *Public Spheres, Private Lives in Modern Japan, 1600–1950*, ed. Gail Bernstein, Andrew Gordon, and Kate Nakai (Harvard University Press, 2005); Nakamura Naofumi, “Reconsidering the US-Japan Trade in Railroad Equipment” *ISS Discussion Paper Series*, F-199 (Institute of Social Science, The University of Tokyo, 2023).

previous five years, 100 American-made locomotives had been delivered to both the Imperial Government Railway (IGR) and private railways. The report emphasized that this success resulted from American manufacturers collaborating closely with trading companies in Japan to import the locomotives over several years.⁷ Furthermore, the report mentioned that the aggressive promotion of American products by these trading companies, acting as authorized agents, had become a significant topic of discussion in Japan at that time.

In this regard, a leading industry journal highlighted the 1897 competitive bidding process for the Kansei Railway as a prime example:

American locomotive manufacturers typically have authorized agents in Japan. These agents engage in intense price competition, striving to build strong relationships with both IGR and private railways.⁸

A staff member responsible for railway equipment at Mitsui & Co., then the largest trading company in Japan, mentioned during an internal sales meeting that “Baldwin Locomotive Works had Westerners handling product sales, who traveled to railway companies throughout the country and engaged in highly aggressive marketing strategies.”⁹

This marketing approach, which depends on manufacturers’ agents, was developed in nineteenth-century America to facilitate remote transactions within the extensive domestic market.¹⁰ However, traditional American salesmen often lacked specialized or technical knowledge of the products they sold and operated independently of manufacturers. Manufacturers thus had limited control over these salespeople, making it difficult to curb their self-serving behavior in the early days of sales management.¹¹

In contrast, the newly-trained sales reps and sales engineers possessed technical

⁷ British Consulate in Japan, *Diplomatic and Consular Report on Trade and Finance*, No. 1695 (February 22, 1896), 44.

⁸ “Kikansha kyōkyū no kyōsō” [Competition in locomotive supply], *Kogyo zasshi* [Industrial journal] 133 (November 1897), 23.

⁹ Mitsui & Co., “Kikai tetsudō, kanamono kaigi gijiroku, Meiji 39 nen” [Minutes of meetings concerning machinery, railways, and metals, 1906] (Mitsui Bussan, 1906), vols. 41–42, in Mitsui Archives, Bussan 206.

¹⁰ Porter and Livesay, *Merchants and Manufacturers*.

¹¹ Kazuo Usui, *Development of Marketing Managements: The Case of the USA, c. 1910–1940* (Ashgate Publishing, 2008).

knowledge and product expertise. Then, as now, they conducted marketing activities on behalf of manufacturers and engaged in sales while maintaining close contact with their headquarters. These representatives, like their present-day counterparts, sometimes operated under contracts that prohibited them from handling competitors' products in the same product segment, or they worked as direct employees of the manufacturer.¹²

A notable example of international marketing by American manufacturers in the Japanese and East Asian markets is Willard C. Tyler's promotion of railway equipment while serving as a sales representative.¹³ Tyler gained extensive knowledge of railways while working as a reporter for a railway industry magazine. He first visited Japan in 1898 as a journalist to observe the burgeoning Japanese railway industry. From the winter of 1899 to the fall of 1902, he spent nearly half of each year in the Far East, promoting American-made railway products such as locomotives, brakes, cooling wheels, couplers, and train lights. His activities extended beyond Japan to include China. During his business trips in 1901 and 1902, Tyler referred to himself as the representative of ALCO despite also serving as a sales rep for several other railway equipment manufacturers whose product lines did not overlap. In essence, Tyler did not exclusively represent ALCO; he operated independently and was commissioned by multiple manufacturers to promote their products.

Tyler's activities as a sales representative had five key aspects: (1) selling products, (2) surveying existing or potential markets, (3) promoting new products and stimulating demand, (4) providing information to and selecting local agents, and (5) seeking new business opportunities.¹⁴ He not only conducted autonomous marketing in remote locations, including overseas sites, but also provided valuable local insights required by the manufacturers who contracted him.

The relationship between sales representatives and local agents was marked by both cooperation and conflict. Local agents received product information, marketing advice, and promotional support, while sales representatives benefited from services such as interpretation and telegraphic communication with their home country. However, tensions

¹² Yasuo Doi, *Beikoku industrial marketing channel* [Industrial marketing channels in the US] (Dōbunkan Shuppan, 1999).

¹³ On Tyler's promotion of locomotive sales in East Asia, see Steven J. Ericson, "Importing Locomotives in Meiji Japan: International Business and Technology Transfer in the Railroad Industry," 144–49; Nakamura, "Reconsidering the US-Japan Trade in Railroad Equipment."

¹⁴ Nakamura, "Reconsidering the US-Japan Trade in Railroad Equipment," 15–30.

sometimes arose when the headquarters requested sales representatives to select and supervise local agents.

2. The Global Strategy of Baldwin Locomotive Works

Baldwin Sales Engineers

Given the above context, we will examine the marketing activities of American manufacturers in Japan by comparing the roles of sales engineers to those of sales reps, highlighting the work of Vaucrain Jr. Unlike sales reps like Tyler, who worked independently and offered multiple products across various fields, sales engineers were directly employed by manufacturers and specialized in promoting their own company's products. As trained engineers, their deeper technical knowledge of the products distinguished them from sales reps in terms of the insight they provided into their manufacturer employer's new products. For instance, a catalog of narrow-gauge locomotives created by Baldwin in 1897 for its local agent in Japan, Frazar & Co. (Frazar), devoted many pages to explaining the Vaucrain balanced compound locomotive, which was the latest model at the time.¹⁵ However, it is unlikely that the performance, operation, and maintenance of a balanced compound locomotive, or its complex structure, could be fully understood based solely on the explanations in this catalog. To successfully market such new products, in-depth explanation from personnel familiar with the structure was essential. Sales engineers were dispatched from headquarters to local agencies specifically to fulfill this vital role.

W. H. Crawford was the first sales engineer that Baldwin sent to Japan.¹⁶ Crawford played a significant role in promoting the export of American-made locomotives to Japan,

¹⁵ Burnham, Williams & Co., *Baldwin Locomotive Works Narrow Gauge Locomotives, Japanese Edition, Frazar & Co. of Japan Agents, Yokohama* (J. B. Lippincott Co., 1897).

¹⁶ He is not to be confused with Joseph Uly Crawford, a former consulting engineer for the Hokkaido Development Commission, who, as of 1901, had returned to the United States and was living in Philadelphia. In 1898, W. H. Crawford was stationed at Frazar's Yokohama office as an engineer for Baldwin selling the company's locomotives in Japan. Ericson, "Taming the Iron Horse," 203; Katō Daisaburō, ed., *Yokohama seimeiroku* [Yokohama directory of personages] (Yokohama Seimeiroku Hakkōsho, 1898 [Meiji 31]), 72.

selling over 200 locomotives to the IGR and private railways from 1894 to 1897. He also supervised the manufacture of the Mikado-type tender locomotives for the Nippon Railway and assisted the Sanyo Railway in switching from British-made to American-made locomotives.¹⁷ Vauclain Jr. departed for Japan in February 1904 as his successor.

Vauclain Jr. as a Sales Engineer

Vauclain Jr. was born in Philadelphia in 1880 as the son of Samuel M. Vauclain, the renowned mechanical engineer who developed the Vauclain compound locomotive at Baldwin. He majored in mechanical engineering at Cornell University and, after graduating in 1902, joined his father at Baldwin, where he began his career as a locomotive engineer under his father's supervision.

In 1904, S. M. Vauclain took charge of Baldwin's overall management on his appointment as the company's vice president and general manager. In the late 1890s, Baldwin's locomotive production declined due to a US domestic recession, prompting the company to rely more on exports. Baldwin's production volume fell from a cumulative total of 3,661 units in 1890–1894 to 3,105 units in 1895–1899, while its export ratio rose from an annual average of 25.6% to 44.3%.¹⁸ However, due to a recovery in the domestic market, the company's production surged to a cumulative total of 7,634 units between 1900 and 1904,¹⁹ causing the export ratio to decline relatively. Developing overseas markets was a critical challenge not only for Baldwin but for the entire American locomotive manufacturing industry, which was seeking to reduce dependence on a domestic market characterized by alternating booms and recessions.

At the time, the United States was engaged in fierce export competition with Britain, the pioneer in the global locomotive market. From 1900–1902, market competition focused on British colonies and East Asia, with more than 60% of US locomotive exports destined for these regions.²⁰ In this milieu, Japan was an emerging market where railway construction was progressing nationwide amid the boom in demand for locomotives following the First Sino-Japanese War (1894–1895). The market for railway equipment was also expanding in Australia and New Zealand, which were part of the British Empire. This led S. M. Vauclain to dispatch his promising 24-year-old son to the Asia-Pacific region as a sales engineer for a planned two-year period starting in February 1904. The

¹⁷ Ericson, "Taming the Iron Horse," 202–3.

¹⁸ Calculated from Nakamura, *Umi wo wataru kikansha*, 157.

¹⁹ Nakamura, *Umi wo wataru kikansha*, 157, 189.

²⁰ Nakamura, *Umi wo wataru kikansha*, 17.

aim was to conduct trade development and market research in this large region, which was crucial for the international locomotive market.²¹

Vauclain described the role he expected the sales engineer to fulfill in a letter to his son (emphasis in original):

I am trusting your good sure and honest manhood to point out to you on the spot just what should be done. I am having you sent a lot of data as to solid rolled wheels also some samples—I do hope you can send us some orders for them. I have two reasons for this one is getting foreign trade and the other & more important one is more that we should send out mechanical engineers to drive up trade & extend our acquaintance throughout the world. I am fighting now to send such a man to each of our American agencies & hope to accomplish it.²²

Vauclain, as Baldwin's leader, primarily expected his son to enhance the company's foreign trade by promoting its products, such as locomotives and solid-rolled wheels, as a sales engineer. However, as mentioned in the latter part of the highlighted passage, Vauclain Jr.'s more significant role was to expand the company's global network of contacts and business relationships. This was a role unique to a sales engineer—one that an external sales rep could not fulfill. To help Vauclain Jr. foster this network, his father, recognizing that his son was a young engineer fresh out of college, offered this advice: "You must be careful to make a good impression—Every [*sic*] cautious and make no statement unless you are dead sure of your ground. Get on the inside, if possible."²³ This phrase imparts the fundamental mindset necessary for building relationships.

Another important point mentioned in the letter above is Vauclain's intention to send sales engineers to each of Baldwin's agencies worldwide. This suggests that Baldwin was actively pursuing overseas marketing activities utilizing sales engineers during that period. In other words, the case of Vauclain Jr. is noteworthy not only for its personal aspect—in which a company executive father sent his son abroad for training—but also as an example illustrating a crucial phase of Baldwin's international strategy. With these points in mind, the next section turns to exploring the nature of Baldwin's overseas marketing

²¹ See MSS 0074, Samuel Matthews Vauclain Jr. papers, DeGolyer Library, Southern Methodist University.

²² Letter from Samuel M. Vauclain to Vauclain Jr., July 16, 1904, Samuel Matthews Vauclain Jr. papers, Historical Society of Pennsylvania, Collection 3666 [hereafter SMVJ papers].

²³ Letter from Samuel M. Vauclain to Vauclain Jr., July 5, 1904, SMVJ papers.

activities through the case of Vauclain Jr.

3. Vauclain Jr.'s Marketing Activities

Assignment to Japan

Southern Methodist University contains a trove of materials related to Baldwin, including Vauclain Jr.'s 1904 diary and notes.²⁴ Additionally, the Samuel M. Vauclain Jr. papers held by the Pennsylvania Historical Society contain numerous primary sources such as correspondence between Vauclain and his son.²⁵ These historical materials provide a clear picture of Vauclain Jr.'s marketing activities in Japan.

Vauclain Jr. departed Philadelphia on February 3, 1904, and arrived in Yokohama on April 20 via Honolulu. While he was en route to Japan, the Russo-Japanese War broke out, leading construction of the Keifu (Gyeongbu) and Keigi (Gyeongui) railways, which ran the length of the Korean Peninsula to proceed at a swift pace. Within Japan proper, the market for railway supplies was also speedily expanding to increase the capacity for transporting military supplies. In that sense, Vauclain Jr.'s visit to Japan represented a once-in-a-lifetime opportunity for Baldwin to grow its business.

Shortly after arriving in Japan, Vauclain Jr. began working at Frazar & Co. (Frazar) in Yokohama. He spent his days traveling by train, talking with Japanese people, and keeping quite a hectic schedule. From around May 13 to 19, he went on a business trip to western Japan, including Shimonoseki. Immediately afterward, he wrote a letter to his mother, sharing his experiences in Japan and his honest impressions of the Japanese people.²⁶ He found everything about his first visit to Japan unusual; in particular, he perceived the men to be "tricky and foxy." However, he enjoyed his time and developed a good rapport with a Greig and a Suzuki, two clerks employed by Frazar.

²⁴ Samuel Matthew Vauclain Jr., "Japan Diary 1904" and "Japan and Australia Diary 1904," A2011/0020, Southern Methodist University Library.

²⁵ SMVJ papers.

²⁶ He wrote: "Clothes off, riding at night on trains, and talking all day to foxy Japs. Greig & Suzuki are splendid company, and we have more fun than you can imagine, cracking jokes on each other and helping each other to see the funny side of our predicaments, because we got into many, in this land of queer foods, houses, and people. —The Japanese women are splendid workers but the men are inclined to take life easier. I have no use for Japanese men; they are tricky and foxy to the core." Letter from Vauclain Jr. to Mother, May 19, 1904, SMVJ papers.

On June 1, Vauclain Jr. departed for an eight-day business trip to Hokkaido, which he reached after first traveling from Tokyo to Aomori on the Nippon Railway. During his trip, he visited Sapporo, Muroran, Iwamizawa, and Asahikawa, where he met locomotive supervisors from the Hokkaido Coal Mining Railway and the Hokkaido Government Railway. The purpose of this trip was to gather information from the Hokkaido Government Railway about a tender for two 2-6-0 type tender locomotives and related parts. Vauclain Jr. also participated in the railway tender held in Tokyo on June 20 alongside his colleagues at Frazar.²⁷

On June 25, Vauclain Jr. again traveled to western Japan to visit the government-run Yawata Steel Works in Kitakyushu. While en route on June 27, he received a telegram at the Frazar branch in Kobe urgently recalling him to Frazar's headquarters in Yokohama. He returned to Kobe on June 30 and then made his way back to Yokohama on July 2. On July 4, he embarked on a three-month business trip to Australia and New Zealand. Amid this relentless series of travels, with no time to rest, he wrote in his diary, "Baldwin engines doing all the hard work,"²⁸ indicating his tireless efforts to capitalize on the unprecedented business opportunities presented by the Russo-Japanese War.

A Business Trip to Oceania

Vauclain Jr. described the purpose of his trip to New Zealand and Australia as "really one of business and partly pleasure,"²⁹ suggesting that it also served as a much-needed break from his demanding schedule in Japan. However, it is likely the only time he had to rest was during the 27-day voyage aboard the old tramp ship *The Louise Roth*, which traveled from Yokohama to New Zealand via Guam.³⁰ Even during the journey, he received letters sent from his father and boss, S. M. Vauclain, about once a week.³¹ These letters contained personal updates, information on Baldwin's current status, and instructions related to his work in New Zealand and Australia. Understanding Baldwin's current situation—especially regarding orders, pricing, and delivery schedules—was fundamental to Vauclain Jr.'s work. In addition, S. M. Vauclain's instructions included

²⁷ Nakamura, *Umi wo wataru kikansha*, 112.

²⁸ Entry for June 27, 1904 in "Japan Diary 1904."

²⁹ "Railways in Korea Building by Japanese. Yankee Engines to be Used. Interview with Mr. S. M. Vauclain. Comments on Australasian Railways," *Telegraph Brisbane*, August 26, 1904. [hereafter "Interview with Mr. S. M. Vauclain"]

³⁰ Letter from Vauclain Jr. to mother, July 31, 1904, SMVJ papers; he wrote in the same letter that he had greatly enjoyed the voyage on this old steamship.

³¹ Letters from S. M. Vauclain to Vauclain Jr., July 5, 10, and 16, 1904, SMVJ papers.

not only the standard responsibilities of a sales engineer—such as market research, product promotion, and building professional networks—but also detailed advice on interpersonal conduct that reflected a fatherly concern for his son’s well-being.

One letter indicated that Baldwin was facing an unstable situation, including strikes at its factory. With domestic orders looking bleak, the Japanese Empire (comprising Japan and Korea), which was thriving due to the Russo-Japanese War, represented a vital sales territory. Despite the high expectations for Vauclain Jr.’s marketing efforts in New Zealand and Australia, he was urged to return to Japan as soon as possible given the significance of the Japanese market.³² In another letter, S. M. Vauclain also requested that his son provide advice to the local agents in New Zealand and Australia and keep headquarters informed of the agents’ evaluations.³³

Vauclain Jr. arrived in Auckland on the morning of July 30, 1904. On August 1, he visited the New Zealand Government Railway’s factory to examine the configuration of the steam locomotives in use and to gather feedback about Baldwin locomotives, which proved very positive.³⁴ On the same day, his father wrote in a letter that the agent in Australia had urgently requested the dispatch of an expert to secure orders for several locomotives, a task for which Vauclain Jr. had been recommended by headquarters as the ideal candidate.³⁵ This indicates that when a local agent lacked a sales engineer, the company would send an engineer from headquarters as needed. Clearly, having a sales engineer stationed locally was a significant advantage for marketing locomotives.

On the evening of August 1, Vauclain Jr. boarded a steamship bound for Australia and arrived in Sydney on the night of August 5. The very next day, August 6, he visited the local agent, R. Towns & Co. (Towns). Immediately upon arriving in Sydney, he booked a passage on the steamship *Australia*, which was set to depart for Yokohama. He informed his father that he would leave Australia on August 27 to return to Japan,³⁶ indicating that he had planned to stay for only about three weeks from the beginning.

While in Australia, Vauclain Jr. first met with officials from the New South Wales government. Subsequently, from August 9 to 10, he visited the Eveleigh Railway Workshop, the state-of-the-art facility of the New South Wales Government Railway. During this visit, he met with Chief Mechanical Engineer William Thow (1842–1926)

³² Letter from S. M. Vauclain to Vauclain Jr., July 10, 1904, SMVJ papers.

³³ Letter from S. M. Vauclain to Vauclain Jr., July 16, 1904, SMVJ papers.

³⁴ “Japan and Australia Diary,” August 1, 1904.

³⁵ Letter from S. M. Vauclain to Vauclain Jr., August 1, 1904, SMVJ papers.

³⁶ Letter from Vauclain Jr. to S. M. Vauclain, August 8, 1904, SMVJ papers.

and the chief draughtsman³⁷ for discussions in which he eagerly addressed and refuted Thow's critical views regarding Baldwin locomotives.³⁸

On August 11, Vauclain Jr. visited Bathurst, and on August 12, he traveled to Penrith to hold meetings with Government Railways officials. Next, on August 17, he met with the Chief Commercial Officer of the aforementioned railways and engaged in extensive discussions about locomotive pricing and British-made supplies. They also considered the discount rates that would apply if American-made supplies were substituted under warranty. The officer agreed that a commissioner's letter would be sent and outlined the discount rates along with the specifications and terms of compensation.³⁹

Vauclain Jr.'s aggressive marketing efforts seem to have produced some results. His father's letter to him, dated August 18, mentioned that a request for a quotation had been received via telegram from Towns, and he would do his utmost to secure this order.⁴⁰ This quotation request appears to have led to an actual order, as Baldwin delivered 20 locomotives to Australia in 1905.⁴¹

On August 18, Vauclain Jr. boarded a night train for Melbourne and arrived the following day, upon which he immediately visited the Newport Workshop of the Victoria Railways. Over the next two days, guided by factory engineers, he conducted a thorough observation of the manufacturing process at the workshop, examining the specifications, design, materials, and machining methods used for the locomotives being produced there. Additionally, he verified the modifications made to American-made locomotives, including those manufactured by Baldwin.⁴² His observations extended to the factory facilities such as the manufacturing equipment and tools, demonstrating his expertise as an engineer. Having accomplished this, he boarded another night train to return to Sydney on the afternoon of August 19.

³⁷ "Japan Diary," August 9, 1904.

³⁸ Letter from Vauclain Jr. to S. M. Vauclain, August 8, 1904, SMVJ papers. Thow, a British mechanical engineer, was known as a supporter of British-made locomotives, particularly those manufactured by Beyer Peacock, and in 1892 he testified before a royal commission pointing out structural defects in American-made locomotives. J. D. Walker, "Thow, William (1842–1926)," *Australian Dictionary of Biography*, vol. 12, (Melbourne University Press, 1990).

³⁹ "Japan Diary," August 17, 1904.

⁴⁰ "We have a cable from Towns asking quotations on some engines as soon as plans arrive for my inspection. I will do the best we can to get the order as we are hard up for work." Letter from S. M. Vauclain to Vauclain Jr., August 18, 1904, SMVJ papers.

⁴¹ "Steam Locomotive Order Books (1904–1905)," Pennsylvania State Archives, Baldwin-Hamilton Company Records, MG-427.

⁴² "Japan and Australia Diary," August 19–20, 1904.

On the evening of August 24, Vauclain Jr. departed Sydney by train and arrived in Brisbane on August 25. On August 26, he met with H. Horniblow, a locomotive engineer with the Queensland Government Railway, and on August 27, he visited the railway's Ipswich shops, where he toured the facility guided by the chief draughtsman.⁴³ During this visit, he took detailed notes on machine tools and other factory equipment, including the materials, parts, and manufacturing methods used.⁴⁴

On August 28, Vauclain Jr. was invited to dinner at Horniblow's home, suggesting that he was acting on his father's advice and actively building a network of contacts in the region. He was also interviewed by *The Telegraph*, a Brisbane newspaper, during which he provided a detailed explanation of Baldwin's expansion into Japan and the Korean Peninsula while emphasizing how the company valued its relationships with customers.⁴⁵ He also discussed Baldwin's successful introduction of locomotives, primarily in New Zealand, and expressed optimism about future sales opportunities. However, he barely mentioned the situation in Australia, despite having observed it for the past two weeks.

In a letter to his fiancée, Vauclain Jr. described Australia as "completely paralyzed," stating that "no one wants to come here to settle or invest money."⁴⁶ This insight reveals his belief that Australia was not a particularly promising market. One reason for his pessimistic view was the Australian demand for simple, sturdy locomotives like the British ones, which had minimal fuel consumption and maintenance costs. He also noted that any breakdowns or damage could potentially lead to a parliament investigation. For this reason, railway operators often left locomotive design entirely to manufacturers to avoid liability in the event of issues. All state government railways in Australia, like their British counterparts, operated large-scale workshops and produced their own locomotives. This created the risk that once Baldwin designed and built a prototype, the customer railways might simply replicate it. Furthermore, the competition with British and German locomotives was extremely fierce, making it unlikely that Baldwin would achieve significant profits even if they entered the market in earnest.⁴⁷

Another noteworthy point in this newspaper article is the change in Vauclain Jr.'s attitude toward Japan. Shortly after arriving in Japan, he initially held a negative view of the country and its people. However, four months later, he expressed a much more positive perspective, stating: "On the whole, I have been immensely interested in, and

⁴³ "Japan Diary," August 26–27, 1904.

⁴⁴ "Japan and Australia Diary," August 26–29, 1904.

⁴⁵ "Interview with Mr. S. M. Vauclain."

⁴⁶ Letter from Vauclain Jr. to Hilda, September 4, 1904, SMVJ papers.

⁴⁷ "Japan and Australia Diary," September 7, 1904.

pleased with, the Japanese during my work amongst them.”⁴⁸ Although remarks made in private correspondence are not equivalent to those made in public, this transformation highlights Vauclain Jr.’s adaptability to the local environment. At this juncture, he preferred working in Japan over Australia.

On August 29, Vauclain Jr. boarded the *Australian* in first-class accommodation and set sail for Japan the following day, August 30. He made a brief stop in Hong Kong, one of the *Australian*’s ports of call, and visited Kowloon and Guangdong from September 19 to 21.⁴⁹ During this time, he appears to have conducted a survey of the general conditions of the Chinese market.⁵⁰

Regarding the results of Vauclain Jr.’s business trip to Australia mentioned above, S. M. Vauclain later commented as follows:

Australia opened your eyes, and until your visit there, we had thought it the most neglected country by us and were seriously considering sending a member of the firm there. But you found how it was—almost useless to undertake anything, and so is it in the Argentine. This work we get is so safeguarded by the peculiarities of the purchasers as to make the engines almost discreditable to us after they are built and delivered.⁵¹

The quote highlights that upon reviewing his son’s research report, Vauclain recognized that developing a market in Australia—where he had initially intended to implement aggressive marketing strategies—would be challenging. This observation crucially illustrates how a sales engineer’s objective market research could shape company executives’ perceptions. However, following this quote, Vauclain advised, “My boy, there are things to be said on both sides,” and recommended that his son refrain from including assessments of overseas operations in his correspondence with headquarters. The

⁴⁸ He explained his high regard of Japan thus: “The Japanese are very strict in their methods of government, and as a rule they will stand no nonsense. One thing, life is in no danger, and you may travel from one end of the country to the other without any fear of being molested.” See “Interview with Mr. S. M. Vauclain.”

⁴⁹ “Japan Diary,” September 19–22, 1904.

⁵⁰ The details of this are unclear. However, based on this experience, Vauclain Jr. appears to have reported a negative assessment of the Chinese market to headquarters. On this matter, S. M. Vauclain wrote: “I noted what you had to say about South America & China. All have been diligent following up business in both places, but it is impossible to overcome at once the conditions which prevail.” Letter from S. M. Vauclain to Vauclain Jr., December 19, 1904, SMVJ papers.

⁵¹ Letter from S. M. Vauclain to Vauclain Jr., December 19, 1904, SMVJ papers.

rationale behind this advice was that opinions on overseas operations were divided among the management team, and they were unlikely to heed Vauclain Jr.'s insights, since they had never visited the regions in question.⁵² In the early twentieth century, Baldwin had yet to solidify its overseas operations, and the company was fraught with internal conflicts over whether to pursue these initiatives.

Return to Japan and Marketing Activities During the War

On September 29, 1904, Vauclain Jr. arrived safely at Moji Port. The following day, he attempted to meet with Mitsugu Sengoku, the president of Kyushu Railway, but was unable to because Sengoku was ill. He thus continued on to Shimonoseki and then to Kobe, where he arrived on October 1. In Kobe, he visited the Sanyo Railway and met with Hikomatsu Iwasaki, a locomotive superintendent, and Masaharu Ishihara, the chief of the operations division. They discussed the manufacture of six compound locomotives. That evening, he boarded a night train and departed Kobe for Yokohama.⁵³

On October 2, Vauclain Jr. returned to Yokohama and immediately began gathering information on the small locomotives scheduled for delivery to the Atami Light Railway. He wrote a letter to Baldwin's headquarters and then started visiting clients in the Kanto region. On October 15, he visited Tokyo Electric Railway and later met with Hiroshi Hiraoka, the vice president of Kisha Seizo in Tokyo. During his meeting with Hiraoka, a person-in-charge from Frazar was also present. They agreed that, in exchange for Baldwin sending Kisha Seizo a typewritten copy of a letter regarding rolled wheels, Kisha Seizo would provide Baldwin with drawings of materials it had purchased from the UK. He also noted in his diary from that time that "[they] had a grand scheme for the development of Manchuria and the supply of locomotives, to enter into an agreement with some English and American builders."⁵⁴ This indicates that Hiraoka was already considering a partnership with a foreign locomotive manufacturer in connection with the wartime Manchuria business. It is unclear whether this plan was ever implemented. However, it is noteworthy that Hiraoka, a pioneer of the Japanese locomotive manufacturing industry, recognized the enormous demand for locomotives that would emerge in Manchuria during the Russo-Japanese War. He aimed to capitalize on this business opportunity by collaborating with British or American locomotive manufacturers. Vauclain Jr. quickly gleaned this information through diligent customer visits, which ultimately led to a large-

⁵² Letter from S. M. Vauclain to Vauclain Jr., December 19, 1904, SMVJ papers.

⁵³ "Japan Diary," September 29–October 1, 1904.

⁵⁴ "Japan Diary," October 15, 1904.

scale locomotive order from the Japanese government in 1905 that will be discussed later.

From October 23 to 29, Vauclain Jr. traveled to western Japan with a person-in-charge from Frazar to visit clients including Kyushu Railway, Sanyo Railway, Kisha Seizo, Osaka Municipal Railway, and Kansei Railway. On October 25, they met in Moji with Sengoku and Sojirō Suzuki, the production section chief of Kyushu Railway, to discuss products such as rolled steel wheels, compound locomotives, tires, springs, forgings, and axles. Vauclain Jr. provided a detailed explanation of Baldwin's advanced compound locomotives and assured his clients that delivery could be made within three months, as it took only six weeks from the date of order to shipment from Philadelphia. For Kyushu Railway, he also presented price estimates for locomotives that Baldwin had previously supplied to the Sanyo Railway, including the 2-6-0 and 4-4-2 models as well as the 4-6-0 compound, to illustrate the market prices. He further learned during this meeting that Kyushu Railway planned to procure 500 coal cars and communicated this information to Baldwin.⁵⁵

At 10:00 a.m. on October 28, Vauclain Jr. visited the Sanyo Railway Hyogo Works in Kobe and met again with Iwasaki and Ishihara to discuss rolling stock components, including compound locomotives, wheels, and axles. During the meeting, he presented the Willis Report—a document detailing tests on Mallet- and Vauclain-type compound locomotives—and used it to promote Baldwin's products. Meanwhile, he learned that Sanyo had abandoned plans to procure 4-6-4 type compound locomotives, intended for coal transport trains, because the locomotives were too long to fit the turntable, and their axle load exceeded the weight the bridges could support. In response, Sanyo requested a quotation for a replacement locomotive capable of hauling the maximum permissible load while adhering to the government-permitted axle load limit of 12.18 tons for that line. They specifically asked for price and delivery time estimates for several types of Vauclain and Mallet compound locomotives. Vauclain Jr. accepted this request and informed Iwasaki that “a locomotive could be obtained quickly and very cheaply just now,” urging him to make the purchase.⁵⁶

A letter dated October 10 from S. M. Vauclain stated: “Business is very dull here just now. We are doing very little, but business is looking better.” This indicates that Baldwin's order situation remained poor as of October 1904.⁵⁷ Consequently, locomotive prices had

⁵⁵ “Japan Diary,” October 25, 1904; see also the entry for the same date in “Japan and Australia Diary.”

⁵⁶ “Japan Diary,” October 28, 1904; see also the entry for the same date in “Japan and Australia Diary.”

⁵⁷ Letter from S. M. Vauclain to Vauclain Jr., October 10, 1904, SMVJ papers.

fallen and delivery times had shortened. Vauclain Jr. emphasized that it was “a good time to buy” for railways, the primary customers for locomotives. However, Iwasaki responded: “The Government has asked the Railway not to buy foreign materials during the war. The Sanyo board of directors has forbidden him to do so.” As the government controlled the procurement of materials from overseas during the war, private railways had no choice but to refrain from purchasing locomotives for the time being.⁵⁸ There is no doubt that the wartime boom made the Japanese market attractive for American locomotive manufacturers. Nevertheless, due to the specific constraints of the wartime period, as will be discussed later, private railways had limited freedom to procure locomotives, forcing manufacturers and their agents to navigate a difficult situation.

On the same day, Vauclain Jr. traveled from Kobe to Osaka to revisit Hiraoka, the vice president of Kisha Seizo. During this visit, Hiraoka provided the specifications, parts lists, and design drawings for the locomotives being manufactured, and he further requested that Vauclain Jr. estimate the cost of materials for a single locomotive. Although Kisha Seizo initially sourced specialized vehicle parts from the UK, they planned to switch to American-made alternatives. Railcar parts were a key product for Baldwin, alongside locomotives, and the Japanese locomotive manufacturers reliant on imported parts at the time were considered major customers on par with the railway companies themselves.

Following this, Vauclain Jr. visited the Osaka Municipal Railway to discuss a bid for bogie trucks for streetcars. He then met with the purchasing manager and consulting engineer of the Kansei Railway and secured a verbal commitment that, if Baldwin manufactured the new locomotives based on British designs, the company would be allowed to participate in the next tender for them. Since many Japanese railways had commenced operations with British technology, they preferred British-style designs for locomotive maintenance and operational convenience. Consequently, when American manufacturers sought to sell locomotives and parts, the ability to incorporate British-style designs became a critical factor. For instance, in 1901, the American Locomotive Company was unable to participate in a tender for the IGR because its headquarters refused to approve a sales rep’s request to switch to a British-style design.⁵⁹ In contrast, Baldwin flexibly modified product designs to meet customer requirements because its sales engineers, dispatched to the field, could create blueprints for design changes themselves. This adaptability was considered one of Baldwin’s strengths, as it relied on

⁵⁸ “Japan and Australia Diary,” October 28, 1904.

⁵⁹ See the case of W. C. Tyler in Nakamura, “Reconsidering the US-Japan Trade in Railroad Equipment,” 23.

in-house sales engineers rather than external sales reps.

All through November, Vauclain Jr. continued to make key client visits. From November 15 to 18, he traveled to Tokyo each day to meet with organizations including the Army Nakano Railway Battalion, the Kōbu Railway, the Railway Operation Bureau, the Ministry of Transportation and Communications, and the Tokyo Electric Railway. On November 16, he visited the Kōbu Railway, which had just completed the electrification of the Nakano–Iidabashi section and was planning to procure ten electric locomotives. This meeting resulted in the railway agreeing to send the necessary specifications, while Baldwin would prepare a quotation.⁶⁰ Baldwin, as one of the earliest manufacturers of electric locomotives since the end of the nineteenth century, was well-equipped to meet such demands.⁶¹

On November 17, Vauclain Jr. visited the Railway Operations Bureau, which operated the IGR, and met with Seikichirō Hata, the head of the Locomotive Division. During this meeting, a Frazar agent requested that Hata approve modifications to the locomotive specifications that J. U. Crawford, a US-based consulting engineer for the IGR, had endorsed. However, Hata rejected this request.⁶² Subsequently, on November 18, Vauclain Jr. visited the Ministry of Transportation and Communications, where he met with Kazutsugu Yamanouchi, the director of the Railway Bureau, as well as the famous mechanical engineer Yasujirō Shima—later the head of the Manufacturing Section at the Railway Agency—and presented them with catalogs and design drawings for rolled wheels.

In wartime, maintaining relationships with the government, which handled military procurement, had become crucial for the railway business. To facilitate this, Vauclain Jr. began establishing contacts with government agencies including the Army, the Railway Operation Bureau, and the Ministry of Transportation and Communications. However, as a foreign trading company, Frazar had weaker ties to the government compared to Mitsui & Co., the local agent for Baldwin's competitor, ALCO, which presented obstacles for Baldwin to build these important relationships.⁶³

From November 23 to 30, Vauclain Jr. traveled again to western Japan on business,

⁶⁰ "Japan and Australia Diary," November 16, 1904.

⁶¹ The first Baldwin electric locomotive exported to Japan was a small 0-4-0 class electric locomotive delivered to the IGR in 1899 through the mediation of Takada & Co. "Register of Engines, Made by Burnham William & Co." and "Order Book," 1899, Archives Center, National Museum of American History.

⁶² "Japan and Australia Diary," November 17, 1904.

⁶³ Nakamura, *Trading Locomotives*.

visiting Kyushu Railway, Hakata Bay Railway, and Kansai Railway. On November 25, he met again with Sengoku and Suzuki of Kyushu Railway, who agreed to send him the design drawings for 500 coal freight cars that they planned to procure.⁶⁴ Later, from December 7 to 12, he traveled to Hokkaido via Nippon Railway and visited Otaru, where he inspected the Temiya and Iwamizawa factories of Hokkaido Colliery Railway.

Since Vauclain Jr.'s diary ends in 1904, details regarding Baldwin's locomotive sales efforts after 1905 remain unclear. However, a letter from his father addressed to him and dated January 9, 1905, mentions an order from Japan for locomotives intended for use on the Korean Peninsula.⁶⁵ This suggests that marketing activities continued beyond the diary's last entry.

In April 1905, Baldwin sent a sales engineer to Japan to succeed Vauclain Jr.⁶⁶ While the exact date of Vauclain Jr.'s departure is unknown, it is likely that he left Japan in late May or early June 1905, when he appeared to be in poor health; he was accompanied by his mother and fiancée, who had just arrived for a trip to China.⁶⁷ A year of grueling work in an unfamiliar environment may have taken a toll on his health.⁶⁸ Given that he initially stated his term would last two years, it is clear his departure occurred earlier than planned.

4. A Sales Engineer's Roles: Vauclain Jr.'s Achievements

⁶⁴ "Japan and Australia Diary," November 25, 1904.

⁶⁵ S. M. Vauclain wrote: "he also advises me of an inquiry from Japan for 29-10-26 1/4 D's, duplicates of those that we have heretofore sent to Korea." Letter from S. M. Vauclain to Vauclain Jr., January 9, 1904 (received January 30), SMVJ papers.

⁶⁶ Letter from S.M. Vauclain to Vauclain Jr., April 25, 1905, SMVJ papers.

⁶⁷ Letter from S.M. Vauclain to Vauclain Jr., April 25, 1905, SMVJ papers: "I am overjoyed to know that you are rapidly gaining health and strength. I am also glad to feel that you are returning home with your Mother, Peggy, & Hilda." According to a letter from Hilda, Vauclain Jr.'s fiancée, they had departed California in February, arrived in Japan in March via Honolulu, and had planned to travel to China. Letter from Hilda to Vauclain Jr., November 8, 1904. This letter contains a passage in which Hilda expresses uncertainty about whether she should remain in Japan for the remaining year of Vauclain Jr.'s term, which confirms that his term was scheduled to last two years.

⁶⁸ After returning home, he worked as an engineer for Baldwin under his father, but he contracted tuberculosis and passed away in 1913. Samuel M. Vauclain and Earl Chapin May, *Steaming Up ! The Autobiography of Samuel M. Vauclain* (Brewer & Warren Inc., 1930), 194-200; TJ10-V3-A3, Southern Methodist University Library.

After returning from Australia, Vauclain Jr. traveled nonstop throughout Japan to meet with clients. His wide variety of destinations included major railway companies, government-run steel mills, government agencies, electric railway companies, and rolling stock manufacturers. The purposes of these visits were equally diverse, encompassing participation in bids, discussions about order details, information exchanges, gathering market intelligence, and confirming contract terms. Notably, the orders Vauclain Jr. received included not only locomotives but also a range of rolling stock components. After a manufacturer sold a locomotive to a railway company or a similar organization, these customers typically placed ongoing orders for maintenance parts. To secure these orders, in Baldwin's case, a person-in-charge from Frazar regularly visited customers, often in Vauclain Jr.'s company. On such trips, Vauclain Jr. would have the chance to meet with top-level engineers such as the presidents or heads of locomotive divisions. These meetings were worthwhile for railway engineers, as the technical information provided by sales engineers from manufacturers was extremely valuable. Furthermore, Vauclain Jr.'s status as the eldest son of S. M. Vauclain—Baldwin's vice president and general manager, as well as a world-renowned engineer—certainly made him a valuable contact for top management. Consequently, despite being only 24 years old, he achieved significant success in promoting products within the Japanese market. Baldwin secured numerous orders due to the vigorous marketing he carried out with Frazar's assistance during the nine months from April to December 1904 that he spent in Japan. In a letter to his son, Vauclain expressed his satisfaction with these efforts, writing that Baldwin "seem[s] to be getting all of the Jap trade. It is my hope that you will, by your gentleness and thoroughness, bind the Japanese trade to us for all time to come."⁶⁹

To verify this praise, let's examine Baldwin's locomotive orders in Japan during this period, as shown in Table 1. By the time Vauclain Jr. was assigned to Japan, Baldwin had already delivered a substantial total of 76 steam locomotives to the Keifu and Keigi railway companies, which were rushing to construct the Trans-Korean Railway in preparation for the Russo-Japanese War. The locomotives ordered for Korea during this time were shipped via the overland transcontinental railway route to minimize transit times, emphasizing the urgency of the situation.

Baldwin was known for short lead times, and a decline in domestic orders in the United States allowed for deliveries within about one month. This gave Baldwin a competitive edge over British and other manufacturers. As Vauclain Jr. noted during his *Telegraph* interview, this efficiency became a key factor in the company's early sales growth within

⁶⁹ Letter from S.M. Vauclain to Vauclain Jr., date unknown, 1904, SMVJ papers.

the Japanese Empire, including Korea.⁷⁰ The delivery of locomotives to the Korean Peninsula railways continued even after he arrived in Japan, totaling 66 units (including some under the name of the IGR) between April 1904 and January 1905.

The outbreak of the Russo-Japanese War immediately slashed imports of non-military locomotives into Japan. From February to September 1904, Baldwin received a mere 11 orders for locomotives destined for Japan, excluding military-use orders for the Keifu Railway, the Keigi Railway, and the Temporary Military Railway. This total included two locomotives for the Hokkaido Government, eight electric locomotives for the Besshi Copper Mine, and one small locomotive for the Atami Light Railway. During the same period, ALCO received orders for only four locomotives intended for Japan through Mitsui & Co.⁷¹ It is probable that government restrictions on the import of railway materials contributed to this stagnation in imports. At the onset of the Russo-Japanese War, Japan faced a severe shortage of foreign currency and was attempting to issue war bonds in London and other locations. However, negotiations proved challenging, and the prospect of securing funds did not improve until May 1904.⁷² Therefore, it is likely that, at least during the first half of 1904, imports of railway supplies—except those for the Korean railways, which had significant military importance—were restricted to conserve valuable foreign currency for military needs.

Between May and November 1904, the Japanese government successfully issued a total of £22 million in war bonds bearing an annual interest rate of 6%. This financial relief eased the constraints on foreign currency. Subsequently, the period from late 1904 to early 1905 saw a surge of orders from various railways that Vauclain Jr. had marketed to, including the IGR, the Hokkaido Colliery Railway, the Sanyo Railway, and the Yawata Steel Works. Furthermore, after January 1905, when the tide of the Russo-Japanese War shifted following the fall of Port Arthur, the Japanese government decided to convert the South Manchuria Branch Line of the occupied Chinese Eastern Railway to narrow gauge (3 ft 6 in) for use as a military railway in Manchuria. To facilitate this, they placed simultaneous orders for the necessary 0-6-2 tank locomotives with manufacturers in the

⁷⁰ “These contracts have been undertaken by Japanese companies, and we have already supplied them with between 70 and 80 locomotives....Before the war we had taken the order for these locomotives.” See “Interview with Mr. S. M. Vauclain.”

⁷¹ Nakamura, *Umi wo wataru kikansha*, 192. The breakdown was one locomotive for Kyushu Railway and three locomotives for an unknown purchaser (brokered by Takada Shōkai).

⁷² Ministry of Finance, Japan, ed., *Meiji Taishō zaiseishi* [Fiscal history of the Meiji and Taisho periods], vol. 12, *Kokusai (ge)* [National debt, part II] (Zaisei Keizai Gakkai, 1936–1940), <https://dl.ndl.go.jp/pid/1446986/1/1>.

United States, the United Kingdom, and Germany. In May 1905, Baldwin received a large order for 200 locomotives from the IGR.

Although Vauclain Jr. traveled to Japan for only a single year, he worked alongside his Frazar colleagues to seize business opportunities during the war. As Table 1 shows, they secured 336 orders from May 1904 to May 1905. In comparison, their competitors—the North British Locomotive Company and ALCO—received only 174 and 24 orders respectively. This highlights just how exceptional their performance was.⁷³

Of critical importance is the fact that Vauclain Jr. was strictly an employee of Baldwin and independent of Frazar. This enabled him to occasionally report on Frazar's situation back to headquarters, the value of which grew particularly evident in the “monopolizing” of Frazar by the British merchant bank Sale & Co. On December 2, 1904, Vauclain Jr. submitted a report to his father that included his opinion on Sale & Co. In response, S. M. Vauclain sternly cautioned against any involvement with the local agency:

In regard to Sale & Co. monopolizing Frazar, please go slow and do not become involved in any controversy over the matter. This is something that Mr. Johnson will have to deal with, and as you will not have long to remain there I do not want you to mix in the matter at all. Keep quiet and see that your remarks do not refer to this arrangement in any way in which exception could be taken thereto.⁷⁴

From this quote, it is clear that Vauclain sought to approach corporate acquisitions cautiously to maintain a strictly professional relationship with local agents. For Baldwin, which had just started its overseas marketing efforts, entering the market on a large scale and with local investments entailed significant risks. It is reasonable to conclude that, at this stage, the company saw the combining of sales engineers with local distributors as the most effective strategy.

Conclusion

In closing, it is instructive to examine Vauclain Jr.'s marketing activities as a Baldwin

⁷³ Nakamura, *Umi wo wataru kikansha*, 187, 192.

⁷⁴ Letter from S. M. Vauclain to Vauclain Jr., January 9, 1904 (received January 30), SMVJ papers. Following this quotation, he mentions that he read Vauclain Jr.'s letter dated December 2.

sales engineer in comparison with those of W. C. Tyler, a sales representative at the rival company ALCO.

First, as marketing through sales engineers relied on local agents, it can be classified as indirect marketing, similar to the use of sales representatives. S. M. Vauclain, as vice president of Baldwin, explicitly instructed his son, a sales engineer, that Frazar, the manufacturer's agent, was the primary player in Baldwin's marketing efforts in the emerging Japanese market. The sales engineer sent from headquarters primarily served as a technical advisor. In this regard, Vauclain Jr.'s role was similar to that of W. C. Tyler, the independent sales representative dispatched to Japan by ALCO. As noted by Brown (1995), Baldwin had already established an office in London and was conducting sales activities in Europe. While Baldwin engaged in direct marketing in mature markets, it used indirect marketing through local agents in emerging markets such as Japan.

On the other hand, unlike ALCO, Baldwin sent its own employees into the field as sales engineers. This strategy afforded efficiency not only in selling products but also in gathering information about market conditions and local networks. Baldwin could quickly incorporate this information into its sales strategy, giving the company a competitive edge over British manufacturers that had completely outsourced their sales activities to trading companies, while ALCO had to rely on indirect information from independent sales representatives. As a result, Baldwin achieved a near-monopoly during the tense circumstances of the Russo-Japanese War.

Vauclain Jr. had a unique position as the son of a Baldwin executive. This relationship elevated him from a mere sales engineer and eased his work in building connections with clients, securing meetings with high-ranking executives, and gleaning valuable information. The insights he collected were then communicated directly to Baldwin's management through a private channel with his father. Therefore, Vauclain Jr.'s role extended beyond simple product promotion: it became an indispensable element in shaping Baldwin's overseas strategy. In particular, his long-term business trip to Australia allowed him to evaluate and express skepticism about the Australian market's potential. Regardless of whether his assessment was accurate, this perspective is likely to have exerted influence on Baldwin's strategy in that territory. This case highlights the intriguing role of personal factors in the global expansion of American manufacturing.

Baldwin's success in the Japanese market cannot be attributed solely to Vauclain Jr.'s particular attributes. As previously noted, his predecessor, W. H. Crawford, assisted in paving a path for Japanese railways to accept American locomotives. Crawford also helped to develop new locomotive models, exemplified by the Mikado type, to meet local demands. Baldwin's flexible approach to design changes, facilitated by dispatching

its engineers to the site, lent it considerable strength.

Lastly, I would like to discuss Vauclain Jr.'s evolving perspective on Japan. When he first arrived, he viewed the Japanese people as "foxy" and felt averse to collaborating with them. However, over subsequent months of working together, his attitude grew more positive, a shift undoubtedly facilitated by the warm hospitality he received during his time in Japan. As Vauclain Jr.'s diary shows, his hectic year of marketing activities in Japan was challenging, rewarding, and filled with enjoyable experiences. Unfortunately, his health deteriorated, forcing him to return to the United States before the end of his assignment.⁷⁵ His work compels us to recognize that dedicated efforts by American sales engineers were key to the early stages of American manufacturing's global expansion.

⁷⁵ Back at headquarters, Vauclain Jr. held the title of assistant superintendent, a core position within Baldwin's engineering department that showed the company's high regard for his achievements in Japan despite the truncation of his term there. Letter from Burnham, Williams & Co. to Vauclain Jr., December 17, 1906, SMVJ papers.

Table 1 Baldwin's Locomotive Orders from Japan in 1904–1905

Order date	Purchaser	Intermediary	No. of cars	Axis layout	Track gauge	Shipment	Note
1903/2/28	Seoul Fusan RLY	Frazar	3	2-6-2	4ft 8,1/2in	1904/1/19	
1903/9/23	Seoul Fusan RLY	Frazar	5	2-6-2	4ft 8,1/2in	1904/1/19	
1904/1/21	Seoul Fusan RLY	Frazar	30	0-6-0	2ft 6in	1904/2/25	For temporary railways, Overland
1904/1/21	Seoul Fusan RLY	Frazar	6	2-8-0	4ft 8,1/2in	1904/2/26	
1904/3/3	Seoul Fusan RLY	Frazar	24	0-6-0	4ft 8,1/2in	1904/4/18	Overland
1904/3/14	Seoul Wiju RLY	Frazar	8	2-6-2	4ft 8,1/2in	1904/4/15	Overland
1904/4/15	Seoul Wiju RLY	Frazar	12	2-6-2	4ft 8,1/2in	1904/3/14	Overland
1904/	Bessi Copper Mine	Takata	8	0-4-0E	3ft 6in	1904/7/1	via Westinghouse Electric
1904/7/8	Atami Light RLY	Frazar	1	0-4-0	2ft 6in	1904/10/18	
1904/7/16	IGR	Frazar	4	2-6-2	5f	1904/10/18	For temporary military railway, Overland
1904/7/20	Seoul Fusan RLY	Frazar	3	2-6-2	4ft 8,1/2in	1904/10/21	
1904/7/20	Seoul Fusan RLY	Frazar	6	4-6-0	4ft 8,1/2in	1904/10/21	
1904/7/21	Hokkaido GR	Frazar	2	2-6-0	3ft 6in	1904/10/21	
1904/8/3	IGR	Frazar	25	0-6-0	2ft 6in	1904/9/25	For Seoul-Fusan temporary railways
1904/10/11	IGR	Frazar	14	0-6-2	3ft 6in	1904/12/4	
1904/12/31	Hokkaido Coal Mine RLY	Frazar	3	4-4-0	3ft 6in	1905/3/15	
1905/1/5	IGR	Frazar	20	2-6-2	4ft 8,1/2in	1905/3/8	
1905/2/4	IGR	Frazar	27	0-6-0	2ft 6in	1905/4/27	For Seoul-Fusan temporary railways
1905/2/22	Sanyo RLY	Frazar	5	2-6-2	3ft 6in	1905/6/8	Vauclain baranced compound locomotives
1905/5/11	IGR	Frazar	150	0-6-2	3ft 6in	1905/7/13-10/26	Related to the South Manchuria Branch Line of the Chinese Eastern Railway
1905/5/19	Imperial Steel Works	Frazar	6	0-4-0	3ft 6in	1905/7/12	
1905/5/19	IGR	Frazar	50	2-8-0	3ft 6in	1905/9/4-11/13	

Source: 'Steam Locomotive Order Books' (1904-1905), Baldwin-Hamilton Company Records, MG-427, Pennsylvania State Archives.

Notes: (E) is an electric locomotive.

Overland is by transcontinental railroads; all others go through the Suez Canal.