

CHAPTER 5

Approaching the peak (1890-1899)

Market conditions and Norwegian ice exports

In the 1890s, ice exports increased in volume but declined in value. As in the 1870s and 1880s, the export of natural ice was, measured in tons, the fastest growing Norwegian export industry.³⁵² Exports had increased from just under 1.4 million tons in the 1870s to just over 2.5 million in the 1880s, but now reached slightly more than 3.7 million register tons.³⁵³ (See Table 5-1). In terms of weight, the 1890s came to represent the peak of Norwegian exports of natural ice.³⁵⁴ However, the value of the ice did not exhibit the same trend: the average value fell from NOK 4.89 per register ton (1865 = 100) in the 1870s to NOK 4.67 in the 1880s and by the 1890s, it had declined even further to NOK 4.04. The bottom was reached in 1892, when NOK 2.01 per register ton was recorded. The peak year of the decade was 1898, when the value reached NOK 8.97 per register ton and the total value of Norwegian ice exports was almost NOK 5 million (see Figure 5-1).

This was the second highest value for the entire period of 1870 to 1930. Only in 1882 was the value higher. Huge quantities of ice were exported, but the year-to-year variation in the value as well as export tonnage was considerable during the decade, and market instability was further exacerbated by the rise in less expensive, large-scale, factory-produced ice.³⁵⁵ (See also refrigeration and industrialised production of ice in Chapter 1).

352 Hodne & Grytten (2000), p. 275.

353 Statistics Norway. Historical statistics of external trade (1847-1930).

354 Ibid.

355 Idsø (2014).

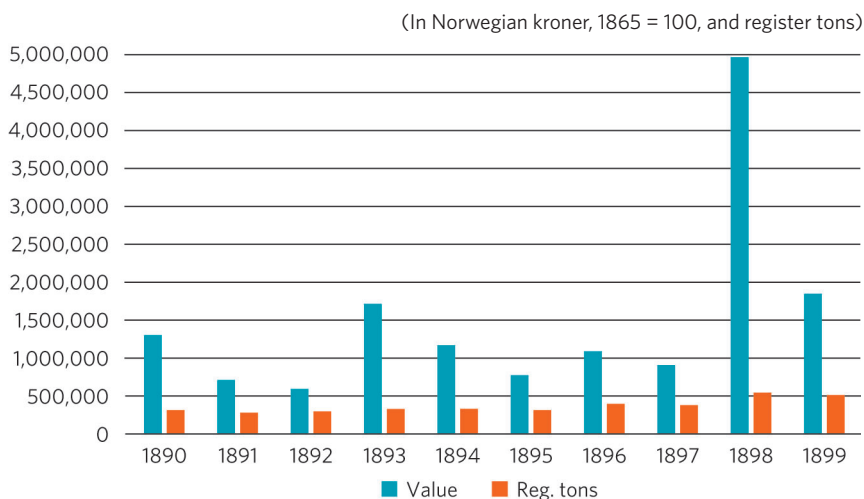


Figure 5-1. Value and volume of Norwegian ice exports (1890-1899).

Sources: Compiled on the basis of Statistics Norway. Historical statistics of external trade (1890-1899).

The export pattern for Norwegian ice remained fairly stable during the 1890s, albeit with year-to-year variations as noted above.³⁵⁶ Table 5-1 shows that over 78% of exports found their way to the UK. The next most important markets were Germany and France, which received 8.5% and 6.5% of Norwegian exports respectively.³⁵⁷

The decade opened with a climatically normal year in Europe, with adequate cool weather in Norway to maintain production levels combined with stable demand from both the UK and the Continent. However, as mentioned earlier in the book, winter 1890 was warm in New York and no ice whatsoever was stored in the ice houses on the Hudson River.³⁵⁸ Prices rose, making it profitable for Norwegian ice exporters to ship ice to the city.³⁵⁹ One of the companies that sent ice to New York in 1890 was T. & A. Wiborg. We will return later to the profitability of the three shipments sent by the company.

³⁵⁶ Statistics Norway. Historical statistics of external trade by country (1870-1899).

³⁵⁷ Ibid.

³⁵⁸ Temperatures compiled on the basis of measurements recorded in December, January and February. In Clayton et al. (1927), p. 892. Temperatures are converted from Fahrenheit to Celsius; Parker (1981), p. 3.

³⁵⁹ Statistics Norway. Consulate reports from the consuls of Sweden/Norway (1890), p. 82; Historical statistics of external trade (1890).

Table 5-1. Norwegian ice exports distributed by country (1890-1899)

(Register tons)

	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	Total	In %
UK and Ireland	264,974	252,042	260,505	301,058	279,316	288,978	322,856	314,192	305,026	342,714	2,931,661	78.26%
Sweden	1,530	1,645	2,517	2,873	6,392	2,070	3,595	1,586	1,504	2,947	26,659	0.71%
Denmark	1,783	405	135		1,452	85	4,229	1,528	22,887	9,600	42,104	1.12%
Germany	5,160	31		812	4,105	1,529	25,358	2,272	180,821	96,487	316,575	8.45%
France	14,544	12,700	18,245	20,018	20,037	18,188	28,445	43,954	22,514	42,296	240,941	6.43%
The Netherlands	2,762	1,998	3,348	3,523	2,302	3,064	5,627	5,665	6,407	3,584	38,280	1.02%
Belgium	9,127	7,471	7,074	7,859	9,453	8,137	12,835	12,949	12,325	12,074	99,304	2.65%
Spain			1,044	451	837	827	511	959		381	5,010	0.13%
Italy	466		301	466	357	357	358	320	393	393	3,411	0.09%
Portugal	225	501		225		283	208				1,442	0.04%
US	14,239		67		3,187			561			18,054	0.48%
Iceland				20		35	541	33			629	0.02%
Algeria	2,674	2,722	3,035	2,199	1,251	1,430	1,914	1,113	1,224	363	17,925	0.48%
Rest of Africa	311	281		198			1,504	424	546	729	3,993	0.11%
Other countries					39		148			13	200	0.01%
Total	317,795	279,796	296,271	339,702	328,728	324,983	408,129	385,556	553,647	511,581	3,746,188	100.00%

Source: Compiled on the basis of Statistics Norway. Historical statistics of external trade by country (1890-1899).

In November 1891, the periodical *Farmand* reported on the major problems encountered by the ice export industry. Low prices, combined with ‘fierce and merciless competition’ among the exporters, caused prices to plummet even further, and exporters were accepting ‘the lowest prices imaginable’.³⁶⁰ The prospect for the following year was no better. *Farmand* pointed out that large volumes of ice had been sold in the autumn of 1891 for delivery the following year at these very low prices.³⁶¹ Such pessimism was partly justified. In 1892, the value sank to the bottom, fetching just NOK 2.01 per register ton. The Consulate-General in London argued that this decline was caused by the level of supply being too high in relation to demand.³⁶² This accords with *Farmand*’s earlier report on the ‘senseless’

³⁶⁰ *Farmand* (28 November 1891).

³⁶¹ *Ibid.*

³⁶² *Ibid.* p. 291.

competition existing between the ice exporters who, in order to secure available contracts, were accepting prices for their ice that scarcely enabled them to cover the costs of production.³⁶³ However, in 1893, value more than doubled to NOK 5.09 per register ton as demand rose in the UK, which was enjoying a hot summer.³⁶⁴

Calls for collaboration in the face of depressed prices: the Norwegian Ice Exporters' Association

Although prices were good in 1893, initiative was taken to form the Norwegian Ice Exporters' Association in an attempt to counteract the trading advantage obtained by UK importers in particular. The prime mover behind the initiative was A. E. Olsen (from Lyngør). Olsen proposed, despite previous unsuccessful attempts to bring the exporters together, to form a 'joint company' which would assume responsibility for all of the Norwegian commercial ice facilities. The company was to have its head office in Kristiania and branch offices in the six main exporting districts.³⁶⁵ *Farmand* reported that there was general agreement about the purpose behind this initiative, but that many exporters were looking for a less-challenging form of collaboration. Nevertheless, an ice industry association, to be led by an employed general secretary, was established.³⁶⁶ It was formally founded at a meeting in Drøbak in July, at which it was decided that '*... Mutual envy and foolish competition to the detriment of all parties ...*' should give way '*... to a feeling of solidarity ...*'.³⁶⁷

About six months later, on 23 January 1894, the association held a meeting in Brevik, attended by about 40 ice exporters.³⁶⁸ The appointed chairman, Consul Larsen from Kragerø, stated that the association was now receiving weekly consular reports on the import of ice to London, Grimsby and Hull, UK import statistics every fortnight and was soon to receive monthly import lists from ports in Britain and Ireland, as well as from the European coastline from Ouessant Island (near Brest

363 *Farmand* (4 June 1892).

364 Beamon & Roaf (1990), p. 146; Manley (1958), p. 419.

365 *Farmand* (25 March 1893).

366 *Ibid.*

367 *Farmand* (8 July 1893).

368 *Morgenbladet* (26 January 1894).

in France) to the Hook of Holland in the Netherlands. The chairman was asked to provide weekly import lists and daily temperature statistics from London, Glasgow and Liverpool. It was also stated that minimum prices between the exporters had been negotiated, but that no binding agreements had been entered into.³⁶⁹ In May 1894, the association reappeared in *Farmand* where its chairman Larsen refuted an article that had ruled out an increase in ice prices.³⁷⁰ He encouraged the ice industry to withhold sales because the prospects for future price rises were looking good.³⁷¹

However, as with previous attempts at collaboration, the association did not last long. In October 1894, an anonymous ice exporter wrote a letter pointing out the problems the association was experiencing.³⁷² He argued that since the English importers were controlling the market, the exporters had no choice but to follow in their wake.³⁷³ He pointed out that in spite of the poor terms that the exporters were being offered, they were fighting with each other over contracts instead of adopting a wait-and-see attitude. He stressed that being the first to get the ice shipped overseas was essential and that sales had to be completed at all costs. Furthermore, it was the fear of competition from factory-produced ice that made some ice exporters accept low prices. Finally, he concluded that the ice association experiment had not been a success, despite the fact that only a very limited agreement and a little goodwill would have brought them a long way.³⁷⁴

Starting in 1894, the price of ice fell once again and remained low up to and including 1897. Very little ice was exported to Germany in 1895 and 1897, and despite the fact that over 25,000 register tons were exported in 1896, this did little to improve prices.³⁷⁵ The winters in Norway were cold and levels of production were high,³⁷⁶ but this only served to

369 *Morgenbladet* (26 January 1894).

370 *Farmand* (12 May 1894).

371 *Ibid.*

372 *Farmand* (20 October 1894).

373 *Ibid.*

374 *Ibid.*

375 Statistics Norway. Historical statistics of external trade by country (1890-1899).

376 Thos. J. Wiborg Archive. Copy book (1889-1898), p. 400.

encourage more competition between the Norwegian exporters, who continued to undercut each other in order to achieve sales.³⁷⁷ Foreign importers continued to exert a downward pressure on prices and to draft contracts with delivery and cancellation terms that were highly unfavourable to the exporters.³⁷⁸ During the trough in 1897, there were reports of very low prices for large stocks of ice, causing many exporters to make significant losses.³⁷⁹

In brief, during the 1890s the industry faced a combination of problems. Prices were low, stocks of ice were large and there was a total lack of cooperation between the exporters. As *Farmand* had predicted, contracts for future deliveries of ice had been entered into at prices that were 'extremely low'.³⁸⁰ The trade periodical *Norges Sjøfartstidende* offered two reasons for this situation.³⁸¹ First, the competition between the Norwegian ice exporters, who were undercutting each other in order to win contracts, and second, the actions of the foreign importers, who were pressing prices down and drafting contracts with delivery and cancellation terms that were highly unfavourable to the Norwegian exporters. There was a great need for a good year, but when it arrived in 1898, it proved to be a most problematic record year when exporters experienced only very fine margins between success and financial ruin.

Export of ice to Iceland

Perhaps the most surprising country to which ice was transported in the 1890s was Iceland. Small volumes were exported there for several years, with the largest shipments made in 1896.³⁸² This ice was probably intended for use in connection with the fishing sector and fish exports from the country. Norwegian companies were engaged in fishing in Icelandic waters and Norwegian steamships were used to export the fish.³⁸³ The involvement of Norwegian steamships in the Icelandic export trade was

³⁷⁷ *Norges Sjøfartstidende* (3 January 1899).

³⁷⁸ *Norges Sjøfartstidende* (3 January 1899).

³⁷⁹ *Ibid.*

³⁸⁰ *Farmand* (16 January 1897).

³⁸¹ *Norges Sjøfartstidende* (3 January 1899).

³⁸² Statistics Norway. Historical statistics of external trade by country (1896).

³⁸³ Hovland (1980), p. 113.

discussed in the consular report of 1893, where it was stated that between 2,000 and 3,000 tons of fresh herring were packed in ice and exported from Iceland to Britain.³⁸⁴

According to the consul, the Icelanders entertained high hopes for the shipping of fresh fish packed in ice.³⁸⁵ Norwegian companies were contracted to build ice cellars and ice houses in Iceland in the beginning of the 1890s for the storage of frozen herring as bait and ice for the transport of fresh herring.³⁸⁶ The ice used in these facilities was produced locally, which the consular report for 1900 suggests: it confirmed that the company *Gardar*, based in Seyðisfjörður, was in the process of building ice houses to accommodate approximately 7,000 tons of ice.³⁸⁷ The plan was for *Gardar* to harvest the ice from a river that had an outlet outside Seyðisfjörður, as well as from basins in which a finer quality of ice was to be frozen.

Much of the foreign fishing activity off Iceland was seen as unsustainable, and terms such as ‘over-consumption’ were commonly used about the conduct of the foreign companies. In 1897, the consulate’s annual report wrote about what we today probably would describe as environmental crime:

The cod are moving further from land and many no longer enter the fjords. This is largely due to the activities of the large foreign fisheries outside the fjords, because the cod, due to the large amount of waste thrown into the sea and a mass of lines stretched like a net across the mouths of the fjords, are drawn into the deeper shallows and prevented from entering the fjords. Whatever the cause, neither cod nor herring have entered the fjords in 1897, even though large volumes of fish have been observed at the mouths of the fjords.³⁸⁸

Future prospects of natural ice

At the beginning of this chapter, we came to the conclusion that although trade volumes increased in the 1890s, there was a fall in the value of exports per register ton. It remains to explore the reasons for this trend.

384 Statistics Norway. Consulate reports from the consuls of Sweden/Norway (1893), p. 216.

385 Ibid.

386 Hovland (1980), p. 113.

387 Statistics Norway. Consulate reports from the consuls of Sweden/Norway (1900), p. 197.

388 Statistics Norway. Consulate reports from the consuls of Sweden/Norway (1897), p. 108.

The 1891 reports from the Consulate General in London shed some light on these issues.

In 1891, many of the consulates located in the UK were discussing the relative benefits of natural and artificial ice, and came to some conclusions regarding the future of natural ice produced in Norway.³⁸⁹ The Consul General in London wrote:

Among the Norwegian products or commodities imported into Britain, ice closely follows forestry and fisheries products and is only slightly behind agricultural products in terms of its export value. It is thus of great importance, and competition is virtually lacking in terms of the import trade. It is an essential commodity that will always be in demand, no matter how much one seeks to meet domestic demand with artificial ice, which so far at least, has not been found to compare with natural ice, either in terms of wholesomeness or affordability.³⁹⁰

In other words, Norwegian natural ice was essential since artificial ice was too expensive and of inferior quality.³⁹¹ It was, it seemed, essential to the UK as well as to Norway. But a change was on the way. Other consulates reported that artificial ice was beginning to gain a grip on the market elsewhere in the UK. In Cork, Ireland, for example, imports of ice were declining, and artificial ice production was starting to dominate the market.³⁹²

In contrast, a report from Grimsby in England concluded that the production of artificial ice would not significantly affect natural ice imports from Norway.³⁹³ A report from Limerick in Ireland also referred to the issue, but in a slightly different setting. Here, it was not the production of artificial ice, but innovations in refrigeration technology, that were about to outcompete Norwegian natural ice imports.³⁹⁴ The consul wrote:

The import of ice has almost completely ceased, after all the largest pig slaughterhouses have been supplied with refrigerators, and in 1891 only 801 tons were imported.³⁹⁵

389 Statistics Norway. Consulate reports from the consuls of Sweden/Norway (1891), pp. 295–296.

390 Ibid.

391 Ibid.

392 Ibid. p. 305.

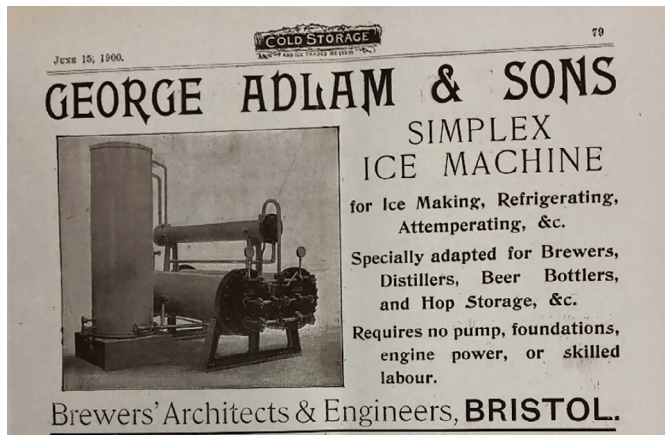
393 Ibid. p. 305–306.

394 Ibid. p. 309.

395 Ibid. p. 309.

In Milford Haven in Wales, they expected a short-term increase in imports of Norwegian natural ice for use in the new steam trawlers, but only for a limited period according to the consul, because ‘... a factory for the manufacture of ice will probably soon be set up here’.³⁹⁶ Other reports from several consulates in 1891 also highlighted the decline in natural ice imports due to local production of artificial ice.

The key factors shaping this trend were the innovations in refrigeration and freezing technology that made it possible to refrigerate food and produce artificial ice in factories in the UK and on the Continent, much closer to the end user than ice produced in Norway. (See Picture 5-1 and refrigeration and industrialised production of ice in Chapter 1). Artificial ice was less expensive and regarded as of higher quality than imported natural ice, because it was possible to control the purity of the water used. It was only a matter of time before artificial ice would be competing with Norwegian ice in terms of both quality and price. Prices would fall since the quality advantage enjoyed by natural ice was disappearing and price was becoming the decisive factor.



Picture 5-1. Advertisement for the Simplex Ice Machine.

Source: *Cold Storage and Ice Trades Review* (June 15, 1900).

396 Ibid. p. 310.

These events can be characterised as a real technological shift in ice production, involving a transition from the traditional production of natural ice from ponds in winter to the all-year-round manufacture of artificial ice closer to the sites where it was needed.

Norwegian exporters were now offering the market ice produced with what was becoming 'second best' technology. However, ice continued to be produced despite the fall in its value, because the export trade remained profitable for some time yet.

However, after the turn of the century, the ice exporters experienced that their market was shrinking. They were investing in a trade that was still profitable, but where competitive advantage could only be achieved by selling their commodity at very low prices.³⁹⁷ At the same time, the value of Norwegian ice production facilities was also in decline. The plants could still produce ice and continued to do so until it was no longer viable, either because they became unprofitable or so dilapidated that they had to be demolished. In the *Cold Storage and Ice Trades Review* it was reported in 1907 that 'many' Norwegian production facilities had been closed down and that infrastructure such as ice houses, ice chutes and harbour facilities had been demolished.³⁹⁸

T. & A. Wiborg

After its beginnings in 1882, T. & A. Wiborg grew throughout the 1880s and was by 1890 a significant player in the ice export industry. During the 1890s, the company accounted annually for between 6% and 14% of total Norwegian ice exports. The company exported a total of 1,231 shiploads of ice during this decade (see Table 5-2). However, the 1890s were not without challenges, not least in the period leading up to the peak year of 1898.

397 Grytten (1991), p. 10. It was not unlike the transition from sails to steamships in the shipping sector. Grytten deals with this transition in shipping during which investment continued to be made in a shrinking market simply because it remained profitable.

398 *Cold Storage and Ice Trades Review* (21 March 1907).

Ice harvesting and ice production

As we have seen, the various Wiborg companies were engaged in ice harvesting and production from the close of the 1870s.³⁹⁹ However, in order to provide some detail about the organisation and infrastructure of the facilities that T. & A. Wiborg leased, we have to move to 1889, which is the first year the Thos. J. Wiborg Archives record contracts for ice facilities.⁴⁰⁰ These records makes it possible to go beyond our discussion of ice production and shed more light on the organisation and infrastructure both of the complex facilities (with different types of warehouses, ice chutes and other infrastructure where ice was produced) and of the simpler facilities where ice was harvested without building a complex plant (see discussion in Chapter 1).

On 15 February 1889, T. & A. Wiborg entered into a contract for the lease of the Syverstad ice facility in Asker outside Kristiania, which was comprised of two landscaped ponds, an ice house, an ice stack and an ice chute that led down to Kristiania Fjord (to Presteskjæret in Holmenbukta).⁴⁰¹



Picture 5-2. Schooner loading ice at Presteskjæret at the end of the ice chute (c. 1890).

Source: Photographer Hjalmar Kierulf. Courtesy of Asker Libraries.

399 Hambro (1901), pp. 38–44. Judgment of 8 June 1886, pp. 616–618, Judgment of 11 April 1891.

400 Thos. J. Wiborg Archive. Agreement, 23 November 1901 between Thomas Johannes and Axel Wiborg concerning a contract, 15 February 1889 and registered on 6 September 1889 between Erik Syversted and T. & A. Wiborg for the leasing of the Syversted ice facility.

401 Ibid.; Lokalhistoriewiki.no Syverstaddammene. <https://lokalhistoriewiki.no/wiki/Syverstaddammene>. Thomas Møller Wiborg (an ice exporter in Kragerø) is commonly misattributed as the one who leased the Syverstad ice plant. We have documented in this book that in fact Thomas Johanns Wiborg was the Wiborg active in the ice export trade in Asker.

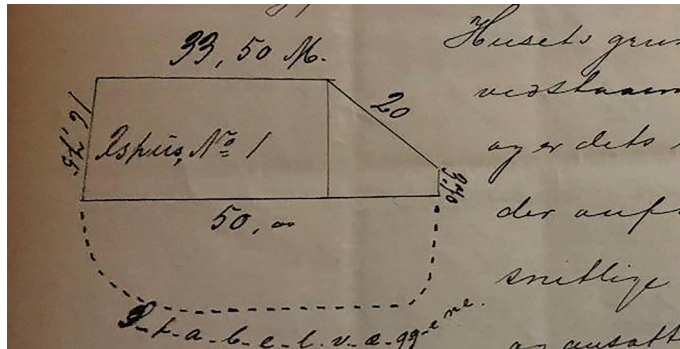
In connection with an assessment for fire insurance a few years later, in January 1893, this was valued at NOK 9,500. A second valuation was carried out on 12 October 1893 to include a recently constructed combined workers' accommodation and warehouse building, valued at NOK 1,300. By this time, the establishment consisted of:

1. **The ice house** (a warehouse), which was a half-timbered building with interior and exterior boards. The gap between the two sets of boards was filled with sawdust for insulation. The roof, which was also filled with sawdust, was supported by 64 poles arranged in three rows. The height was about 6.3 meters. The floor plan is shown in Picture 5-3. The value was set at NOK 4,600.
2. **The ice stack**⁴⁰² (a warehouse without a roof), which was set against the ice house, was 116 metres long and 50 metres wide, with an average height of 5.5 metres. It was also half-timbered with interior and exterior boards, and also insulated with sawdust. A layer of sawdust was put on top, to insulate the ice. It was valued at NOK 1,400.
3. **The ice chute** was supported by poles and had two runs of sleepers with inverted bottom rafters.⁴⁰³ It was 331 metres long, 2.2 metres wide and valued at NOK 3,500.
4. **The combined workers' accommodation and warehouse building** was constructed eight metres from the ice chute. It was built on a foundation and constructed of logs and timber. The roof was covered with slates mounted on boards. It was 11.3 metres long, 5.8 metres wide and 2.65 metres high. It had three rooms and was equipped with a chimney and two stoves, one of which was tiled. It was valued at NOK 1,300.

402 In practice, an ice stack is an unroofed ice house in which a layer of sawdust is used to insulate the ice.

403 A rafter is defined here as a slanted bearing joint installed in a roof structure. These often occur in pairs, i.e., in two runs. <https://no.wikipedia.org/wiki/Sperre>, <https://snl.no/raft>. In this case, the rafters are installed upside-down to form a support structure for the ice chute. Another interpretation of the archive material is that the chute was built with a double channel (i.e., two runs).

The estimated total value of the plant in October 1893 was NOK 10,800.



Picture 5-3. Ground plan of the ice house at Syverstad in 1893.

Source: Thos. J. Wiborg Archive. Folder for 'Ice facilities' marked Syverstad.

T. & A. Wiborg leased the Syverstad plant initially for 15 years, and then for a further ten. The operations actually lasted until the end of 1913, when the plant was returned to its owners.⁴⁰⁴ As stated in the agreement, 'From today, the owners of Syverstad will assume responsibility for the Syverstad ice facility in its entirety, including stacks, chutes, etc. and any other equipment.'⁴⁰⁵ Thos. J. Wiborg received remuneration totalling NOK 1,500 for the investments that his companies had made over the years.⁴⁰⁶

The right to harvest ice was also leased in 1890. On 1 February, T. & A. Wiborg entered into an agreement with brothers Hans Olsen Kullebund and Martin Olsen,⁴⁰⁷ to lease their right to harvest ice on the lake

⁴⁰⁴ Thos. J. Wiborg Archive Folder for 'Ice facilities' marked Syverstad, Svestad and Bondivannet. Agreement, 4 November 1913 entered into between the the owners of Syverstad Farm (Chr. and Joh. Thorsrud) and Thos J. Wiborg & Son. Agreement, 23 November 1901. T. & A. Wiborg was dissolved in 1899 and in accordance with the agreement, Thos. J. Wiborg took over the lease.

⁴⁰⁵ Thos. J. Wiborg Archive. Folder for 'Ice facilities' marked Syverstad, Svestad and Bondivannet. Agreement, 4 November 1913 entered into between the the owners of Syverstad Farm (Chr. and Joh. Thorsrud) and Thos J. Wiborg & Son.

⁴⁰⁶ Ibid.

⁴⁰⁷ More information about the brothers can be found at: Lokalhistoriewiki. Kølabbonn (Asker gnr. 6/2) [https://lokalhistoriewiki.no/wiki/K%C3%B8labonn_\(Asker_gnr._6/2\)](https://lokalhistoriewiki.no/wiki/K%C3%B8labonn_(Asker_gnr._6/2))

Bondivannet, not far from Kristiania,⁴⁰⁸ for the purposes of ‘*harvesting ice on our parts of the lake Bondivannet in Asker*’.

Comparing the leases for the Syverstad and the lake Bondivannet facilities highlights the differences between ice harvesting and ice production. At Syverstad, T. & A. Wiborg was leasing a permanent, comprehensive ice facility where ice was produced.⁴⁰⁹ At the lake Bondivannet, the company was leasing harvesting rights to an ice sheet where there was no permanent infrastructure. Picture 5-4 shows views of the Bondivannet site that illustrate the ice-harvesting principle. Snow was cleared from the ice only in the areas where ice was to be cut. In some of the places where T. & A. Wiborg leased harvesting rights, questions arose as to whether it would be profitable to shovel the ice clear of snow or to leave it untouched for another year, given the market conditions at the time.⁴¹⁰



Picture 5-4. Cutting and transport of ice at the lake Bondivannet in 1925.

Source: Courtesy of Asker Libraries.

The ice from Bondivannet was transported by horse and sleigh four kilometres to the Kristiania Fjord where it was stored prior to export. T. & A. Wiborg entered into an agreement with Erik Blakstad on 1 February 1890 to lease an area at Blakstad Farm for storage and loading space for shipping of ice.⁴¹¹ The lease was for 15 years and utilised by T. & A. Wiborg and

408 Thos. J. Wiborg Archive. Folder for ‘Ice facilities’. Contracts, 1 February 1890 between T. & A. Wiborg and Hans Olsen Kulbund, and Martin Olsen, respectively.

409 Thos. J. Wiborg Archive. Folder for ‘Ice facilities’. Agreement, 4 November 1913 between the owners of Syverstad Farm (Chr. and Joh. Thorsrud) and Thos. J. Wiborg & Son.

410 Thos. J. Wiborg Archive. Diary for ice (1899–1929).

411 Thos. J. Wiborg Archive. Folder for ‘Ice facilities’. Contract, 1 February 1890 between Erik Blakstad and T. & A. Wiborg.

its successor, Thos. J. Wiborg, until 1908. It had previously been leased by the ice exporter Søren Parr for the same purposes. The terms of the contract stated that T. & A. Wiborg had to use the same road from the lake Bondivannet to the storage area on the farm that Parr had used,⁴¹² but no further mention is made about buildings or equipment.

T. & A. Wiborg continued to lease ice facilities during the 1890s. In 1893, the company leased the Svestad ice plants not far from Kristiania (at Svestad and Rogneskjær near Nesodden).⁴¹³ These included five ice ponds and the lake Svestadtjernet, in addition to ice houses, ice stacks, chutes, planks, sawdust stocks, stables, tool sheds and water pipes, as well as essential land and shoreline rights, and unhindered access for shipping. T. & A. Wiborg was also given the right to erect other facilities that the company considered necessary. The company had the option after five years to terminate the lease with five years' notice, but the agreement lasted 30 years.

On June 7, 1899, a fire assessment was carried out for the parts of the plant located at Rogneskjær and Eng (in Svestad), and this gives us an impression of the size, complexity and value of the facilities.⁴¹⁴

The plant at Rogneskjær included the following:

- **Ice stack 1:** This stack was 32.5 metres long, 29 metres wide and 7.5 metres high. It was divided into two rooms. The exterior walls were half-timbered with double boards that were filled in between with sawdust for insulation. The stack was built on a foundation and was roofless. A layer of 30 centimetres of sawdust was laid on top to insulate the ice. The stack was valued at NOK 3,500 and the sawdust at NOK 1,500, making a total of NOK 5,000.

412 Ibid. Parr had also previously leased Blakstad's right to harvest ice from the lake Bondivannet.

413 Thos. J. Wiborg Archive. Folder for 'Ice facilities'. Contract between Carl Svestad and T. & A. Wiborg for the property 'GN 20 BN 1,2,3,4' at Svestad and 'GN 26 BN 6' at Rogneskjær. Svestad later corrected this to 'BN 1,2,3,6' (not 4) on the grounds that these were the properties on which the ice plants were located; Thos. J. Wiborg Archive. Folder for 'Ice facilities'. Fire rating 1899 and registration, 15 January 1902.

414 Thos. J. Wiborg Archive. Svestad folder. Print-out of the fire assessment report issued by the Nesodden police. The assessment was carried out on the property 'GN 26 BN 6 Rogneskjær' on 7 June 1899, and on the 'GN 20 BN 6 Eng' property in Svestad on the same day.

- **Ice stack 2:** This stack was 28 metres long, 20 metres wide and 5 metres high, comprising a single room. The exterior walls were half-timbered with single boards. It was built on rocky ground and was roofless. A layer of 30 centimetres of sawdust was used to insulate the ice. The stack and the sawdust stocks were each valued at NOK 400, making a total of NOK 800.
- **A double ice chute** was built leading from the west side of stack number 1. It was 30 metres in length and built of poles and boards. It was valued at NOK 400.
- **A double ice chute** was also built from the east side of stack number 1. It was also 30 metres in length and built of poles and planks. It was valued at NOK 300.
- **A single ice chute** was installed at the base of the overlying chutes. It was built of poles and planks. It was partly connected to and partly by-passed ice stack no. 2 before continuing to the Kristiania Fjord. It was 200 metres long and valued at NOK 1,000.

According to the assessment, the total value of the Rogneskjær facility was NOK 7,500.

The plant at Eng consisted of:

- **A single ice stack** that was 24.5 metres long, 19 metres wide and 5 metres high, comprising a single room. The exterior walls were half-timbered with single boards. The stack was built without a foundation and was roofless. A layer of 30 centimetres of sawdust was used to insulate the ice. The stack was valued at NOK 600 and the sawdust at NOK 800, amounting to a total value of NOK 1,400.

Ice exports in the 1890s

In the 1890s, the UK continued to be the most important export market for the Norwegian ice export trade, followed by France and Germany. The T. & A. Wiborg export pattern was only slightly different: the UK received a smaller share of the company's exports than the share of all Norwegian ice exports going to the UK (66% and 78% respectively), France a larger share (17% to 6.5%) and similar relative percentages were sent to Germany. The

company also exported a larger share to Denmark than Norway as a whole did (5.5% to 1%). T. & A. Wiborg retained its niche markets in Italy and Portugal and exported a relatively large share of its ice to Ireland (5.7%). The trade with Ireland will be discussed in more detail below. (See Table 5-2 for a detailed overview of the Wiborg companies' exports during the decade: T. & A. Wiborg for the first nine years of the decade and, after its closure in 1898, Thos. J. Wiborg in 1899). T. & A. Wiborg also sold ice on Norway's domestic market, mainly in small volumes (between 25 and 40 register tons), which were transported from ice facilities in the inner Kristiania Fjord area to companies in and around the capital.⁴¹⁵

Table 5-2. Ice sales by country (1890-1899)

T. & A. Wiborg (1890-1898), Thos. J. Wiborg (1899) (Number of cargoes)												
	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	Total	In %
England	37	76	55	63	73	48	59	53	59	15	538	43.7%
Scotland	10	24	30	9	23	13	18	13	19	10	169	13.7%
Wales	4		2	7	14	5	3	2	1	1	39	3.2%
Ireland	13	11	4	5	8	5	11	5	6	2	70	5.7%
Sweden	1									5	6	0.5%
Denmark	7	4			1	3	15	1	21	16	68	5.5%
Germany	3				2		9		51	20	85	6.9%
France	28	37	34	32	12	13	21	24	8	4	213	17.3%
The Netherlands								1	4	1	6	0.5%
Belgium							2	3			5	0.4%
Spain					1						1	0.1%
Italy	1	1	1	1	1	1	1	1	1	1	10	0.8%
Portugal	1	1		1		1	1				5	0.4%
US	3										3	0.2%
Norway		8	1		3				1		13	1.1%
Total	108	162	127	118	138	89	140	103	171	75	1,231	100.0%

Source: Compiled on the basis of the Thos. J. Wiborg Archive. Chartering journal (1890-1899).

Economics and long-term connections

As we have seen, the 1890s were characterised by low prices, competition between Norwegian exporters and pressure from foreign importers to lower prices and enforce contract terms that were unfavourable to the

415 Thos. J. Wiborg Archive. Chartering journal (1890-1899).

Norwegian exporters. In addition, T. & A. Wiborg had financial problems in the years before 1898, and the bank had postponed payments on loans.⁴¹⁶ The company struggled in the face of major competition, especially from exporters in Kragerø. T. & A. Wiborg claimed that ice from Kragerø was being dumped on the market and that exporters from the town were delivering ice at very low prices,⁴¹⁷ which meant that Wiborg and other exporters were forced to sell ice only to their established customers.⁴¹⁸

One of T. & A. Wiborg's long-standing connections was Robert Halls in Colchester, England, who sent a handwritten note requesting delivery of a shipment of ice at about the same time and of about the same weight as a previous consignment, at a slightly lower price if possible (See Picture 5-5). Halls' note, written in October 1897, was filed as an ice contract.

Colchester Oct 22nd 1897.
 Gentlemen,
 Please send cargo
 of Ice. about the same time
 and weight as before. at
 a little lower price if you
 can
 Yours truly
 Robert Halls
 160-150 Fans

Picture 5-5. Note from Robert Halls, requesting ice from T. & A. Wiborg.

Source: Thos. J. Wiborg Archive. Protocol with ice contracts (1897-1898).

416 Thos. J. Wiborg Archive. Copy book (1889-1898), p. 400. Letter to Thos. Joh. Heftye & Son, 10 January 1898.

417 Ibid.

418 Ibid.

Contracts for future delivery and risk management

T. & A. Wiborg often entered into contracts for future delivery,⁴¹⁹ as was the case in 1897, 1898 and 1899.⁴²⁰ For 1897, contracts had been signed in September and October 1896, all at prices that were approximately one British shilling per ton below the prices on contracts signed in 1897.⁴²¹ In the peak year of 1898, contracts that had been entered into in autumn the year before fetched approximately only half the price that it was possible to achieve in the spring and summer of 1898. In contrast, contracts for delivery in 1899, entered into in the autumn of 1898, generated more revenue than those entered into in the spring and summer of 1899. Over time, these relative gains and losses were evened out and enabled T. & A. Wiborg to continue operations at a profit. For example, in 1897 the company wrote letters to its bank stating that prices were such that it was approaching the break-even point.⁴²² As it turned out, the company achieved a total result just over NOK 20,000 (about NOK 1.6 million in 2020).⁴²³ Most of it was shared between the partners, with dividends of NOK 8,500 and NOK 8,000 paid respectively to T. J. and Axel Wiborg.⁴²⁴

A total of 1,239 shiploads of ice was exported by T. & A. Wiborg in the 1890s. As in the previous decades, a significant proportion of the ice was sent via the international shipping market, and 340 of the 1,239 ships (27%) that transported ice for T. & A. Wiborg were foreign.⁴²⁵ (See Table 5-3).

419 The company entered into agreements in the autumn of one year for delivery in the spring of the following year. Such contracts were (as described in Chapter 2) considered as a way to reduce risk, both for the shipper and the recipient.

420 Thos. J. Wiborg Archive. Protocol with ice contracts (1896–1899).

421 Ibid.

422 Thos. J. Wiborg Archive. Copy book (1889–1898), p. 400.

423 Thos. J. Wiborg Archive. Copy book (1889–1898), p. 411. Settlement for 1897, 18 January 1898.

424 Ibid.

425 Thos. J. Wiborg Archive. Chartering journal (1872–1891). For the most part, the foreign vessels used by T. & A. Wiborg were chartered by the company. However, there were also cases of ‘free on board’ (FOB) contracts under which the buyer either owned or had chartered the vessel.

Table 5-3. Nationality, number and types of ships that transported ice in the period (1890–1899)

Chartered by T. & A. Wiborg (1890–1898), Thos. J. Wiborg (1899)

Year	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	Total
Denmark	29	14	25	16	21	8	41	15	37	15	221
Sweden	4	1	2	2	1	2	4		2	12	30
Russia			1				2		1	1	5
England	3	16	12	10	8		1	14	6		70
Germany	2	1	1	1	2		1		3	1	12
France		1					1				2
Total foreign	38	33	41	29	32	11	49	29	49	29	340
Total Norwegian	70	135	86	89	106	78	91	74	122	48	899
Total ships	108	168	127	118	138	89	140	103	171	77	1,239
Foreign in %	35%	20%	32%	25%	23%	12%	35%	28%	29%	38%	27%
Norwegian in %	65%	80%	68%	75%	77%	88%	65%	72%	71%	62%	73%
Steamships	12	10	33	34	40	33	41	33	51	43	330
Steamships in %	11%	6%	26%	29%	29%	37%	29%	32%	30%	56%	27%

Sources: Compiled on the basis of the Thos. J. Wiborg Archive. Chartering journal (1872–1891, 1892–1905).

The ice trade was still important for Danish sailing ships, which carried 221 of T. & A. Wiborg's ice shipments. Many Danish shipping companies had not changed to steamships, as in the town of Marstal on the island of Ærø in the far south of Denmark, where the sailing ship trade was key right up until the First World War.⁴²⁶ The Marstal sailing ships were most often smaller ships, schooners, which were well-suited to ice transport.⁴²⁷ In 1893, the Marstal fleet totalled 332 ships, of which only two were steamships.⁴²⁸ This was similar to the situation in the Aust-Agder region in the southern part of Norway in 1890,⁴²⁹ with the difference that many of the southern Norwegian wooden sailing ships were larger barques and full-rigged ships.⁴³⁰

However, steamship technology was on the march and 330 of T. & A. Wiborg's shiploads were transported by steamships. The use of steamships had started somewhat cautiously during the previous decade but

426 Hermansen (2008), p. 88; Hanisch (1983), p. 119.

427 E-mail from Berit Eide Johnsen (April 2023).

428 Hermansen (2008), p. 88.

429 Hermansen (2008), p. 88; Hanisch (1983), p. 119; Johnsen & Sætra (2016), p. 143.

430 Johnsen & Sætra (2016), p. 150.

rose to around 30% of ice shipments in the 1890s. Norway was not the only country in which shipping companies owned steamships suitable for the transport of ice. Most of the Swedish ships that carried ice for T. & A. Wiborg in the 1890s were steamships: a total of 30 cargoes were shipped, of which only seven were by sailing ship. In addition, the company used one German, one Danish and one Russian steamship.

In most of the contracts for ice export accessible in the Thos. J. Wiborg Archive, it is stipulated whether the ice is to be transported by steamship or sailing ship.⁴³¹ In some contracts, however, we find that the buyer, and in other contracts the vendor, can decide whether a sailing ship or steamship is to be used, in both cases without affecting the rate.⁴³² According to the charter journals and protocols with ice contracts in the Thos. J. Wiborg Archive, sailing vessels and steamships were also generally paid corresponding rates for transporting ice.⁴³³

Given that the rates were equal, steamships were still more profitable as they were more efficient for the following reasons:⁴³⁴

- A steamship could load more ice than a sailing vessel of the same size (register tonnage) and was thus more profitable at a given rate per unloaded ton CIF (cost, insurance and freight), than a sailing ship of the same tonnage.
- Steamships were more effective at loading and unloading because they could use their steam-driven winches and derricks to hoist the ice from the quay onto the ship and down into the cargo hold (see also Picture 5-6).
- Steamships made faster deliveries than sailing ships because their passage was not dependent on wind conditions.
- Steamships enjoyed priority unloading in ports. According to T. & A. Wiborg's contracts, a steamship carrying ice was to be unloaded twice as fast as a sailing ship.

431 Thos. J. Wiborg Archive. Chartering journal (1872–1891), Protocols with ice contracts (1872–1891).

432 A rate can be explained as the amount of money a shipowner is paid for one metric ton of cargo transported to the unloading port.

433 Thos. J. Wiborg Archive. Chartering journals (1872–1920), Protocols with ice contracts (1896–1915).

434 See also Weyergang-Nielsen (1994), p. 83.

All in all, steamships generated more revenue for a given voyage and could make more voyages than a sailing ship in any given period.

Whether the ice was sent by sailing ship or steamship could depend on factors such as the availability of ships and the delivery time: if an importer wanted the ice quickly, a steamship would be chosen and conversely, if the shipment was not required quickly, a sailing vessel would be chosen. Some importers may have intended to use the sailing vessel for storage in port prior to unloading. This practice was in use, as evidenced by the wording in T. & A. Wiborg's standard ice contracts, in which, in addition to demurrage,⁴³⁵ 'compensation for wastage' was included, by which payment for cargo that melted while the vessel was in port was charged.⁴³⁶

(Bjerkåsholmen in 1902)



Picture 5-6. Wooden steamship loading ice using steam winches and derricks.

Sources: Courtesy of Asker Libraries.

The English schooner Luz

T. & A. Wiborg had collaborated with Ramsgate Smackowners Ice Co. Ltd. since 1882, and in October 1897 an FOB contract was signed between

⁴³⁵ de Kerchove (1961), p. 212. Demurrage is a fixed sum, per day, agreed to be paid for the detention of a vessel under charter at the expiration of lay days.

⁴³⁶ Thos. J. Wiborg Archive. Protocol with ice contracts (1897).

the two parties concerning delivery of ice in the following year.⁴³⁷ The delivery was for ‘2,500 tons of ice collected by the purchaser between 1 April and 30 November 1898 at Knardal by Porsgrund’.⁴³⁸ This was one of several contracts between the two parties in the 1890s, and the ship that was sent to carry the ice was a three-masted wooden schooner, *Luz*, owned by the English company. The vessel had been built in Dartmouth, England, in 1869, and was well suited for transporting ice, having a cargo capacity of 186 register tons.



Map 5-1. The route from Telemark to Ramsgate.

437 Thos. J. Wiborg Archive. Protocol with ice contracts (1897-1898). Contract between T. & A. Wiborg and Ramsgate Smackowners Ice Co. Ltd., 12 October and countersigned on 20 October 1897.

438 Thos. J. Wiborg Archive. Protocol with ice contracts.

T. & A. Wiborg's chartering journal records numerous round trips between Norway and England over a six-year period (see Map 5-1 and Table 5-4). It traces the movements of the ship, from the time it was fully loaded on the Telemark coast and ready to depart for Ramsgate, when it arrived in England and when it was ready again to depart from Telemark, thus telling us something about how long a sailing ship spent on such voyages. Naturally, as a sailing ship, the *Luz* was completely reliant on wind for its propulsion and, as we know, sometimes the wind blows in the wrong direction, while at others it does not blow at all.

Table 5-4. The schooner *Luz*: departure dates from Telemark during the 1890s

1891	1892	1893	1894	1897	1898
				29 Mar.	
25 Apr.	20 Apr.	19 Apr.	02 Apr.	26 Apr.	
22 May	18 May	25 May	01 May	29 May	12 May
22 Jun.	22 Jun.		27 Jun.	26 Jun.	
21 Jul.	04 Aug.	19 Jul.	26 Jul.	27 Jul.	04. Jul.
20 Aug.	31 Aug.	18 Aug.	21 Aug.	24 Aug.	09 Aug.
16 Sep.	30 Sep.	19 Sep.	22 Sep.	29 Sep.	15 Sep.
12 Oct.	29 Oct.	29 Oct.	20 Oct.	23 Oct.	
12 Nov.			20 Nov.		02 Nov.
15 Dec.	02 Dec.			02 Dec.	

Sources: Compiled on the basis of the Thos. J. Wiborg Archive. Chartering journal (1872-1891, 1892-1905).

As illustrated in Table 5-4, the *Luz* spent an average of one month on such a roundtrip. The vessel was fully loaded and made ready to depart at monthly intervals regardless of the time of year. There may be several explanations for why the sailing ship operated with such regularity. The first is that one month was a reasonable estimate of this round trip for a sailing vessel, although we know of several instances where sailing ships made faster passages on a regular basis.⁴³⁹ Although it was possible to sail faster, it may be that the importer, who also owned the ship, preferred the regularity of a monthly delivery. For example, the company may have been able to save on storage costs under such an arrangement. It is also

⁴³⁹ Worm-Müller (1935), pp. 688-705.

possible that the vessel may have been carrying a return cargo, such as coal, from England. Our best explanation of the regularity of departures from Telemark is simply that it probably best suited the importer's logistics arrangements.

Shipment of ice to the west coast of Ireland

During the 1890s, T. & A. Wiborg transported a total of 70 shiploads of ice to Ireland. These shipments were exported via British agents, mostly to companies with interests in fishing off the west and southwest coast.⁴⁴⁰ One such company was the Peel Fishing (I.O.M.) Company Limited,⁴⁴¹ based in Peel, the most important fishing port on the Isle of Man.⁴⁴² The company had been founded in 1892 and was owned by the fishermen, who elected both its management and board.⁴⁴³ Its history goes back to the mid-19th century, when the traditional herring fishing off the south coast of Ireland expanded to include mackerel. The fish buyers established a joint company with the aim of controlling the mackerel trade, but this angered the fishermen who, among other things, submitted protests against the joint company in 1886.⁴⁴⁴ The Isle of Man fishermen wanted to form their own company so that they could control fish sales without the interference of intermediaries,⁴⁴⁵ and in December 1892 they founded the Peel Fishing Company. About 130 of the 215 fishing boats in the Isle of Man joined the company and started to sell their fish independently of the buyers.⁴⁴⁶ The company enjoyed some success and in 1895 merged with the Port St. Mary Fishing Company, also from the Isle of Man. However, as with the rest of the fishing industry, the Peel Fishing Company was

440 Thos. J. Wiborg Archive. Protocol with ice contracts (1896–1899).

441 Details of the company are based on a biographical history created by the Manx National Heritage. <https://www.imuseum.im/search/collections/archive/mnh-museum-299836.html>

442 The Isle of Man is a self-governing British Crown Dependency.

443 Manx National Heritage. <https://www.imuseum.im/search/collections/archive/mnh-museum-299836.html>

444 Manx National Heritage. *Peel City Guardian* (1 May 1886). The newspaper cited the Cork Constitution on 1 May 1886. A month later, the newspaper reported that 'Due to the failure of the fisheries here, in Ireland and the Shetland Isles, disputes arose between the fishermen and the buyers over the prices of fish.'

445 *Ibid.* (19 June 1886).

446 *Ibid.* (3 December 1892).

impacted by a major downturn towards the end of the century and, in 1899, its finances were no longer viable, and the company was dissolved.⁴⁴⁷

One objective stated in the Peel Fishing Company's Articles of Association was: '*To purchase, hire or charter steamers, hulks, boxes, ice, and all such plant and fishing gear that is necessary for the Company to conduct its business*'.⁴⁴⁸ In 1897 and 1898, the company bought ice through agents from T. & A Wiborg.⁴⁴⁹ It wanted ice to be delivered in the spring to one or two of four ports on the south or southwest coast of Ireland (see Map 5-2), where mackerel fishing was taking place. The request stated, '*by Steamer to Kinsale, Baltimore, Berehaven, Crookhaven or Fenit*'.⁴⁵⁰



Map 5-2. Ice delivery ports in southwest Ireland.

Sources: Compiled on the basis of the Thos. J. Wiborg Archive. Chartering journal (1892-1905).

447 Manx National Heritage.

448 Ibid.<https://www.imuseum.im/search/collections/archive/mnh-museum-299836.html>

449 The ice was bought through Liverpool agents Lorentz Gjersoe in 1897 and Brodersen, Vaughan & Co. in 1898.

450 Thos. J. Wiborg Archive. Protocol with ice contracts (1896-1898), Chartering journal (1892-1905).

The contracts specified that an additional fee should be paid to T. & A Wiborg if Fenit was to be one of the ports where ice was to be delivered,⁴⁵¹ but there is no record in the archive as to why this extra fee was necessary. Fenit Port offered a newly constructed harbour and loading quay, built in 1880, and was neither exposed nor primitive in terms of facilities. It also had a railway connection to the county town of Tralee, which had been opened in 1887.⁴⁵² As shown in Picture 5-7, the railway at Fenit extended onto the quay where special trains could pull up directly alongside berthed ships for loading and unloading.⁴⁵³ It is not clear if incoming ships were levied an additional fee or a larger fee than at the other ports, or if the extra cost was levied because Fenit was more remote than the other Irish ports.⁴⁵⁴ We will return to ice exports to Ireland later in the chapter.



Picture 5-7. Fenit's railway extending onto the loading quay.

Source: Photo © Albert Bridge (cc-by-sa / 2.0).

Exports of ice to the US in 1890

As discussed in Chapter 2, ice was only exported from Norway to the US for a few years. The distances over which the transport of ice was profitable depended on the price that the ice could be sold at, set against

⁴⁵¹ Ibid.

⁴⁵² Today Fenit is Europe's westernmost commercial port. <https://en.wikipedia.org/wiki/Fenit>

⁴⁵³ Tralee Fenit Greenway. <http://www.traleefenitgreenway.com/history/>

⁴⁵⁴ Wikipedia. *Fenit*. <https://en.wikipedia.org/wiki/Fenit>

the costs of chartering the vessel and costs of transport. These factors were closely related to market demand and climatic temperatures. When T. & A. Wiborg exported ice to the US in 1890, the winter in New York was uncommonly mild,⁴⁵⁵ leading to rising prices which made it profitable to export ice from Norway. Three shipments, carrying in all 1,674 register tons, were exported by T. & A. Wiborg⁴⁵⁶ to be sold through the Norwegian⁴⁵⁷ agent Carsten Boe & Co. in New York.⁴⁵⁸ The first ship, a barque called *Carl*, was fully loaded at Bjerkås in Kristiania Fjord on 5 July and arrived in New York in early September, where its cargo was sold to the National Ice Co. This was followed by the barque *Preciosa*, which completed loading at Vold in Volds Fjord (Skiens Fjord) on 14 July and also arrived in early September. Its cargo was sold on arrival.



Picture 5-8. The barque *Preciosa*.

Source: Courtesy of the Norwegian Maritime Museum.

455 Parker (1981), p. 3; Worm-Müller (1935), p. 606.

456 Thos. J. Wiborg Archive. Chartering journal (1872–1891), p. 92, Invoice records (1876–1890), pp. 502, 503, 516.

457 Onestad (2016), p. 92. Carsten Boe was from Arendal in Norway and was established as a broker in New York.

458 Ibid.; *New York Tribune* (30 March 1887); *New York Herald* (30 January 1891).

The third consignment was shipped by the schooner *Achilles*. When the ship arrived at the loading port of Knardalsstrand in Skiens Fjord, an argument about the loading operation developed between the captain and T. & A. Wiborg. The captain wanted the ice delivered on deck, while the company insisted that it should be delivered on the quay alongside the vessel. The captain also wanted to use his own stevedores to load the ship.⁴⁵⁹ As a result of the disagreements, the vessel, which had arrived on the evening of 3 July, was not ready to depart until the 21st.⁴⁶⁰ Before the ship departed, the captain did not sign the loading papers drawn up by T. & A. Wiborg as was common practice, but instead returned them by post. The returned loading papers (bill of lading) contained claims for compensation for 8.5 lay days and for the hoisting of ice on board the ship. In addition, the statement on the loading papers that the ice was ‘in good and proper condition on departure, and should, after a trouble-free journey, be delivered to the recipient in the same condition’ was crossed out, presumably by the captain.⁴⁶¹ When the *Achilles* arrived in New York on 19 September, the ice remained unsold. According to the agent Boe, this was due to the fact that the captain’s annotations to the bill of lading made the ice unsaleable in a rapidly falling New York market in the autumn of 1890.⁴⁶² After two weeks, the captain finally managed to sell part of the unmelted ice shipment at auction for USD 2.15 per tonne,⁴⁶³ which was probably considerably lower than could have been expected. This caused the vessel’s owners, Blakstad, Holta & Co. and N. Kittelsen, to sue T. & A. Wiborg for a little in excess of GBP 466 as compensation for lay-day expenses, hoisting costs and other shipping-related expenses.⁴⁶⁴ In the court judgment of 5 December 1894, T. & A. Wiborg was acquitted, but was unsuccessful in its counterclaim for damages. In order to cover

459 Siewers (1903), pp. 248–254; *Store Norske Leksikon* (2018). Reference to stevedores’ work with loading and unloading ships.

460 Siewers (1903), pp. 248–254 The last date of arrival at the loading location was 20 July.

461 Siewers (1903), p. 249. In Norwegian: «under hosstaaende Mærke, i god og forsvarlig Stand, for efter lykkelig fullendt Reise at levere alt i samme Tilstand».

462 Thos. J. Wiborg Archive. Copy book (1888–1892), p. 488. Letter from Carsten Boe & Co., April 1892. Boe bases his argument on the fact that no ice buyer would purchase a shipment if the loading papers indicated possible involvement in a dispute.

463 Siewers (1903), p. 254.

464 *Ibid.* The verdict in this case can be found here:

some of the vessel's expenses, the shipping company was allowed to keep the amount received by the captain for the sale of part of the remaining ice cargo in New York.

These three sales of ice in the US in the 1890s were the only ice export transactions made by T. & A. Wiborg in that country. The archives do not specify why this was the case, but it is clear that the long distance between Norway and the US played an important role. The passage to New York took about two months, compared to only one week to the UK.⁴⁶⁵ The cost of chartering the vessels (GBP 20 per long ton for the *Carl* and GBP 18 for the *Preciosa*) was, naturally, significantly higher than it was between Norway and the UK (roughly GBP 10 and 11 per long ton for two similar vessels).⁴⁶⁶ When the *Carl* arrived in New York, 60% of the cargo had melted during the voyage. Similarly, when the *Preciosa* berthed at New York, 43% of the cargo had melted during passage.

Exports to New York were considerably riskier than those to Europe and the same levels of profitability were difficult to achieve, even though market demand and high temperatures made prices high in the US. T. & A. Wiborg, for example, earned only half of the revenues using the *Carl* to transport ice to New York compared with what it earned on sales to the UK using similar ships due to ice melting on the longer journey, despite the fact that the selling price of ice once in port in New York was the highest of the shipments.⁴⁶⁷

The peak is reached: the difficult record-year of 1898

As we have seen, 1897 was one of the worst years financially for ice exports in the 1890s.⁴⁶⁸ The sector encountered problems such as large stocks, lack of cooperation among the ice exporters, downward pressure on prices and contracts that were generally unfavourable to Norwegian

465 Thos. J. Wiborg Archive. Chartering journal (1872–1891).

466 Thos. J. Wiborg Archive. Invoice book (1876–1890).

467 Thos. J. Wiborg Archive. Chartering journal (1872–1891), p. 91–92, Invoice book (1876–1890), pp. 502–503.

468 *Farmand* (16 January 1897).

exporters. This caused many ice exporters to suffer significant losses.⁴⁶⁹ In the late autumn of 1897, there was no indication that the next year would be any different. In fact, it became extremely turbulent. During the festive season, prevailing westerly winds and higher temperatures caused the weather to be more like spring than mid-winter.⁴⁷⁰ The ice melted on the lakes and ponds, especially near the coast. The British trade journal *Cold Storage and Ice Trades Review* reported that Kragerø would only be able to deliver less than half of an average year's production and that the ice would be of reduced thickness.⁴⁷¹ In the northern Kristiania Fjord area, however, the ice was thicker and of better quality.⁴⁷² There was also increased use of lakes further inland. Altogether the result was a high volume of ice production and large quantities of ice that had to be transported long distances to the ports. The Kristiania area was in a good position to operate under these conditions as railway networks covered the area.

The winter was also mild in the UK and on the Continent, and it was impossible to produce local natural ice in either the UK or Germany.⁴⁷³ This situation resulted in high levels of demand, especially in Germany (see Figure 5-2 and Picture 5-9), and limited supply led inevitably to higher prices. However, the terms of export contracts that had been entered into in the autumn of 1897 meant that much of the ice for delivery in 1898 was sold at the old prices. Ice exporters who had entered into such contracts thus missed out on the initial price increases in 1898.⁴⁷⁴ Those with a so-called 'winter clause' (*force majeure*) in their contracts had been very prescient.⁴⁷⁵

469 *Norges Sjøfartstidende* (3 January 1899).

470 *Ibid.*

471 *Cold Storage and Ice Trades Review* (April 1898), Vol. 1, No. 1.

472 *Ibid.*

473 *Norges Sjøfartstidende* (3 January 1899); *Cold Storage and Ice Trades Review* (1898), Nos. 1 and 2.

474 *Norges Sjøfartstidende* (3 January 1899).

475 Thos. J. Wiborg Archive. Protocol with ice contracts (1897- 1898). A so-called 'winter clause' grants an exporter the right not to deliver ice previously agreed upon under certain conditions, such as in the event of mild weather, or if an ice house storing the delivery is burned down or subject to other accidents.

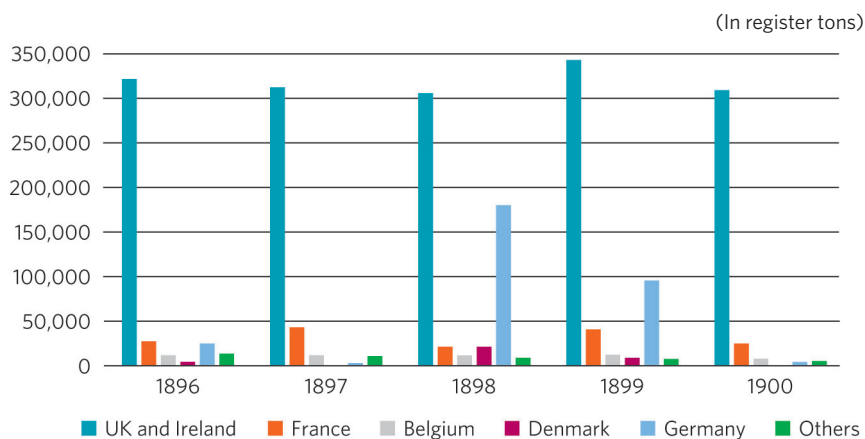


Figure 5-2. Norwegian ice exports to primary destinations (1896-1900).

Source: Compiled on the basis of Statistics Norway. Historical statistics of external trade (1896-1900).

By the end of February 1898, the prices of ice sales to Germany had doubled, leading to a boom in the market for Norwegian ice exports.⁴⁷⁶ Speculators bought up rights to ice harvesting in areas that were so far inland that the rail journey to the nearest port took more than a day.⁴⁷⁷ Some travelled to Nordbotten in Sweden to obtain ice, and the fever spread to Finland and Russia, from where ice was sent to North Sea ports (the European market) for the very first time.⁴⁷⁸

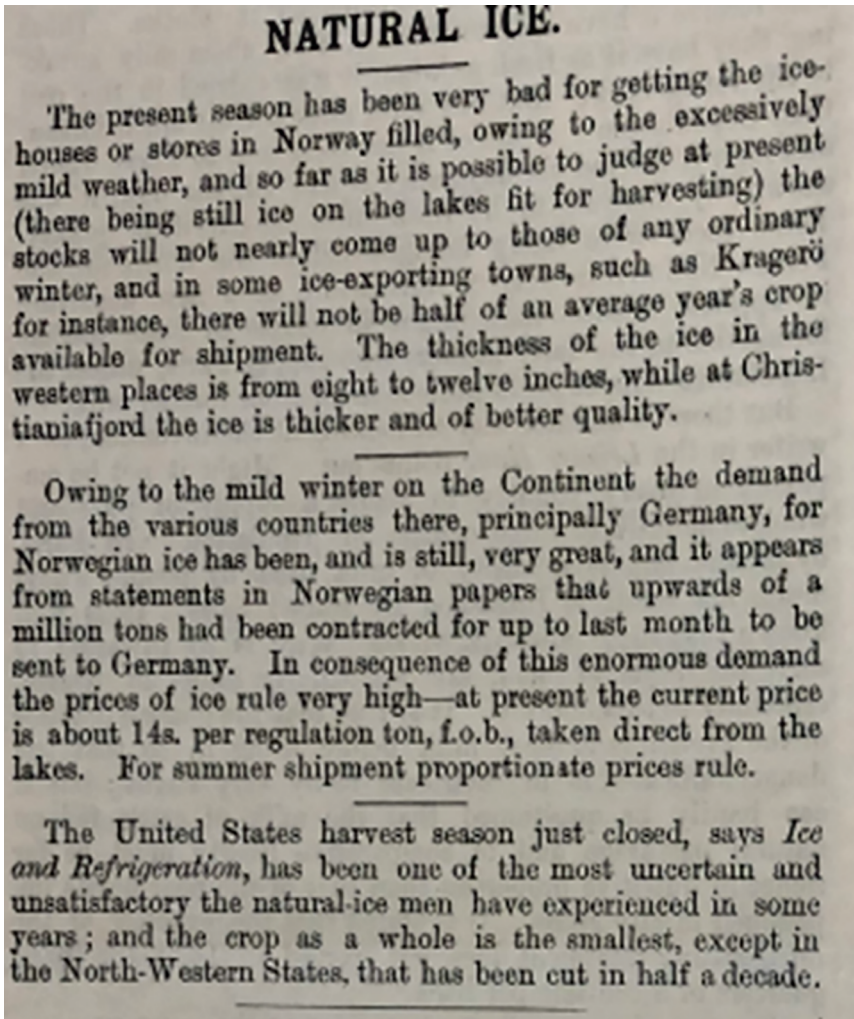
While all this was happening, ice production costs rose because workers were demanding higher wages and landowners wanted more money for leasing out their ponds, lakes and ice storage facilities.⁴⁷⁹ The exporters also had to pay for rail transport. The ripple effects of the boom were enormous, and the periodical *Norges Sjøfartstidende* reported ‘Prosperity and movement on the coast’ which reminded people of the golden age of the 1870s. *Norges Sjøfartstidende* made a clear distinction between the experienced ice exporters and the speculators, emphasising that it was unusual for the former to engage in such ‘wild operations’ where record prices were required to generate profitability.

476 *Norges Sjøfartstidende* (3 January 1899); *Farmand* (5 March 1898, 12 March 1898).

477 *Norges Sjøfartstidende* (3 January 1899); *Farmand* (26 March 1898).

478 *Norges Sjøfartstidende* (3 January 1899).

479 *Ibid.*



Picture 5-9. Article describing the market for ice, early 1898.

Source: *Cold Storage and Ice Trades Review* (April 1898).

The market upturn did not apply to ice exports sent to the UK, with the exception of price increases for cargoes bound for fishing ports in Ireland. In the rest of the UK, contracts had been concluded the previous year and ice was sold at 1897 prices. Towards the end of March, German demand had been met and prices began to fall.⁴⁸⁰ This led to panic

⁴⁸⁰ *Norges Sjøfartstidende* (3 January 1899); *Cold Storage and Ice Trades Review* (1898), No. 2.

among Norwegian speculators, who had to sell to cover the costs they had incurred. This further boosted supply, demand was met and markets were saturated, leading to a rapid downward spiral in prices and major losses for many of the speculators.⁴⁸¹

However, the established ice exporters stuck together and demanded higher prices before selling,⁴⁸² which resulted in price rises during June and July.⁴⁸³ By mid-August, when temperatures rose in Europe, the market took off again. Ice stocks were exhausted both in the UK and on the Continent, but a lack of transport vessels limited exports.⁴⁸⁴ In spite of this, both the prices and the level of exports continued to rise and peaked as September drew to a close, before falling again and remaining low throughout October.⁴⁸⁵ At the time, this sudden fall was explained by two factors. First, ice stocks in Europe had been filled to capacity and second, shipments were sent from Norway entirely speculatively, without the cargo having any purchaser.⁴⁸⁶ The rest of the year continued mild and demand increased again in November. By now, however, Norwegian stocks were exhausted and only those exporters with residual ice in stock were able to benefit from the upturn.⁴⁸⁷

In December 1898, the trade journal *Farmand* concluded that the year had transformed the Norwegian ice industry.⁴⁸⁸ It was pointed out that importers in London had learned how dangerous it could be during mild winters to focus on ice deliveries from a single location (in this case Kragerø). Costs and wages had risen sharply in Norway and had reached new levels. *Farmand* stressed that the industry would have to take these increases into account going forward. At the same time, they anticipated higher prices, not only in the following year, but also in the foreseeable future. According to *Farmand*, the shipping sector was benefiting from this, as shipping rates were significantly higher at the close of 1898 than

481 *Norges Sjøfartstidende* (3 January 1899); *Farmand* (2 April, 16 April, 25 June 1898).

482 *Cold Storage and Ice Trades Review* (1898), No. 4; *Farmand* (April, May 1898).

483 *Cold Storage and Ice Trades Review* (1898), No. 4; *Farmand* (June, July 1898).

484 *Cold Storage and Ice Trades Review* (1898), No. 5; *Farmand* (20, 27 August 1898).

485 *Cold Storage and Ice Trades Review* (1898), No. 8; *Farmand* (September 1898).

486 *Cold Storage and Ice Trades Review* (1898), No. 8; *Farmand* (15 October 1898).

487 *Cold Storage and Ice Trades Review* (1898), No. 8; *Farmand* (5, 12 November 1898).

488 *Farmand* (17 December 1898).

they had been at the beginning of the year.⁴⁸⁹ The development of price trends during 1898 is illustrated in Figure 5-3.



Figure 5-3. Price fluctuations in Norwegian ice during 1897 and 1898.

Source: From statistics published in the trade periodical *Norges Sjøfartstidende* (3 January 1899).

T. & A. Wiborg's ice production in 1898

How did T. & A. Wiborg manage in this complex situation, characterised by so much uncertainty and scope for error, with a mix of opportunities for major gains and potential for significant losses? The company had plans to increase its ice production.

It has been emphasised that long-term customer relationships and connections were important, especially during troubled times. This is evident in the case of T. & A. Wiborg in 1898, when the firm's long-standing bank connection stepped in. In a letter to the company's bank, the banking firm Thos. Joh. Heftye & Son, 10 January 1898, T. J. Wiborg set out his analysis of the current situation.⁴⁹⁰ He noted that the preceding years had been problematic for the company, which had struggled in the face of fierce competition, especially from ice

⁴⁸⁹ *Farmand* (17 December 1898).

⁴⁹⁰ Thos. J. Wiborg Archive. Copy book (1889-1898), p. 400. Letter to Thos. Joh. Heftye & Son, 10 January 1898.

exporters in Kragerø.⁴⁹¹ During this time, and in contrast to conditions in more normal winters, ice from the town had maintained the same quality and thickness as that from Kristiania. Moreover, Kragerø ice had been dumped in the market at prices so low that it had been almost impossible to make exports profitable.⁴⁹² The winters had been cold, he wrote, making many exporters so complacent that their delivery contracts contained no contingency for mild winters.⁴⁹³ This had led them to undertake major deliveries at very low prices, which meant that competitors such as T. & A. Wiborg were only able to sell ice to their loyal and well-established customers.

The prices that the company obtained at the time were indeed low. In the ‘tough’ year of 1897, the value had been as low as NOK 2.28.⁴⁹⁴ But the weather provided new opportunities. By the close of 1897, while temperatures stayed high, T. & A. Wiborg started to expand by exploiting all of the ice facilities it had at its disposal for the first time in many years. In spite of the mild weather, the ice in the company’s ponds in the inner part of Kristiania Fjord had attained a thickness of between 7 and 11 inches, and as much as 13 inches in ponds at higher altitudes. Given the weather conditions, these thicknesses were considered excellent.⁴⁹⁵ On the coast further south, however, conditions were poor, with ice thicknesses in the Kragerø district between 2 and 8 inches, depending on the exposure of the ponds to the mild winds. The Kragerø companies that had previously been undercutting their competitors were now facing some major problems. They were unable to make agreed deliveries and were not protected by mild weather – *force majeure* – clauses in their contracts.

T. & A. Wiborg was in a much better position and wrote to the Thos Joh. Heftye & Son bank that it had already received requests from Denmark and Germany, and that the company saw the prospects for 1898 in a very positive light. It emphasised that the ponds it had at its

491 Ibid.

492 Ibid.

493 Ibid.

494 Thos. J. Wiborg Archive. Chartering journal (1892–1905). Both under FOB terms and under CIF terms, less transport costs.

495 Thos. J. Wiborg Archive. Copy book (1889–1898), p. 400. Letter to Thos. Joh. Heftye & Son, 10 January 1898.

disposal were ideally suited to ice production in mild weather. The essence of the letter came next. It notified the bank that in order to reap the benefits of this major opportunity, a loan of NOK 6,000 was needed which would be used to cover salaries and other production expenses while it waited for payment from sales of ice.⁴⁹⁶ Four days later, a second letter was sent, informing the bank that it had now received further inquiries from southern Sweden, Denmark and from as far away as Königsberg in East Prussia, as well as from its main markets in the UK and France.⁴⁹⁷ Thos. Joh. Heftye & Son now asked for additional documentation, and on the 18 January, T. & A. Wiborg sent a list of the company's facilities both in Telemark and the inner Kristiania Fjord area, together with a list of the company's assets and liabilities and its financial results for 1897.⁴⁹⁸

Aktiva

<i>Syverstad Isanlæg, Ask med 2 damme, ishus og væningshus</i>	21000
<i>Bondivannet med 2 Iskædet Ask</i>	2500
<i>Svestad Isanlæg, Nesodden med 1 Iskjern, 4 damme, ishus og væningshus</i>	14000
<i>Digerud Isanlæg, Ask med 1 Iskjern, 1 damme, ishus og væningshus</i>	10000
<i>Blylaget Isanlæg, Nesodden med 2 damme, ishus, isvædder etc.</i>	9500
<i>Grøstad Isanlæg, Nesodden med 1 damme, ishus og væningshus etc.</i>	8000
<i>Elvik Isanlæg, Skjensfjord med 2 damme, ishus, isvædder etc.</i>	9000
<i>Stokkevannet Isanlæg, Bamble med 1 Iskjern, 1 damme, ishus og væningshus etc.</i>	7000
<i>Sortebogen Isanlæg, Bamble med 1 Iskjern, 1 damme, ishus og væningshus etc.</i>	115500
<i>Sortebogen Sagbrug, næsten nyt</i>	2500
<i>Knardal Isanlæg, Porsgrunn med 2 damme, ishus og væningshus etc.</i>	21000
<i>Sveinestad Isanlæg, Bamble med 1 Iskjern, 1 damme, ishus og væningshus etc.</i>	33000
<i>Sic. Beholdning</i>	13000
	<u>156000</u>
<i>Saldo pr 1^{te} januar 1898</i>	149200

Ice facilities	Location
Syverstad	Asker
Bondivannet	Asker
Svestad	Nesodden
Digerud	Frogn
Blylaget	Nesodden
Grøstad	Nesodden
Elvik	Bamble
Stokkevannet	Bamble
Sortebogen	Bamble
Knardal	Porsgrunn

Picture 5-10. List of ice facilities operated by T. & A. Wiborg, 1 January 1898.

Source: Thos. J. Wiborg Archive. Copy book (1889-1898), p. 405. Company assets as of 1 January 1898.

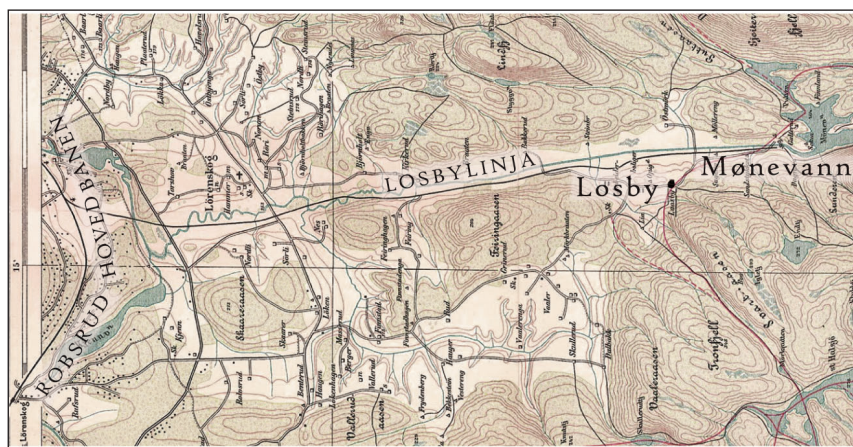
496 Ibid.

497 Ibid., p. 407. Letter to Thos. Joh. Heftye & Son, 14 January 1898. (Königsberg is now Kaliningrad, a part of Russia).

498 Ibid., p. 411. Settlement for 1897, 18 January 1898.

On 19 January 1898, Thos. Joh. Heftye & Son sent confirmation that the loan was approved.⁴⁹⁹ It was a short-term loan as requested, in the form of an overdraft of NOK 6,000 to be repaid in May or June when the company was due to receive payments for ice deliveries.⁵⁰⁰ At the time the loan was granted, T. & A. Wiborg had ten ice facilities at its disposal (see Picture 5-10), and the ice produced at these plants was the basis for the company's potential sales volumes.

T. & A. Wiborg began by increasing production at its inland ice facilities rather than those on the coast. It also engaged in new, short-term projects, both in the Telemark area and close to Kristiania, which all profited from easy access to the railway network which linked the ice drifts to the ports where ice was shipped out. Two of the ice harvesting operations T. & A. Wiborg became involved in, in February 1898, were in Losby and Robsrud, both just north of the capital⁵⁰¹ (in today's municipality of Lørenskog). (See Map 5-3). Here, the company collaborated with William Adolph Duborgh, who was a leading figure in the Kristiania business community.⁵⁰²



Map 5-3. The Losby, Robsrud railway network.

Source: A/S Akersbanene (1928).

499 Ibid., p. 412. Letter to Thos. Joh. Heftye & Son, 21 January 1898.

500 Ibid., p. 402. Letter to Thos. Joh. Heftye, 10 January 1898.

501 Thos. J. Wiborg Archive. Folder marked 'General Ledger T. & A. Wiborg' (1898), referring to Robsrud and Losby.

502 Ibid.; Brinchmann & Hammer (1912), p. 58; *Norges Handels og Sjøfartstidende* (13 June 1929).

The agreement between them was that Duborgh received one third and T. & A. Wiborg two thirds of the ice from the harvesting. The Robsrud ice drift, at the lake Langvannet, was located close to the main railway line to Kristiania, while the Losby ice drift was on the Losby line, a side track that had been built in the 1860s to transport timber.⁵⁰³ At Losby, harvesting took place at the lake Mønevannet. The Robsrud-Losby operation was a one-year project. It began in February, when the ice was cut and stored on-site, then transported by rail to Kristiania in May and August or September to be sold and prepared for shipment.⁵⁰⁴ By the turn of the year, T. & A. Wiborg had ceased its operations in the Losby and Robsrud area.

The company also engaged in ice harvesting in Heggedal, west of Kristiania (in Asker).⁵⁰⁵ The lake in Heggedal, Gjellumvannet, was a fair distance inland, but a railway station had been built just south of the lake in 1874, and ice was easily transported by train to Kristiania and exported.⁵⁰⁶ However, rail freight was expensive and even though the sale of this ice generated revenues of more than NOK 35,179, the resulting profits were just above NOK 2,907.⁵⁰⁷ Rail freight came to about 30% (ca. NOK 9,826) of the company's total expenditure, which was NOK 32,273. T. J. Wiborg wrote in his ice diary that *'The railway was to blame for not providing us with a far better result.'*⁵⁰⁸ The Heggedal enterprise was also a one-year project and T. & A. Wiborg had ceased operations in the area by the end of the year.⁵⁰⁹

In 1898, T. & A. Wiborg also collaborated with their brother, Ludvig Wiborg, in ice harvesting operations at the lake Aaklungen (now

503 Lokalhistoriewiki. *Losbylinja*. <https://lokalhistoriewiki.no/wiki/Losbylinja>, Wikipedia. *Losbylinja*. <https://no.wikipedia.org/wiki/Losbylinja>

504 Thos. J. Wiborg Archive. Folder marked 'General Ledger T. & A. Wiborg' (1898), Chartering journal (1892–1905).

505 Thos. J. Wiborg Archive. Folder marked 'General Ledger T. & A. Wiborg' (1898), referring to Heggedal.

506 Heggedal.no <https://iheggedal.no/heggedal-sentrum-kort-resyme-av-historien/>

507 Thos. J. Wiborg Archive. Diary for ice (1898–1929).

508 Ibid.

509 Thos. J. Wiborg Archive. Folder marked 'General Ledger, T. & A. Wiborg (1898), referring to Heggedal. The only costs involved in this plant were the transport of an ice plough and a lift wheel.

Oklungen) in Telemark.⁵¹⁰ Aaklungen was situated inland, alongside a railway line (connecting Larvik, Porsgrunn and Skien), and there was a station at the lakeside. The company built an ice stack on a plot it leased in the station area. Operations began in February, and in early March, the first six wagons with ice were sent to Skien.⁵¹¹ More ice followed later in the year, sent by rail to both Skien and Porsgrunn for onward export. Ludvig Wiborg was responsible for activities onsite, and he had the largest stake in the operation.⁵¹² A total of four companies, employing 85 men, cut ice at Aaklungen, and the Wiborg brothers succeeded in taking out the second largest volume of the four.⁵¹³ At the turn of the year, the equipment was transferred to the company's facilities elsewhere, at Sortebogen and Knardalstrand, and T. & A. Wiborg ceased its operations at Aaklungen.

The company also took out a temporary lease at Nettet in the innermost part of Bunne Fjord, near Kristiania, where it harvested ice, and leased the rights to some ponds, including Frogndammen⁵¹⁴ (from Jens Brandt at Froen's Farm).⁵¹⁵ In order to gain access to Nettet in mid-winter, the company chartered the icebreaker SS *Isbjørn* (see Picture 5-11) to drive a passage through the ice on the fjord so that the ice harvesting equipment could be brought in by boat.⁵¹⁶ The equipment included an ice plough, used to cut the ice after the snow on the ponds had been cleared off manually. At the end of the year, the business was closed down and all equipment transferred to the company's facility at Digerud in Nesodden. By then, T. & A. Wiborg had harvested an impressive 4,098 register tons of ice at a profit of NOK 22,587.⁵¹⁷

510 Ibid., referring to Aaklungen.

511 Ibid.

512 Ibid., referring to profits from Aaklungen.

513 Hals (1968), p. 139.

514 Thos. J. Wiborg Archive. Diary for ice (1899–1929), Folder marked 'General Ledger T. & A. Wiborg' (1898), referring to the ponds at Frogndammen.

515 Weydahl-Ottesen (2006), p. 21.

516 Thos. J. Wiborg Archive. Diary for ice (1899–1929), Folder marked 'General Ledger T. & A. Wiborg' (1898), referring to Frogndammen.

517 Thos. J. Wiborg Archive. Diary for ice (1899–1929).



Picture 5-11. The icebreaker SS *Isbjørn*.

Source: Anders Beer Wilse. Courtesy of the Norwegian Maritime Museum

Yet another pond leased by T. & A. Wiborg in 1898 was Blikslitjernet in Fjellstrand (Nesodden), where 1,271 register tons of ice were harvested and sold at a profit of a little more than NOK 4,631.⁵¹⁸ Ice was also harvested from Blikslitjernet in the next ‘good year’, namely 1904. The Nettet and Blikslitjernet operations are examples of ice ponds that were leased and held in reserve for potential harvesting in years when the market was good and extra capacity was needed.⁵¹⁹

T. & A. Wiborg and ice exports in 1898

As we have seen, T. & A. Wiborg was busy expanding its operations in 1898, having spent the early months of the year preparing and securing finance for the expansion. In terms of export markets, however, late 1897 as well as early 1898 turned out to be far from easy. The difficult

⁵¹⁸ Ibid.

⁵¹⁹ Thos. J. Wiborg Archive. Folder marked ‘General Ledger T. & A. Wiborg’ (1898), referring to Blikslitjernet and Fjellstrand.

conditions experienced in preceding years continued. A letter to T. & A. Wiborg, sent in October 1897 by Joseph Johnston & Sons, Fish Curers, Salmon Fishers, &c., based in Montrose, Scotland, stated that:⁵²⁰

We shall be pleased to leave the price as you suggest in your letter of 15th. We know quite well you can have very little profit at the prices, but the Ice trade is very much cut up here as elsewhere and there are rumours of an Ice Manufactory⁵²¹ being started here whether it comes to anything or not.⁵²²

T. & A. Wiborg had entered into several forward contracts for 1898, all based on 1897 prices. Both T. & A. Wiborg and Joseph Johnston & Sons evidently shared the view that only ‘very little profit’ would be generated. Even though most of T. & A. Wiborg’s contracts contained a winter clause,⁵²³ the company was unable to invoke *force majeure* because it was able to produce ice and was thus obliged to fulfil the contracts.

Figure 5-4 shows the development of ice prices experienced by T. & A. Wiborg in 1898, based on the contracts from the autumn of 1897 and

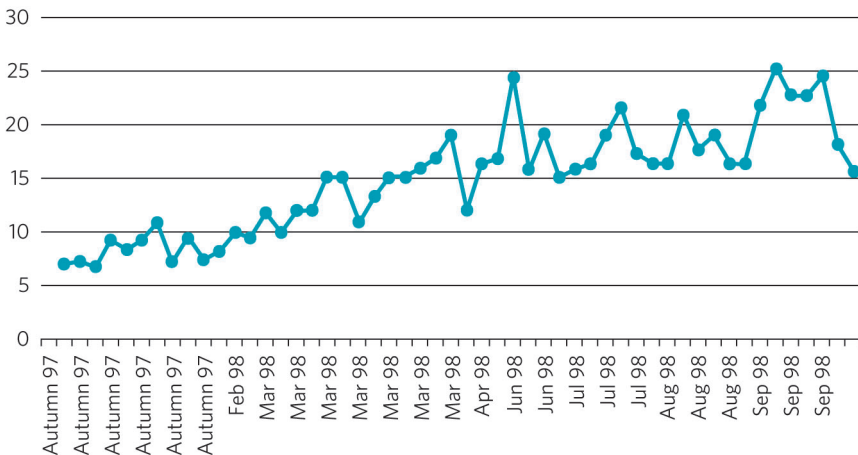


Figure 5-4. Development of ice prices experienced by T. & A. Wiborg in 1898.

Source: Compiled on the basis of the Thos. J. Wiborg Archive. Protocol with Ice contracts (1897–1898).

520 Thos. J. Wiborg Archive. Protocol with ice contracts (1897–1898). Letter/contract from Joseph Johnston & Sons, Montrose.

521 See the discussion of natural ice versus artificial ice earlier in the chapter.

522 Thos. J. Wiborg Archive. Protocol with ice contracts (1897–1898). Letter/contract from Joseph Johnston & Sons, Montrose.

523 Thos. J. Wiborg Archive. Protocol with ice contracts (1897–1898).

throughout 1898. In general terms, the prices experienced by the company followed the general trend in Norway, with the exception that Wiborg achieved better prices earlier in the summer than was the case nationally.

During the autumn of 1897 and the first few months of 1898, when prices were low, T. & A. Wiborg sold to long-established customers. The first listing in the company's chartering journal for 1898, entered in the autumn of 1897, concerned the sale of ice to Josias Pernis in Cagliari, Sardinia.⁵²⁴ The second listing concerned sales to Trouville-sur-Mer, a town a little to the south of Le Havre in France, where T. & A. Wiborg had several connections.⁵²⁵ Sales to established customers continued throughout January and on into February.

At the end of February, prices began to rise. Ice production in Germany had failed and customers who normally bought German ice had to look elsewhere. This resulted in a number of sales for T. & A. Wiborg, completed in March at very favourable prices. The company was now able to fully exploit the investments it had made at the turn of the year to increase ice production. Contracts were entered into for the sale of ice to importers in Denmark and Germany at higher prices than those that prevailed earlier in the year.⁵²⁶

The company exported less to the UK and more to ports in Denmark, such as Tuborg and Copenhagen, and in Germany to Brake, Flensburg, Kolberg and Stettin.⁵²⁷ The company's sales of ice to Germany were concentrated in March.⁵²⁸ These sales provide an excellent illustration of how prices rose as March progressed. Winter shipping prices of RM 12 per register ton at the beginning of the year rose to RM 19 by the end of March. Prices also increased for deliveries of ice to the fishing industry in Ireland because the season was underway and there was an urgent need to refrigerate catches. On 12 March, T. & A. Wiborg was contacted by the brokers Brodersen, Vaughan & Co. in Liverpool acting for the Peel Fishing

524 Thos. J. Wiborg Archive. Invoice book (1876–1890).

525 Ibid.

526 Thos. J. Wiborg Archive. Protocol with ice contracts (1897–1898).

527 Thos. J. Wiborg Archive. Chartering journal (1892–1905).

528 Thos. J. Wiborg Archive. Protocol with ice contracts (1897–1898).

(I. O. M.) Co. Ltd., who requested March deliveries of ice to four ports on the southwest coast of Ireland for the third year running, to be shipped by steamer: *‘By Steamer to Kinsale, Baltimore, Berehaven, Crookhaven or Fenit. One harbour 20 /, two harbours 21 /, and if Fenit 6 p extra.’*⁵²⁹ These prices were more than double those quoted for similar deliveries made in 1896 and 1897. On the whole, a number of customers wanted ice and T. & A. Wiborg achieved, as illustrated in Table 5-5, high prices both during the spring and summer of 1898, before prices increased further in the autumn.

Transport of ice and chartering of ships

T. & A. Wiborg’s exports in 1898 illustrate the international character of the ice export trade. Two of the first four vessels that the company chartered were Danish, one was Russian and the fourth Norwegian. Three of the ships sailed to the UK and one to France.⁵³⁰ They were chartered via the Norwegian brokers Camillo Eitzen & Co., N. Møller Holm, and Smith & Co., all of whom were based in Kristiania.⁵³¹

At this point, it is relevant to ask whether transport also became more expensive as ice prices rose and the availability of transport was limited. According to *Farmand*, this happened during some periods in 1898: in early September, a shortage of vessels combined with an increased demand for ice caused by a major heatwave, led to an *‘almost unprecedented rise’* in the rates.⁵³² These high rates continued for a week before returning, together with the ice prices, to a more normal level.⁵³³ *Farmand* also reported that even in late September, the *‘most extravagant prices’* were being paid for vacant ships, before prices and the demand for both ice and vessels fell once again.⁵³⁴ One could argue, though, that the shipping sector benefited, just as *Farmand* had

529 Ibid.

530 Thos. J. Wiborg archive. Chartering journal (1892–1905).

531 Ibid.

532 The rate stated here refers to that for chartering a vessel.

533 *Farmand* (3, 10 September 1898).

534 *Farmand* (1 January 1898).

predicted. However, these abrupt and short price fluctuations also serve to illustrate the difficult and volatile situation that pervaded the ice market in 1898. An ‘ice speculator’, who had purchased ice and chartered a ship at peak prices but failed to sign a sales contract before the market again declined, was in grave danger of suffering significant losses instead of gains.

As for T. & A. Wiborg, the company’s transport expenditure remained at approximately the same level throughout 1898.⁵³⁵ Compared with a normal year, rates varied more, almost from shipload to shipload, but not dramatically. Ice was a typical bulk commodity that virtually all ships were able to carry. Many older Norwegian and foreign wooden sailing ships were no longer equipped for global trade. With price as the most important competitive advantage, they spent their last years in the North Sea trade with transport of various bulk cargoes such as ice and timber.⁵³⁶ As *Farmand* wrote, the fact that all these were engaged at the time when the demand for ice suddenly increased caused an ‘almost unprecedented increase’ in the rates.⁵³⁷ T. & A. Wiborg was not, according to the chartering journal, among the companies that chartered ships during these short-lived price booms.⁵³⁸ This meant that when prices rose, the company’s profits rose correspondingly.

Sales prices during the record year

The eight highest paid cargoes were sold at prices exceeding NOK 20.9 per ton. These transactions were made with importers in France, the UK, Germany and the Netherlands. High prices were achieved in several markets, with overall Norwegian ice exports peaking in September 1898. Table 5-5 lists the range of prices T. & A. Wiborg achieved, from May to September.

⁵³⁵ Thos. J. Wiborg Archive. Chartering journal (1892-1905).

⁵³⁶ *Norges Sjøfartstidende* (3 January 1899).

⁵³⁷ *Farmand* (3, 10 September 1898).

⁵³⁸ Thos. J. Wiborg Archive. Chartering journal (1898).

Table 5-5. The highest prices for ice received by T. & A. Wiborg in 1898

(Prices in NOK, 1898)

Listed in Charter J.	Finished loading	Exported from	Imported to	Sales price per ton	Sales price (pt) in NOK	Tons ice unloaded
28.05.1898	14.06.1898	Næset	Port Haliguen	Fr 34	24.5	97
12.07.1898	02.08.1898	Syverstad	Trouville-sur-Mer	Fr 30	21.6	223
10.08.1898	27.08.1898	Syverstad	Stettin	RM 23.5	21.4	168
29.08.1898	31.08.1898	Robsrud/Losby	Hull	24/	21.8	622
07.09.1898	09.09.1898	Robsrud/Losby	London, Surrey Docks	25/	22.7	500
06.09.1898	16.09.1898	Robsrud/Losby	IJmuiden	25/	22.7	461
03.09.1898	21.09.1898	Robsrud/Losby	Concarneau	Fr 35	25.2	134
24.09.1898	30.09.1898	Grøstad	Grimsby	27/	24.5	580

Source: Compiled on the basis of the Thos. J. Wiborg Archive. Chartering journal (1892–1905).

The highest price was obtained on 3 September 1898, when the company entered into a contract for a shipment of ice to Concarneau in Brittany, France. This ice came from the Robsrud-Losby facilities and had been loaded onto the Danish schooner *Axel* on 21 September. At Concarneau, the ship unloaded 134 tons of ice, at Fr 35 per ton.⁵³⁹

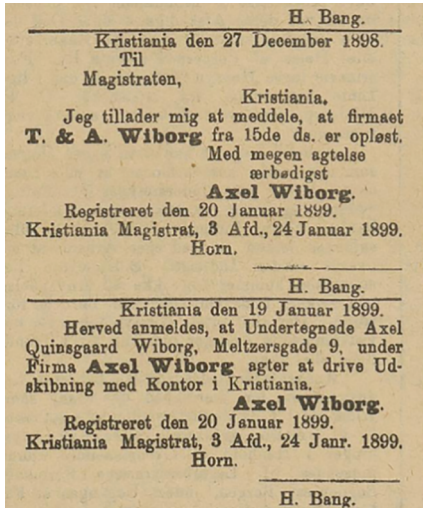
The peak of a very good business year had now been reached, and by this time T. & A. Wiborg had probably sold all the ice that the company had at its disposal. Seven shipments of ice were exported during the last three months of the year, consisting mainly of the final consignments for contracts concluded earlier in the year.⁵⁴⁰

The final shipload of ice of 1898 was loaded at Knardal (in Skiens Fjord) on the day before New Year's Eve. The Norwegian steamship *Anna* set course for Ramsgate with 401 tons of ice, sold at good prices that reflected the healthy economic climate of the year: 20 shillings and 6 pence per ton. This was about twice as much as that achieved twelve months earlier: the last shipload in 1897 was sold for 10 shillings and 3 pence per ton, when 407 tons of ice were sold to Lowestoft.

⁵³⁹ Thos. J. Wiborg Archive. Chartering journal (1892–1905).

⁵⁴⁰ Ibid.

The final shipment in 1898 concluded an excellent, in fact, record year for the company, and Wiborg made the following comment in the chartering journal, '*Shipped in 1898 – 171 ice cargoes, the largest number ever shipped by T + A W, 31/12 98 (sign,) TJW*'. He then added a final comment, '*T & A Wiborg's last year, the company dissolved.*'



Picture 5-12. Dissolution of T. & A. Wiborg and registration of company Axel Wiborg.

Source: *Norsk Kundgjørelsetidende* (28 January 1899).

T. & A. Wiborg was dissolved on 15 December 1898 (see Picture 5-12).⁵⁴¹ The dissolution of the company may seem surprising. T. & A. Wiborg had doubled its export volumes from 23,313 register tons in 1897 to 47,889 in 1898, and the value of ice sales had increased from NOK 55,634 to a record high of NOK 429,554 in the same period.⁵⁴² According to a memorandum written many years later,⁵⁴³ at the time of the dissolution the company had revenues of NOK 580,000, costs amounting to NOK 373,000, and profits of a healthy NOK 207,000.⁵⁴⁴ (About NOK 15.5 million in 2020). Although there is

541 The last act in the dissolution of the company was the sale of the Knardal ice production facility in November 1900. Most of the revenue from this sale was used to redeem the mortgage, with the remainder shared among the former partners. Thos. J. Wiborg Archive. Copy book (1900-1910), p. 14. Transfer document for the sale of the Knardal ice facility.

542 Compiled on the basis of: Thos. J. Wiborg Archive. Chartering journal (1897-1898); Statistics Norway. Historical statistics of external trade (1897-1898). Values are derived from calculations (per register ton) on the basis of Statistics Norway's Historical statistics of external trade and are then multiplied by the company's export volumes (also in register tons).

543 Thos. J. Wiborg Archive. Folder marked 'General Ledger for T. & A. Wiborg' (1898). This memorandum was written in the 1980s/1990s by Jan Wold Hansen, who was researching the archive material at this time. The ledger has since been lost.

544 Turnover is calculated by adding up the credits entered into the accounts. Entries in 1899 which apply to 1898 are also included. The costs have been calculated in the same way. The stated profit represents the amount prior to tax and allocations.

some uncertainty in these calculations, 1898 was undoubtedly a record year, with profits more than 10 times higher than in 1897.⁵⁴⁵

A pertinent question at this point is why did the brothers Thomas and Axel Wiborg end their collaboration at this particular time? In the year 1898, their joint company exported more ice and earned greater profits than in any of the preceding 16 years during which they operated the T. & A. Wiborg company together. The company exported 8.7% of the total Norwegian ice exports and was a major player in the ice export industry. It had even made a profit during the crisis of 1897 and had had the ability and finances to turn around and act quickly when necessary.

After the peak: the dissolution of T. & A. Wiborg and the way ahead

There are no sources that can ascertain why the T. & A. Wiborg company was dissolved. Is it possible that one or both of the brothers thought that they could earn more money independently, or did they disagree on the way forward for their joint enterprise? While current source material does not provide any information regarding their respective motives, disagreements about the future direction of the company should not be ruled out. Here, we note that from 1899, Thomas Johannes and Axel Wiborg went their separate ways, but both of them stayed in the ice business. As we shall see, T. J. Wiborg pressed forward with ice exports as part of a new company, Thos. J. Wiborg. However, some of the customers with whom he had long-lasting relationships stopped doing business with him but did not necessarily stop buying ice. They may have continued as customers of Axel Wiborg in the years leading up to 1914, when he left the ice industry.⁵⁴⁶

545 Thos. J. Wiborg Archive. Copy book (1889–1898), pp. 409, 411. Profit and loss account/settlement account (1897). The profit on ice in 1897 was just a little over NOK 15,879, with a total result of NOK 20,307.

546 Axel Wiborg played a key role in a major contemporary scandal. See Nasjonalbiblioteket. *Endelig medskyldig*. <https://www.nb.no/artikler/endelig-medskyldig/>

During the 1890s, ice production and export volumes increased, but viewed as a whole the value of ice and profitability were lower than in previous decades. Three causal factors were at play: (a) increased competition resulting from the emergence on the market of artificial factory ice; (b) intense competition and an absence of solidarity among Norwegian ice exporters; and (c) external pressures exerted mainly by major UK importers who used their power in the market to dictate prices and impose contractual terms that were unfavourable to Norwegian exporters. The Norwegian Ice Exporters' Association failed in its attempt to improve matters.

The demand for ice varied almost from year to year, with some years exhibiting unusually high demand, very much so when winters were mild and summers were hot. Such conditions also caused prices to rise and demand for Norwegian ice to shoot up. However, exporting ice was a difficult and risky business, and even in the very good year of 1898, the margins between success and financial ruin were often very fine.

T. & A. Wiborg exported ice across Europe and established a portfolio of loyal, long-term customers who played a key role in the company's survival in years when the market was poor. The company produced ice at large and complex industrial plants and, more sporadically when demand was great, harvested ice from lakes and ponds that they leased. As in previous decades, ice was exported by chartered vessels sourced from the international shipping market. During the peak year of 1898, T. & A. Wiborg was expanding, also through short-term leases of inland ponds (connected by railway). It was a record year for exports and for the company's profits. Even so, at the end of the year the company was dissolved, and its two owners went their separate ways.

