

Trading locomotives between the US and Japan:

A case of Okura & Co. around
the turn of the 19th and 20th centuries

July 2022

ISS Discussion Paper Series

F-198

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Abstract

This paper examines international transactions related to steam locomotives around the turn of the 19th and 20th century while focusing on Japanese trading companies. In particular, this study considered how Japanese trading companies acquired the knowledge and know-how of locomotive trading to carry out their business transactions in detail by using the example of Okura & Co.'s New York branch office. As a result, this paper investigated the following three highlighted factors that supported Okura & Co.'s locomotive trade in New York:

①Regarding Okura & Co.'s acquiring process of the trading know-how, they took advantage of business opportunities by collecting information through networks of Japanese in New York and local experts.

②The social infrastructures, such as international communication, transportation, and financial system were significant for the fundamentals of the overseas activities of Japanese trading companies.

③The role of a formerly hired foreigner as a consulting engineer was critical. The overseas activities of Japanese trading companies were also supported by former foreign engineers who had technological knowledge and networks. It was also one of the essential routes of knowledge transfer in cross-regional commercial management.

Introduction

The aim of this paper is to investigate international transactions related to steam locomotives around the turn of the century while focusing on Japanese trading companies. In particular, this study considers how Japanese trading companies acquired the knowledge and know-how of locomotive trading to carry out their business transactions in detail. It would be an essential contribution to consider knowledge transformation in cross-regional commercial management.

When thinking about the development of the railways, which represents infrastructure, it is essential to ask how and to whom the necessary materials were supplied for the industry. In particular, given that steam locomotives represented a collection of various cutting-edge technologies, Japan experienced difficulties achieving self-sufficiency in terms of steam locomotives prior to World War I. In those days, therefore, the importation of locomotives was essential for the development of Japanese railways. Accordingly, the above questions can be replaced by how steam

locomotives and their parts were able to be imported smoothly¹. To answer these questions, we have to investigate the nature of business transactions related to locomotives while focusing on the activities of trading companies mediating these transactions.

Machinery trades by trading companies played a significant role in developing modern industries in East Asia, including Japan. The production of high-precision machinery was technically difficult in Japan from the late 19th century to the early 20th century. It was even difficult for the public to obtain information about such products. Trading companies, therefore, contributed to industrialization by introducing information about foreign products to Japan and procuring the machinery necessary for their domestic customers from overseas. This role was played by foreign trading companies that were well informed about the machine-producing countries in the late 19th century. However, by the turn of the century, Japanese trading companies had cultivated capabilities for foreign trade and began to replace their foreign counterparts². How did they accumulate knowledge and know-how related to the foreign trade of machinery? This is one of the core research questions in this paper.

The export of locomotives to Japan around the turn of the century can be characterized by the emergence of American locomotive manufacturers and Japanese trading companies. Until the early 1890s, the railway market of Japan was monopolized by British makers and its trading companies. However, from the end of the 1890s, the American makers and Japanese trading companies entered the market and expanded its share rapidly. Therefore, we have to explain the relationship between the two. Below, we explore this question through the examples of Okura & Co., a mid-sized general trading company in Japan renowned for its role in the machinery trade during the Meiji era.

The most famous Japanese trading company was Mitsui Bussan (Mitsui & Co.), a leading trading company before WW II. It was the core company of Mitsui Zaibatsu, the most influential financial group in Japan at that time. However, their market share was not so high because the Japanese locomotive market was very competitive³. Their

¹ One of the reasons of this phenomenon was the increased machinery trade that accompanied the deepening of the first global economy. On the development of the first global economy, see G.Jones, *Multinationals and Global Capitalism* (Oxford University Press, 2005).

² In contrast, Chinese traders cooperated with the foreign trading companies to procure machinery and conduct the modern business. Therefore, foreign trading companies remained the leading players in the machinery trade in China. See Y.Lin, "Cross-national Trade and Cultural Brokers", *Taiwan Historical Research*, vol. 27 no.4 (2020), pp.56-58, 66.

³ N.Nakamura, *Umi wo wataru kikansha* (Locomotives from across the sea) (Yoshikawa kobunkan, 2016), p.181.

competitors were not only foreigners, but also many Japanese medium-size trading companies. In the field of the machinery trade, the role of medium-sized trading companies that specialize in this field has been significant, and even Mitsui & Co. has struggled to expand its market share. One reason for this is that the machinery trade is highly specialized, and the personnel of trading companies with experience in handling machinery were essential. Okura & Co. had such specialists. For instance, Kadono Chokuro (director and general manager of the London branch), who had a background as a railway engineer, was a typical example of such a person.

The historical study of the Japanese trading companies has traditionally focused on large trading companies such as Mitsui & Co.⁴ In contrast, studies of medium-size trading companies such as Okura & Co. have been slight, and their actual substance and role have been neglected. Therefore, this paper investigates the factors enabling Japan's medium-size trading companies to be active in foreign trade, using Okura & Co. as a case study.

Regarding this subject, Steven J. Ericson's works are essential references for understanding the process of locomotive importation in Japan and are direct predecessors to this paper⁵. In these papers, Ericson examined marketing activities by American locomotive manufacturers in Japan and competition among British, American, and German locomotive manufacturers in the Japanese market based on the notebook (1901-02) of Willard C. Tyler, who was a sales representative of the American Locomotive Company and the other railway equipment makers. Therefore, Ericson's papers investigated the locomotive trade from the viewpoints of the U.S. makers and intermediaries. In contrast, this paper focuses on the activities of the Japanese trading company. By cross-checking this with Ericson's studies, we can clarify the overall picture of the development of trading locomotives between the United States and Japan.

1. Japan's railways and locomotive trade

(1) The development of Japan's railways

In 1872, the first railway in Japan operated by the government opened from Shinbashi to Yokohama with the introduction of British capital, technology, and

⁴ K.Uyeyama, *Hoku Bei niokeru sogo shosha no katsudo* (The activities of general trading company in the North America) (Nihon keizai hyoron sha, 2005); S.Asajimai, *Senzen ki Mitsui bussan no kikai torihiki* (Mitsui bussan's machinery trade in the per-war era) (Nihon keizai hyoron sha, 2001).

⁵ S.J.Ericson, "Importing Locomotives in Meiji Japan", *Osiris*, no.13 (1998) and S.J.Ericson, "Taming the Iron Horse", in *Public Spheres, Private Lives in Modern Japan, 1600-1950*, (eds.) G.Bernstein, A.Gordon, and K.Nakai (Harvard University Press, 2005).

materials. Japanese and Chinese railways shared a common starting point in that the construction of their railways was mainly financed by loans from Great Britain and other powers that be. However, in the 1880s, Japan's railways succeeded in breaking away from its financial dependence on the British by raising funds widely from wealthy domestic people such as merchants and landowners. In addition, at the same time, they were also cultivating their technological ability. Therefore, Japan could procure railway materials freely from all over the world since the late 1890s⁶.

From the late 1880s to the 1890s, many private railways were established nationwide in Japan. The railway booms played a central role in Japan's industrial revolution. In 1900, there were five big railway companies and 36 middle- and small-size railway companies in Japan. The number of locomotives under private operation was more than twice that under government operation⁷. The development of private railways led to the diversification of nationalities of locomotives. This is because they sought to procure the best locomotives from around the world as cheaply as possible without being constrained by precedent. During the railway booms, a more significant number of new railcars were imported from the U.S., and the American locomotives dominated the Japanese market⁸.

Moreover, the competitive world locomotive market and the intermediary role of trading companies made their global procurement possible. For small and medium-sized railway companies with limited technological capabilities, the role of trading companies in procuring materials was significant. And medium-size trading companies played essential roles in those trades.

(2) Social infrastructure for locomotive trade

When examining the activities of mid-size trading companies, such as the Okura & Co., we must consider the underlying social infrastructure —communication, transportation, and financial infrastructure— supporting their activities. The Okura & Co. New York office was established in 1901, right around the time that the transportation and information network connecting East Asia and North America was starting to rapidly develop. In 1896, Nippon Yusen negotiated and entered into an

⁶ Chinese railways depended on the foreign capital and technology at least until after World War 1. See E.Köll, *Railroads and the Transformation of China* (Harvard University Press, 2019).

⁷ The number of locomotives under private operation was 892 cars and under government operation was 387 cars. M.Sawai, *Nihon testudo sharyo kogyo shi* (A history of Japan's railcars industry) (Nihon Keizai hyoronsha, 1998), p.16.

⁸ From 1888 to 1907, 906 locomotives were imported from the US to Japan. At same time, the imported number of British locomotives were 871 and German locomotives were 160. See Sawai, *Nihon testudo sharyo kogyo shi*, p.27.

agreement with the Great Northern Railway to connect land and sea service and launched a Japan-Seattle route. In 1898, Toyo Kisen concluded a similar connection agreement with the Southern Pacific Railroad and launched a sea route from Hong Kong to San Francisco. The establishment of these transpacific shipping routes enabled Japanese trading companies in New York to frequently exchange mail with their head office in Japan.

With regard to freight transport, numerous new shipping companies connecting New York and East Asia via the Suez Canal entered the market in rapid succession from 1901 to 1902, leading to the creation of regular shipping routes using new, faster steamships. As a result, the time required to ship freight between New York and Yokohama shrank from four to three months. The shipping frequency increased to approximately 1.7 ships per month.

Meanwhile, with regard to foreign bill of exchange, which were essential to the trading business, the Yokohama Specie Bank took care of Japanese trading companies, even providing bridge loans when necessary. Further, the promotion of the Japanese consul in New York to a consulate-general in 1902 led to the complete protection of Japanese expatriates and more information for Japanese companies doing business in the U.S. By using this external infrastructure, Okura & Co. was able to open a branch office with minimal human resources and funds.

2. Okura & Co. and trade in railway materials

Okura & Co. (President: Okura Kihachiro) was established in 1893, with international trade as its primary business, and sought to engage in the purveyor business and the mining industry. They had only one overseas branch in London at its founding but had agents in San Francisco, New York, Paris, Berlin, Melbourne, Sydney, Colombo, Calcutta, Bombay, Shanghai, Tianjin, and Hong Kong. In Japan, in addition to its head office in Tokyo, Okura & Co. had six domestic branches, a leather manufacturing plant, and a gun shop. The director of the London branch office was Kadono Chokuro, a former railway engineer who transferred to the merchant of industrial goods. Kadono was responsible for supervising agents in Europe and the United States from his office in London.

Okura & Co. began brokering locomotives with its purchase of 48 British locomotives (Dübs' 0-6-2 tank) in 1901-1902 for the IGR⁹. At around the same time,

⁹ Dübs & Co., *General Particulars of Engines, Tenders*, Dübs records 3/1/1-2 (in Glasgow

Okura & Co. purchased six British locomotives (Nasymth's 2-4-2 tank) for the Government-General of Taiwan¹⁰. From this, it is evident that Okura & Co.'s trade in railway goods began in earnest with British goods. In 1901, the group established a branch in New York with the goal of brokering the sale of American-made machinery and railway goods.

The New York office was opened on Broadway and, working with the London branch office, engaged mainly in the trade of machinery. The first branch director, Yamada Majiro, joined Okura & Co. after graduating from Tokyo Higher Commercial School in 1894¹¹ and, after engaging in the machinery trade in the London office¹², made his way alone to New York with the mission of opening up a branch office. Yamada left a "letter book" from his time in London and, when he first moved to New York, left numerous copies of business correspondences with the Tokyo head office overseas department and others in a tracing paper booklet that was titled *Domestic Letters 1900-1901*¹³. He subsequently left eight volumes of tracing paper booklets containing copies of correspondences with the Tokyo head office (No. 1 (1901-2) to No. 8 (1904-5)) titled *Tokio Letters*¹⁴. Analysis of these correspondences provides insight into the detailed activities of Okura & Co.'s U.S. branch during the Meiji era that were not revealed by in previous studies¹⁵.

3. Okura & Co.'s activities in New York: A case of the Hokkaido Government Railways tender

Yamada Majiro, a staff of Okura & Co.'s London branch office, arrived in New York on April 12, 1901, and was tasked with opening up a branch office¹⁶. Yamada began

University Archives).

¹⁰ Nasmyth Papers, *Loco Specifications 1867-1922*. This trade was in 1901-1902, too.

¹¹ Yamada Majiro was born in Wakayama Prefecture, Japan in 1870. He became the Okura gumi vice president for business affairs (as of December 1917), president of Okura & Co., and member of Okura gumi board of directors. See Kojunsha, *Nihon shinshiroku Showa 16 nen han (Who's Who 1941)* (Kojun sha, 1941), "ya" column p.111.

¹² *No.1 Domestic Letters 1900-1901*, p.17, RG131/A1/Entry-123/Box-838 Okura, (in NARA at College Park).

¹³ RG131/A1/Entry-123/Box-838 Okura.

¹⁴ RG131/A1/Entry-124/Box-856 and 857 Okura.

¹⁵ The major study of Okura gumi is Okura zaibatsu kenkyukai, ed., *Okura zaibatsu no kenkyu* (A study of the Okura zaibatsu) (Kondo Shuppan, 1982).

¹⁶ "A letter from Yamada to Yorikichi Uchiyama, April 20, 1901," *No.1 Domestic Letters*,

enthusiastically collecting information immediately after arriving in New York and conducting full-fledged business activities after opening an office on Broadway on June 9¹⁷. At the time of launch, Okura & Co. the New York branch office consisted of one branch director, one typist, and one messenger boy. For the next 10 months, Yamada carried out all aspects of work by himself¹⁸. He vigorously visited journalists of American industrial magazines, such as *The Iron Age*, to get technical and industry information related to the machinery trade¹⁹. The first major job for the New York office was the purchase of six locomotives for the Hokkaido Government Railways. Here, let us take a detailed look at the steps leading to this purchase.

On June 10, 1901, the Hokkaido Government Railways issued the call for tenders regarding the procurement of 6 locomotives and other railway equipment in relation to facilities enhancement accompanying route expansion²⁰. The request for a quote for this tender arrived at the New York branch office sometime between July 13 and 15, over a month after the initial announcement. Upon receiving the notice, Yamada issued requests for quotes to major American locomotive manufacturers and railcar component manufactures from July 15 and 17.

Right around the time, the American locomotive manufacturing industry was undergoing large-scale consolidation, resulting in the merger of eight locomotive manufacturers centered around Schenectady Locomotive Works in July 1901 and the establishment of the American Locomotive Company (ALCO). This merger narrowed the field of major American locomotives to just three companies: ALCO, Baldwin Locomotive Works (Baldwin), and Rogers Locomotive Works (Rogers). Yamada sent the information regarding this change to London branch office and to the Tokyo head office on July 20 and 23, respectively²¹. In this letter, he mentioned that the ALCO vice president and head of the sales department were from Schenectady Locomotive Works

p.32.

¹⁷ “A letter from Yamada to Tokyo head office, oversea department” (June 10, 1901), *No.1 Domestic Letters*, pp.193-194.

¹⁸ “A letter from Yamada to Tokyo head office, overseas department” (February 5, 1902), *Tokio Letter No.2 (1902)*, pp.103-104, RG131/A1/Entry-124/Box-856 Okura.

¹⁹ N.Nakamura, “Okura-gumi New York shiten no shido to testudo-yohin torihiki” (The establishment of Okura & Co.’s New York branch and the trade of railway materials), in *Senzen ki Hoku Bei no Nihon shosha* (Japanese trading companies in the North America during the pre-war period) (eds.) K. Uyeyama and Y. Kikkawa (Nihon keizai hyoron sha, 2013).

²⁰ *Kanpo*, no.5379, (June 10, 1901), p.183.

²¹ “A letter from Yamada to Tokyo head office, overseas department” (July 23, 1901), *No.1 Domestic Letters*, pp.421-425.

and the information that Mitsui & Co.²², which had previously had many transactions and had strong connections with Schenectady Locomotive Works, was likely going to be treated as an agent for the East Asian region by the new company. It is for this reason that Yamada speculated that, even if ALCO provided a quote for the six locomotives in this tender to a company other than Mitsui & Co., the quoted price would not be an "honest price." Indeed, although Yamada visited ALCO repeatedly to conduct negotiations, in the end, he did not succeed in obtaining a price quote²³.

Just as Schenectady and Mitsui & Co. had formed a close partnership, Baldwin had built a strong business relationship with Frazar & Co., a mid-size American trading company, which had offices in Yokohama and New York²⁴. With regard to this tender, given that it was after Frazar & Co. had already requested a price quote, Yamada was also unable to obtain a price from Baldwin²⁵.

With regard to the third major locomotive manufacturer, Rogers had temporarily suspended business due to the passing of the company's former president. However, Yamada requested a quote from Rogers, explaining, "I have recently heard that a proprietor has been decided and that the factory will resume operations." However, Yamada also noted, "given the company's situation as I described, I do not expect that they will present us a quote"²⁶.

With the consolidation of the American locomotive manufacturing industry, the advantage of trading companies (Mitsui & Co. and Frazar & Co.) that had entered the market early and had developed long-term business relationships with the few remaining manufacturers only increased, leaving little room for late comers such as Okura & Co. For this reason, Yamada's initial attitude was pessimistic, as evidenced by his comment, "Unfortunately, I do not think we will be able to participate in this tender for six locomotives"²⁷.

However, on July 25, 1901, the Okura & Co. New York branch received a notification from Rogers stating, "We would very much like to provide a quote for the tender by the Hokkaido Government Railways for six locomotives." In response, Yamada

²² Japan's biggest general trading company before World War Second. Mitsui & Co. later became an agent for the American Locomotive Company.

²³ "A letter from Yamada to Tokyo head office, overseas department," (July 23, 1901). *No. I Domestic Letters*, pp.421-425.

²⁴ Nakamura, *Umi wo wataru kikansha*, pp.108-110.

²⁵ "A letter from Yamada to Tokyo head office, overseas department" (July 23, 1901).

²⁶ *Ibid.*

²⁷ *Ibid.*

requested Rogers to provide a price quote by the following Monday and, at the same time, requested the Tokyo head office to, "please consider the possibility of submitting a bid for the six locomotives based on the price from Rogers"²⁸.

Thereafter, on August 4, Yamada visited Rogers in Paterson, NJ, where he learned from the company president that "our plan is to produce an average of 200 locomotives per year," and saw that the factory had resumed operations²⁹. On August 6, a price quote from Rogers for six mogul-type (2-6-0) tender locomotives arrived. This quote and price quotes for other railway goods were promptly telegraphed to the Tokyo head office³⁰. Given that the per-locomotive price in this quote was USD 9,833 compared to the per-locomotive price offered by Rogers of USD 9,250³¹, it is believed that the difference, USD 583(6% of the per-locomotive price), would have been Okura & Co.'s commission (brokerage fee). Given that the average brokerage fee for railway goods around that time was 5%, this quote was in the reasonable range³².

When the tender was held by the Hokkaido Government Railways on August 10, 1901, Okura & Co. was awarded a contract for locomotives, wheels, axles, and springs. This news was sent the same day by telegraph to the New York branch office, and orders for the items were promptly sent out³³. Upon receiving news of the successful bid from the Tokyo head office, Yamada immediately sent a telegraph to Kadono in London and asked him to come to New York as soon as possible³⁴. In summoning Kadono, who had approval authority and know-how of machinery trade, to New York, Yamada, who suddenly found himself responsible for the New York branch's first major order valued at USD 70,000, was hoping to eliminate the time and effort needed to exchange information between New York and London and to facilitate the ordering process. Kadono did, in fact, arrive in New York on August 24, where he remained until

²⁸ "A copy of telegraph to Rogers" (July 25, 1901), *No.1 Domestic Letters*, 436, and "A letter from Yamada to Tokyo head office, overseas department" (July 28, 1901), *No.1 Domestic Letters*, pp.442-445.

²⁹ "A letter from Yamada to Kadono Chokuro" (August 4, 1901), *No.1 Domestic Letters*, pp.458-460.

³⁰ *Tokio Letter No.1*, p.16.

³¹ "A letter from Yamada to Tokyo head office, overseas department" (October 1, 1901), *Tokio Letter No.1*, pp.170-174.

³² As of 1898, Frazar & Co.'s brokerage fee for Baldwin locomotives was 5%. (Baldwin Locomotive Works, *Engine Orders, 1898-1900*, (in Smithsonian Institution Archives)).

³³ *Tokio Letter No.1*, pp.17-18.

³⁴ "A telegraph to Kadono" (August 10, 1901), *Tokio Letter No.1*, p.13.

September 17 when the order for railway goods had finally settled down³⁵. At a time when transportation and communication systems were still undeveloped, it was more efficient to have officers with approval authority travel to a location and make decisions on the spot rather than having to wait for each item to be approved by the head office.

4. State of the locomotive trade in New York

(1) Price negotiations

What were the procedures involved in ordering, delivering, and paying locomotives? We clarify the specifics of the locomotive trade through an examination of Okura & Co., New York branch office's activities.

In competitive tenders for railway materials, trading companies obtained price quotes from manufacturers and, after adding brokerage fees, submitted a bid based on the delivery date and specifications stipulated by the party issuing the tender. If a company successfully won a bid, it placed official orders with the manufacturers that had provided the price quotes. Strictly speaking, however, the manufacturers were not fixed at the time that a contract was awarded, and there was no rule that the manufacturers that had submitted the price quotes had to be used. It is for this reason that the Okura & Co. New York branch, after being awarded the contract for locomotives, etc. from the Hokkaido Government Railways, sent out new requests for price quotes from each manufacturer³⁶. In addition, Yamada, the manager of the New York branch, visited two major manufacturers, Baldwin and ALCO to solicit price quotes and to seek long-term business partnerships. However, the two companies expressed their intent to emphasize their long-standing trade relationships with Frazer & Co. and Mitsui & Co., extinguishing Yamada's hopes to obtain quotes. It is through this process that Yamada realized anew the importance of forming an exclusive trade relationship with Rogers, which had prepared the original price quotes. Since then, he had been a strong promoter of getting an agency agreement with Rogers³⁷.

Meanwhile, since the price of the winning bid (USD 9,833 per locomotive) was already fixed, any lowering of the product price would mean higher handling fees for

³⁵ “A letter from Yamada to Tokyo head office, overseas department” (August 30, 1901), *Tokio Letter No. 1*, pp.62-66, and “A letter from Yamada to Tokyo head office, overseas department” (September 20, 1901), *Tokio Letter No. 1*, pp.151-154.

³⁶ “A letter from Yamada to Tokyo head office, overseas department”, (August 13, 1901) in *Tokio Letter No. 1*, pp.21-24.

³⁷ Ibid.

Okura & Co. However, because Yamada's negotiations with Baldwin Locomotive Works and ALCO did not go well, it was not possible to know what the "market price" of a discount might be. As such, Yamada obtained information regarding the case of Schenectady locomotives purchased by Kyushu Railway from J.U. Crawford, who had previously been a hired foreigner for the Hokkaido Development Commission and had substantial experience working as an inspector of railway materials exported from the U.S. to Japan. This prompted Yamada to request a 5% discount from Rogers (discussed later in detail). However, negotiations regarding the discount did not end in success and, in the end, the order was placed with Rogers at the price that was originally quoted at the end of August³⁸.

(2) Delivery

That said, regarding the official ordering of locomotives for the Hokkaido Government Railways, the thorny issue of the delivery date remained. To begin with, according to the original tender, delivery to the Asahikawa port was to occur in February 1902 (4 locomotives) and April 1902 (2 locomotives)³⁹. Considering the time required for shipping, delivery to the New York port would have to be made in October and December 1901, leaving only two and four months from the time of ordering (August). This was a short lead time for locomotive production, for which the general rule was made-to-order production. With regard to lead time, American manufactures enjoyed a substantial advantage over British manufacturers, with the shortest and average lead times

³⁸ "A letter from Yamada to Tokyo head office, overseas department", (August 30, 1901), *Tokio Letter No. 1*, pp.62-66.

³⁹ *No.1 Domestic Letters*, p.374.

for the latter being three months (Neilson & Co.) and generally close to a year, compared to one month to three months (Baldwin). (Table 1).

Table 1 Comparison of delivery time between British and American locomotives

									Units: day
Year	Neilson & Co. (British)				Baldwin Locomotive Works(American)				
	Shortest	Longest	Average	No. of shipments	Shortest	Longest	Average	No. of shipments	
1893	122	214	183	12	64	174	129	25	
1894	90	118	105	12	38	158	66	30	
1895	109	109	109	6	38	62	53	13	
1896	180	302	240	18	30	70	55	31	
1897					36	102	58	115	
1898					61	83	68	7	
1899	290	390	340	32	105	105	105	9	
1900					185	302	234	8	

Source: Baldwin Locomotive Works, *Engine Orders* (in Smithsonian Institution Archives) and Neilson Co. *Engine Orders*, NBL/2/1/1 (in National Railway Museum)

Notes: Delivery time is the number of days from order to shipping, not including transportation days.

As such, given that British manufacturers would have had difficulty accommodating the short lead time of two to four months, it is suspected that this tender targeted American manufacturers from the beginning. That said, lead times of American manufacturers had also been increasing starting in 1899, owing to increased domestic demand. In 1900, Baldwin's average lead time was 234 days. Furthermore, exports of locomotives to Japan had started to decline as a result of the railway boom in the U.S., leading to Yamada's observation, "at any rate, during periods when orders for products bound for the domestic market are flourishing, as has been the case recently, small-volume low-margin exports bound for Japan are not preferred"⁴⁰. In fact, Baldwin Locomotive Works' exports to Japan fell dramatically from 115 locomotives in 1897 to less than ten in 1898⁴¹.

Given these circumstances, Okura & Co.'s Tokyo head office predicted from the start that the delivery date could not be met and instructed the manufacturer to submit a "letter explaining the reason for late delivery" to the Hokkaido Government Railways⁴². In

⁴⁰ "A letter from Yamada to Tokyo head office, overseas department, December 6, 1901", *Tokio Letter No.1*, pp.385-391.

⁴¹ Nakamura, *Umi wo wataru kikansha*, p.157. Japan experienced what is often referred to as the "second railway boom" between 1896 and 1899. The number of locomotives imported during this time increased from 1,621 in 1896 to 4,236 in 1897 before peaking at 4,266 in 1898 and subsequently falling back to 1,968 in 1899. For more information, see Sawai, *Nihon tetsudo sharyo kogyo shi*, p.26, Table 1-7.

⁴² "A letter from Tokyo head office to New York branch, August 10, 1901".

response, Yamada, assuming shipment from New York in January 1902 (delivery to Asahikawa in May 1902)⁴³, met with Rogers to come up with a reason for the late delivery. The "reason" that Yamada came up with was the strike by U.S. steel workers that had occurred in August 1901⁴⁴. Thanks to a letter from the Japanese consul in New York (with whom Yamada was friendly) certifying that the strike was a "general strike", the strike served as an acceptable "reason" for the delay even though in reality it was small scale⁴⁵. After discussing the propriety of this reason with Tokyo head office and Uchiyama Yoriyoshi (Okura-gumi Gun Shop) who had stopped by New York as part of a tour of Europe and the United States, in December of the same year, Yamada sent a "letter explaining the reason for late delivery" signed by Rogers to the Hokkaido Government Railways via the Tokyo head office. The reason was accepted, enabling the postponement of delivery of the first four locomotives by four months and delivery of the last two locomotives by two months⁴⁶. Following the same procedure, Yamada also requested that the delivery of other railway goods that were part of the awarded contract be delayed by one month.

Despite the postponement of the delivery date, difficulties procuring locomotive components caused the delivery to be further delayed. In some cases, penalties would be levied when the delivery of railway goods was delayed⁴⁷. In the case of railway goods, for which the associated handling fee rates were low to begin with, the application of a penalty could mean a substantial loss⁴⁸. For this reason, both the Tokyo head office and the director of the London branch, Kadono, paid close attention to locomotive delivery dates⁴⁹. To this end, Yamada visited the Rogers manufacturing plant, after which he

⁴³ "A letter from Yamada to Tokyo head office, overseas department", (August 13, 1901), *Tokio Letter No. 1*, pp.21-24.

⁴⁴ "A letter from Yamada to Tokyo head office, overseas department", (September 7, 1901), *Tokio Letter No.1*, pp.117-121.

⁴⁵ "A letter from Yamada to Tokyo head office, overseas department", (November 26, 1901), *Tokio Letter No. 1*, pp.348-352.

⁴⁶ "A letter from Yamada to Tokyo head office, overseas department", (November 2, 1901), *Tokio Letter No. 1*, pp.278-283.

⁴⁷ The Draft Contract for the Supply of Foreign Goods (September 1902) from the Hokkaido Government Railways stipulates the following: "Article 12. Compensation for late delivery shall be calculated as a proportion of the price of the good in question (n/1000) per day times the number of days from the next day of the end of the contract period to the eventual delivery date", Hokkaido tetsudobu ed., *Tetsudo bupo* (Report of the Railway Department), no.151, (September 30,1902), pp.1163-1164.

⁴⁸ Mitsui & Co., *Mitsui bussan shitencho kaigiroku 2 Meiji 36 nen* (Minutes of branch managers meetings in 1903, vol.2), p.20.

⁴⁹ "A letter from Yamada to the London branch of Okura & Co." (January 4, 1902), *Tokio*

urgently pressed the manufacturer to stay on schedule⁵⁰. Namely, both the manufacturer and the trading company worked frenetically to meet the delivery date of January 15, 1902.

Four locomotives were shipped from Rogers on January 27, 1902 and loaded onto the steamship *Satsuma* belonging to the New York and Oriental Steam Ship Co. (NY&O) on February 1⁵¹. However, the two remaining locomotives that were supposed to be loaded onto the same ship did not arrive on time and, in the end, were loaded onto the next steamship, the *Shimosa*⁵². According to a memo from Yamada, the *Satsuma*, carrying the four Rogers locomotives, left New York on February 2 and was scheduled to arrive in Yokohama via the Suez Canal sometime in April. The *Shimosa*, which was to carry the two remaining locomotives, was scheduled to set sail on February 15 and arrive in Yokohama via the same route in mid-May⁵³. Yamada, thus, believed that both shipments would meet the delivery date in Asahikawa of June 15. However, arrival of the second ship, the *Shimosa*, which was coming from England, was delayed substantially due to bad weather and actually set sail from the Port of New York on March 6, some 20 days after the scheduled departure date⁵⁴. As a result, Yamada found himself having to write a second letter explaining the reason for the delayed delivery to the Hokkaido Department Railways. The *Shimosa*, which was a new, powerful steamship, was able to make the New York-Yokohama trip in three months rather than the conventional four months⁵⁵ and reportedly arrived in Yokohama on June 6⁵⁶. It goes without saying that this substantial increase in shipping speed was beneficial to trading company activities

Letter No.1, pp.462-463.

⁵⁰ “A letter from Yamada to Tokyo head office, overseas department” (January 8, 1902), *Tokio Letter No.1*, p.476.

⁵¹ The *Satsuma* was an iron and steel ship with a gross tonnage of 4,204 tons built by the British shipbuilding company, Sunderland Shipbuilding, in 1901. It ran between New York and Yokohama via the Suez Canal.

⁵² The *Shimosa* had a gross tonnage of 4,221 tons and was built by the British shipbuilding company, Sunderland Shipbuilding, in 1902. Similar to the *Satsuma*, it was operated by the New York & Oriental Steam Ship Co. See “Barber Steamship Lines have unique Flagship”, *Port of Houston Magazine* (November 1968), pp.18-19.

⁵³ “A letter from Yamada to Tokyo head office, overseas department” (February 1, 1902), *Tokio Letter No.2*, pp.78-79, RG131/A1/Entry-124/ Box-856 Okura.

⁵⁴ “A letter from Yamada to Tokyo head office, overseas department” (March 8, 1902), *Tokio Letter No.2*, pp.212-213.

⁵⁵ The steamship *Indrasamha* carrying axles and wheels bound for the Hokkaido Government Railways sailed from New York on November 6, 1901 and arrived in Yokohama five months later on April 14, 1902 (*Japan Weekly Mail*, December 14, 1901 and April 19, 1902).

⁵⁶ *Japan Weekly Mail* (June 14, 1902), p.663.

that were, in many ways, a race against time. In the one-year period from July 1902 to June 1903, 18 steamships departed New York bound for Japan (48,975 tons) and 23 steamships arrived in New York from Japan (62,121 tons)⁵⁷. Although there is a discrepancy in number of ships departing and arriving, which can be explained by the long travel times, an average of 1.7 ships per month moved between the two ports.

Unlike Mitsui & Co.⁵⁸, which was a general trading company and thus able to transport freight using a combination of its own ships and chartered ships⁵⁹, Okura & Co., which was much smaller in size and did not possess shipping know-how, had no choice but to rely on freight liners, despite the risk of delays. At the same time, it should not be ignored that the activities of the Okura & Co. New York branch centering around the shipment of machinery, i.e., heavy freight, were made possible by the existence of freightliners connecting New York to East Asia via the Suez Canal. Before the opening of the Panama Canal in 1914, the route used for shipping heavy freight not requiring rush delivery from the East Coast of America to East Asia, an expensive endeavor to begin with, was not the transcontinental-transpacific route but, rather, the transatlantic-Suez Canal route⁶⁰. Regarding the latter route, new shipping companies such as the NY&O⁶¹ and the American Asiatic Steamship Co.⁶² were established in 1901 and 1902

⁵⁷ Zai nyuyoku soryoji hokoku, “Nyuyoku ko to nishin ryokoku sonota toyo shoko tono koun joko” (Report from the consul general of Japan in New York, Shipping situation between New York and East Asian ports including Japan and China) (November 29, 1907), in *Tsusho isan Meiji 41 nen* (Trade reports in 1908), no.4, p.103.

⁵⁸ H.Oshima, “Mitsui bussan niokeru yuso gyomu to yosen shijo” (Mitsui & Co.'s transportation business and the chartered vessel market in Japan), in *Shohin ryutsu no kindaiishi* (A modern history of goods distribution), (eds) S. Nakanishi and N. Nakamura (Nihon keizai hyoron sha, 2003), pp.213-219.

⁵⁹ Mitsui & Co. expanded its fleet of ships in the latter 1890s after the end of the Sino-Japanese War and, in 1903, established a shipping department.

⁶⁰ Zai nyuyoku soryoji hokoku, “Nyuyoku ko to nishin ryokoku sonota toyo shoko tono koun joko”, p.103.

⁶¹ The New York & Oriental Steam Ship Co. (NY&O) was a steamship line operating between New York and East Asia that was established by Edward J. Barber in 1901. Its fleet included the newly-built 4000-ton class *Satsuma*, *Shimosa*, and *Suruga* (“Barber Steamship Lines have unique ‘Flagship’”, p.17).

⁶² “Launch of a New Japan-US Shipping Line” *Tsusho isan*, Issue 237, 1902, p.51. The American Asiatic Steamship Co. was established in New York with a capital stock of 500,000 USD. Its fleet included the newly built 8600-ton class (registered tonnage of 3,803 tons) *Gibraltar*. It was announced that it would later add newly-built steamships to its fleet and operate at a pace of one passage per month.

respectively, resulting in the addition of new ships and a dramatic reduction in shipping times. These freight services were part of the social infrastructure that enabled the Okura & Co. New York branch to harmoniously conduct business.

(3) Payment

At the time, payment for railway materials in the U.S. was delivered to the manufacturer when the goods were loaded onto the ships. For the newly-established Okura & Co. New York branch, the money needed for payment was obtained from the Yokohama Specie Bank using bills of exchange combined with letters of credit for each ordered item⁶³. Incidentally, with regard to payment for the six locomotives for the Hokkaido Government Railways (USD 60,089), a letter of credit at four months after sight was established in advance⁶⁴. From March 1902 onward, "it became possible to issues letters of credit in any amount up to USD 10,000 in exchange for documentary bills for shipment from the source country (USA) and loading documents with no restriction on the number of letters issued"⁶⁵. Based on this system, the New York branch was able to conduct bill of exchange transactions without the hassle of obtaining a letter of credit from Tokyo Head office each time, so long as the value of the transaction was less than USD 10,000.

In cases where the arrival of the official bill of exchange was delayed for some reason, the branch was able to receive a bridge loan from the Specie Bank for any amount less than the credit limit that had been set. For example, with regard to the delivery of Rogers locomotives to the Hokkaido Government Railways, delivery of the official bill of exchange was delayed due to a discrepancy in the quote for the cost of transportation from the factory to New York and an ongoing dispute between the manufacturer and the steamship company as to which party was responsible for paying the difference. However, because the agreement between the Okura & Co. New York branch and the manufacturer was "to make payment in exchange for ship receipt," so long as it had received the goods, the trading company was obligated to pay promptly or tarnish its

⁶³ "A letter from Yamada to Tokyo head office, overseas department" (November 11, 1901), *Tokio Letter No. 1*, pp.295-298.

⁶⁴ "A letter from Yamada to Tokyo head office, overseas department" (February 28, 1902), *Tokio Letter No.2*, pp.167-168.

⁶⁵ "A letter from Yamada to Tokyo head office, overseas department" ([March] 17, 1902), *Tokio Letter No.2*, pp.220-221.

reputation. Accordingly, Yamada borrowed money to pay for the four locomotives from the Specie Bank for 12 days at an interest rate of 6%, which he used to pay Rogers⁶⁶.

With regard to transactions with the Yokohama Specie Bank such as that described above, Yamada kept in close contact with the bank's New York branch manager and collected information regarding the conditions and interest rates of loans and reported these to the Tokyo head office and the London branch hoping to gain even the slightest advantage⁶⁷. However, the relationship between the Okura & Co. New York branch and the Yokohama Specie Bank was essentially limited to those related to the exchange of bills. With the exception of bridge loans, there is no evidence that the bank provided any direct financing for the branch's activities. As explained earlier, during this period, the funds needed by the New York branch were not secured in New York but, rather, were sent from London.

5. Role of the formerly hired foreigner in Japan

In the previous section, we examined the steps leading to the delivery of railway goods by Okura & Co. to the Hokkaido Government Railways with a focus on the locomotives. Yamada Majiro who single-handedly established the Okura & Co. New York branch office in April 1901, won a massive contract for railway goods worth over USD 70,000 in July of the same year and, after progressing through each step, ultimately succeeded in getting goods loaded on a ship bound for Japan by February 1902. How was Yamada, who had only arrived a few months earlier, able to successfully manage such a large job with such a short lead time? If we consider this question from the standpoint of human resources, in addition to Yamada's own exceptional ability and internal factors, including appropriate support from top-level Okura & Co. managers such as Kadono, what comes to the fore is the importance of the external factor of the formerly hired foreigner in Japan as a consulting engineer, Joseph U. Crawford.

In 1878, J. U. Crawford was invited to Japan as a civil engineering consultant by the Hokkaido Development Commission and immersed himself in railway construction in Hokkaido until 1881. From 1880 to 1881, Crawford traveled with Matsumoto Soichiro, who was the officer of the Hokkaido Development Commission at the time (and later became the director of the Railway Works Bureau), to inspect potential routes

⁶⁶ “A letter from Yamada to Tokyo head office, overseas department” (February 15, 1902), *Tokio Letter No.2*, pp.135-136.

⁶⁷ “A letter from Yamada to Tokyo head office, overseas department” ([March] 17, 1902).

for railway lines from Tokyo to Aomori and to Takasaki and to estimate construction costs, creating the foundation for the establishment of Nippon Railway Company⁶⁸. Crawford was discharged from the Hokkaido Development Commission during a trip home to the United States in 1881, but continued to contribute to the development of the Japanese railway industry as an on-site preliminary inspector of railway goods being shipped from the U.S. to Japan.

The relationship between the Okura & Co. New York branch and Crawford began when Yamada visited Crawford at his home on August 12, 1901 to get advice on specifications for the Hokkaido Government Railways' locomotives⁶⁹. At the time, Yamada was concerned about discrepancies between the Hokkaido Government Railways' specification document and the detailed quote prepared by Rogers (regarding (1) the size of the firebox and (2) the material properties of the track wheel center)⁷⁰. Crawford's advice was that (1) was not a major issue and that it could be resolved simply by recalculating the size using the specified area and (2) that the cast steel advocated by Rogers was fine and that similar material had been used in locomotives manufactured by Schenectady Locomotive Works for Kyushu Railway. Taking this advice into consideration, Yamada submitted an official order to Rogers at the end of August 1901.

To Yamada, who had just arrived in New York, Crawford, an engineer who had intimate knowledge of Japanese railways, technological expertise, and abundant experience inspecting American-made locomotives and railway goods bound for Japan,

⁶⁸ N.Nakamura, *Chiho karano sangyo kakumei* (Reconsidering the Japan's industrial revolution from a local perspective), (Nagoya University Press, 2010), pp.72-73.

⁶⁹ "A letter from Yamada to Tokyo head office, overseas department" (August 13, 1901), *Tokio Letter No.1*, pp.21-24.

⁷⁰ The size of the firebox determines the output of the locomotive, and track wheel center, which is under heavy load, requires a material with high strength and durability.

was someone that could be a reliable resource. It is for this reason that Yamada asked Crawford to serve as a consulting engineer⁷¹.

The role of Crawford as Okura & Co.'s consulting engineer can be broken down into the following four functions:

- (1) Inspecting and certifying goods that were purchased.
- (2) Providing price and technical knowledge and know-how about railway goods based on wide ranging inspection experience.
- (3) Evaluating discrepancies between specification documents and quotes from a technical standpoint.
- (4) Providing product information obtained through personal connections with Japanese individuals involved in the railway industry

Of these, function (1) was that of inspector, for which Crawford received a handling fee equal to 1% of the product price. Function (2) was that of a source for knowledge on railway goods and know-how of its trade, which Yamada was lacking. For example, as described earlier, regarding negotiations with Rogers Locomotives Works for a discounted price, Crawford informed Yamada of the actual cost price of the Schenectady locomotives bound for Kyushu Railway that he, himself, had inspected⁷². To Yamada, this information was very important for knowing the "market price" of railway goods. With regard to (3), if the specification document for given railway goods needed to be changed in the manufacturing stage, the consulting engineer Crawford would directly contact and negotiate with the source of an order, to make them acknowledge that the change was needed⁷³. This would have been impossible for Yamada, who was not an engineer. Furthermore, with regard to (4), the relationship between Crawford and his former colleague, Matsumoto Soichiro, is particularly noteworthy⁷⁴. In 1900, Matsumoto, who was then the top official of the Imperial Government Railways (i.e. Director-General of the Railway Works Bureau) at that time, visited Crawford in Philadelphia and discussed his bureau's evaluation of Rogers locomotives. Yamada

⁷¹ J.U. Crawford became a consulting engineer for the Okura & Co. by September 5, 1901, at the latest. "A letter from Yamada to Tokyo head office, overseas department" (September 5, 1901, *Tokio Letter No. 1*, pp.115-116.

⁷² "A letter from Yamada to Tokyo head office, overseas department" (August 22, 1901).

⁷³ "A letter from Yamada to London branch office" (September 5, 1901).

⁷⁴ "A letter from Yamada to Tokyo head office, overseas department" (November 5, 1901), *Tokio Letter No. 1*, pp.284-286.

learned of this from Crawford himself, enabling him to confirm the positive assessment of Rogers products within the IGR.

In October 1901, Crawford was hired as a consulting engineer by the Hokkaido Government Railways, which had purchased the railway goods⁷⁵. This was extremely favorable to the Okura & Co. New York branch, in terms of its activities, information gathering. It was his effective use of a consulting engineer that enabled Yamada to purchase railway materials despite just having arrived in New York.

Conclusion: Acquiring knowledge and know-how of the locomotive trade

In this paper, we investigated the process of acquiring knowledge and know-how in American branch office of Japanese trading companies through the example of Yamada Majiro, the first manager of the Okura & Co. New York branch office.

This detailed examination of Yamada's thoughts and actions reveals that he was able to acquire the trading know-how and take advantage of business opportunities by collecting relevant and accurate information through networks of Japanese companies and consul in New York, local experts including journalists of industrial magazines and consulting engineers, as well as Japanese businessmen and engineers visiting New York temporarily. The purchase of locomotives for the Hokkaido Government Railways discussed in this paper was also helped by the timely resumption of manufacturing by Rogers Locomotive Works, which had suspended operations up to that point. That said, there is no denying that Okura & Co. was able to capitalize on this opportunity despite just having opened its New York branch because of the existence of a multilayered network centered around Yamada.

In addition, I would like to point out the critical role played by a formerly hired foreigner in Japan (the *Oyatoi*) as a consulting engineer. One reason that Okura & Co.'s New York office was able to successfully carry out procurement of such a large account despite just having been established was the fact that Yamada was able to hire Crawford, who had served as a civil engineer consultant for the Hokkaido Development Commission, as a consulting engineer and carry out various steps of the transaction while receiving advice from Crawford. Crawford was able to not only conduct parts inspections but, also, to provide technical knowledge, information on American railway goods manufacturers, and also information on Japan railway companies, making up for

⁷⁵ “A letter from Yamada to Tokyo head office, overseas department” (October 17, 1901), *Tokio Letter No.1*, pp.228-231.

Yamada's lack of know-how. Without Crawford, the successful delivery of railway goods to the Hokkaido Government Railways would not have been possible. Examples of former foreign engineers becoming consulting engineers or inspectors for Japanese trading companies after returning to their home countries could also be seen in the U.K.⁷⁶.

The overseas activities of Japanese trading companies were supported by these and other former hired foreigners. It was also one of the essential routes of knowledge transfer in cross-regional commercial management.

⁷⁶ I had illustrated it by the case of Thomas R. Shervinton, who had served as a chief engineer for the Railway Bureau from 1877 to 1881. See, Nakamura, *Umi wo wataru kikansha*, chapter 3.