The positive developments in recent years had brought the company new self-confidence. In 1997 the board decided that Jøtul could make a contribution to shaping the development of the industry. The goal was to make the company into a "significant player" in North America (Canada was now also being defined as a potential market) and Europe, and thereby become one of the leading companies internationally. The path to such a position would take place in two stages. First, Jøtul would strengthen its position in the United States. Through buyouts and mergers with American companies Jøtul would be secured a broader product portfolio. Primarily, it would seek alliances with manufacturers of gas-based stoves and fireplaces. But steel plate manufacturers were also considered of interest, since it was here the true major market lay: Over 90 per cent of sales in the United States consisted of sheet steel products, only 10 per cent of cast-iron products. [392] Finally, alliances would be sought with one or more suppliers of cast-iron products in order to secure greater production capacity. In addition to the market advantages that an expansion of the product portfolio would provide, buyouts would also achieve positive synergetic effects on the product development front.

After Jøtul's position in the United States was consolidated, the company would turn to Europe. Through the expertise, broad product portfolio and financial strength the company would then possess, it would be well equipped to increase its impact on the European market. Jøtul would be able to offer a virtually complete spectrum of products, with gas- and wood-fired stoves and fireplaces in both cast iron and steel. This would also secure access to completely new distribution channels, at the same time that the company's position in existing distribution systems would become stronger.

Exploratory assessments were carried out during the spring and summer of 1997 with the intention of making purchases in the United States. Jøtul evaluated a total of 15 to 20 companies as potential candidates for buyouts or mergers. Of these, two companies stood out as especially interesting: Aladdin Steel Products Inc. and Travis Industries, both located in the state of Washington. Travis's market value was estimated to be twice that of Jøtul's, however, and the company was thus considered too large. Aladdin remained as a suitable candidate. The value of the company was estimated at half that of Jøtul's, and it operated within a sector that fitted in well with Jøtul's strategy. Under the brand name "Quadrafire", Aladdin produced high-end wood-, pellet- and gas-fired stoves and fireplaces. The company's extensive expertise with gas was of particular importance. [393]

However, no purchase was made. In the autumn of 1997 Aladdin was bought by a competing manufacturer, HON Industries. HON was one of the American manufacturers leading the restructuring process in the United States. At about the same time, HON bought two other American manufacturers. In addition, other companies also showed an interest in more active positioning. The Majestic Company bought Vermont Castings, and it was expected that the company would make other acquisitions, not only in the United States but also in Europe.

"The acquisitions wave is in full swing", the board stated in the late autumn of 1997. [394] The acquisitions helped strengthen the perception at Jøtul that more aggressive efforts had to be made in the restructuring process. "The industry will in future be dominated by a few large, global corporations with a complete portfolio of wood and gas products based on both cast iron and sheet steel", the analysis read. [395] The conclusion was that Jøtul would have to participate actively in such a process.

In line with this view, a new strategic plan was formulated – "Jøtul moving towards the year 2000". In the plan it was pointed out that: "Against the background of Jøtul's relatively strong global market position the administration believes that the best thing for the company and the shareholders is to choose an active growth strategy."[396] It was decided to undertake at least one acquisition in the United States during 1998. Jøtul was primarily searching for companies in the gas and steel sectors. Special emphasis was placed on securing Jøtul expertise within the gas industry, which was an expanding market in the United States. In addition, increased expertise in this area would help Jøtul win new markets in Europe. The market for gas was still small in Europe, but it was anticipated that this would change over time. In such a situation Jøtul would be well prepared to win significant market share.

The board supported the strategic plan, and subsequently several companies were evaluated for acquisition. However, during this process a quite significant problem was encountered: It proved to be difficult to find companies that would fit into Jøtul's strategy. There were few manufacturers for sale which had the expertise, product profile and size that Jøtul was looking for. In addition, prices had become dramatically inflated as a result of all the recent acquisitions. Illustrative of the situation was the fact that the only company found as a possible acquisition was a company in Seattle on the west coast that produced pellet stoves in sheet steel. However, the market niche for pellets was not something that Jøtul wanted to focus on.[397]

Because of these problems, Jøtul trimmed its ambitions for the United States. This did not mean that the major objective in the strategic plan was put aside. Instead, the focus would be on acquisitions in Europe. [398] Here the consolidation trend had not yet begun – even though "'everyone' knows it's coming", as the administration pointed out. This was one reason why the prices for companies had not skyrocketed as in the United States. In Europe, Jøtul also had a strong brand name, which was considered a major strength when approaching potential candidates for acquisition.

During 1998 and early 1999 negotiations were held with companies in various European countries regarding acquisition or merger. However, nothing came of these acquisition plans either. To some extent this was because even in Europe it proved difficult to find companies that completely met Jøtul's requirements. For example, there were few existing companies that had expertise in the gas sector. However, the situation also reflected the fact that Jøtul was gradually starting to re-evaluate the expansion strategy. Several circumstances emerged in 1999 that contributed to Jøtul's waning desire to focus on an aggressive acquisition strategy.

In the first place, less emphasis was put on the importance of participating in the sheet steel sector. It seemed that consumers were not particularly interested in what material a stove or fireplace was made from. Rather it was the design and appearance that decided the consumer's selection. In addition, Jøtul was gradually acquiring quite extensive expertise in the gas sector through the company's own efforts. This meant that not even in this field was it crucial to create industrial alliances. In other words, neither acquisition nor merger could be justified to the same extent as previously from an industry point of view.

In 1997 Olav Kjell Holtan became the new chairman of the board at Jøtul. Holtan was part of the Whitecliff investment firm, which in 1997 began to buy up stock in Jøtul and eventually became the majority shareholder. Holtan had a great deal of management experience with the industry.

In the second place, the matter had a special financial aspect. During 1998–99 large sums were invested in new production equipment at the foundry. This in itself required considerable outlay. Moreover, it eventually turned out that portions of this new production equipment did not function according to plan. As a result of flawed preliminary work, the implementation and adjustment process took a long time. Some of the equipment could not be used at all, and simply had to be replaced. By the autumn of 1999 it became clear that these investments would cause the company significant losses in future. Consequently the situation was far too uncertain for any major acquisitions to be made. [399]

In the third place, Jøtul experienced a negative development on the Norwegian market during this period. In the past few years the company had begun to lose market share. This was partly due to increased competition from several other manufacturers, mainly Dovre in Belgium. But the problems were also related to the fact that Jøtul was not sufficiently market-oriented. The sales apparatus in Norway did not function as it should. For instance, there was a tendency to focus too much on volume and too little on profitability. In addition, there was no clear and distinct product profile that could be communicated to dealers and consumers. [400] Finally, communication between Jøtul and the

Mechanisation of production has continued in recent years. The photo shows a production process in which drilling and threading machines are used.

dealers was not good enough to secure the company the desired position in the shops and with the sales representatives.

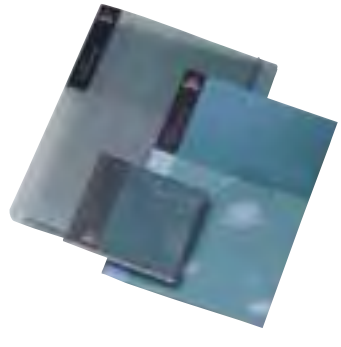
Internal buildup

The combination of these aspects caused Jøtul in 1999 to abandon all its acquisition plans. In March of that year a strategy memo confirmed that acquisitions would not be forthcoming in the next two years. Instead the focus would be directed to the internal situation, that is, towards opportunities for improvement which lay within the organisation itself. "Today Jøtul has a significant potential for improvement by making production more efficient, by developing more production-friendly products, by differentiating the products, and by implementing an effective sales and marketing concept," the memo stated. [401]

During 1999-2000 great emphasis was placed on strengthening the market apparatus in Norway. Initially what was most important was to develop a comprehensive market platform to which the entire market apparatus could relate. [402] First, it was essential to develop the marketing tools. New display and sales materials were designed. Later a standardised shop display concept was also developed, the so-called "shop in shop" concept, which would be used in conjunction with the product presentations at the dealers. The concept built on a complete display and advertising package that could be set up as a stand in the shops. Finally, training of the dealers' sales staff, "the Jøtul School", was resumed on a broader scale. [403]

Second, greater emphasis was placed on further developing Jøtul as a brand name. This formed the basis for the development of both the marketing tools and the dealer strategies. In the beginning, greater emphasis was placed on increasing the visibility of the company's product profile. Jøtul produced both classical and more modern models, but they had never before been categorised. During 1999–2000 this was changed; all models were sorted into distinct product lines. Next, Jøtul estab-

At the beginning of the 21st century a new marketing strategy was developed which included the so-called "Shop in Shop" concept. The basis for this concept was the objective of securing prominent placement and position for Jøtul products in the shops.



Jøtul Corporate Identity – the new company logo received the Good Design Award in 2001.

lished a new price profile. As a rule, the large dealers in building materials operated with fixed retail prices, but with considerable underlying discounts. The discount was often the most important sales tool. However, this was a pricing policy poorly suited to a strong brand profile. Jøtul thus lobbied to have the discount system abolished, in favour of lowering the retail prices somewhat. Such a strategy met strong resistance at first from most building materials chains, and Jøtul thus lost some market share in Norway in 2000.

In 1999 Erik Moe was hired as the new CEO, succeeding Vinko Janjak. Moe had many years of experience in Norwegian industry, including his tenure as CEO of the furniture manufacturer Håg.

In sum, it seemed as if the restructuring of the strategy had a positive effect on the company's market position in Norway. After a weak year in 2000, which was related partly to the previously mentioned problems in production, and partly to the new dealer strategy, turnover rose by 22 per cent – from 130 million kroner to 158 million kroner. The increase was explained by "a successful reorganisation of the market strategy in Norway". [404] But no doubt other special circumstances also played a role in this connection, primarily the higher prices for electricity. In 2002 sales improved even more, again partly due to the strong impact of record-high electricity prices throughout the winter.

The new market strategy has also served as the basis for the export markets in the past few years. Implementation has been made easier in the largest markets because in recent years Jøtul has begun to take direct control over distribution. In 1998 Jøtul established its own sales company in Germany. The same year, distribution in Great Britain was organised under a subsidiary, and thus the company had its own sales forces in the four largest markets. [405] In addition, emphasis was placed on incorporating the new strategy with independent importers.

The stove foundry is perhaps the most important reason why Jøtul in recent years has continued to increase its export share. It is true that the rate of growth in the major markets, the United States and France, has declined somewhat since 2000. In particular the market for gas has exhibited weaker growth compared with the final years of the 1990s. But since growth in this area was dramatic in the period 1997–99, it is more accurate to speak of a normalisation. In toto, however, exports continue to rise. In recent years Great Britain has become a promising market. In addition, the former Eastern Europe is gradually becoming a market with considerable potential, and as of 2002 importers have been established in the three Baltic countries, Russia, Poland and the Czech Republic. Eastern Europe is considered a market with significant future potential.

Ownership in flux

During the 1990s Jøtul went through a fluctuating ownership structure. At the same time different owners have had differing motives. This too has naturally affected the company throughout this period.

As we have seen in Chapter 6, Jøtul did not fit into the strategy of the new conglomerate that grew out of the merger of Norcem and Aker in 1987. For this reason the group eventually wanted to sell Jøtul. When things began to sour towards the end of the 1980s, however, there was a great deal of uncertainty about what the owner would do. It soon became clear that Jøtul was in such a bad state that it would be nearly impossible to get much for the company. In early 1989, therefore, Aker Norcem decided that a sale was not in the picture "for the time being". [406]

In the longer term, however, Aker clearly intended to get rid of Jøtul. As early as April 1990 a sale prospectus was drafted, and a number of interested parties subsequently appeared. Two companies emerged as especially interested, namely the UPO Foundry from Finland, which was owned by ASKO, and its arch-rival Dovre. [407] Negotiations broke down, however, primarily because neither of the companies was willing to pay a significant amount for Jøtul, and in December 1990 the Aker management decided to postpone the sale indefinitely. The group would itself turn Jøtul around before a sale again became imminent.

After this, a period of time passed before concrete plans for selling the company once again emerged. The ownership situation was discussed first in the long-term plan for 1993–1995, but only insofar as a clarification of the ownership situation should occur within the plan period.

It therefore came as a surprise to the management of Jøtul when Aker in 1994 decided to list Jøtul on the stock exchange, at the same time that the group signalled its desire to cut back its ownership share in the company. The announcement was met with some trepidation, first because the company felt secure under Aker's management, and second because there was a risk of acquiring owners who might not prove favourable. Aker, however, felt it was important to create space and time for

View of the assembly hall in 1993. Here painted products are assembled in one row and enamelled products in the other.

Jøtul to find acceptable owners. In addition, Aker would not immediately relinquish all its holdings. The owner share would be reduced by up to 57 per cent, while the remaining 43 per cent would be held for a minimum of two years. In addition, it was decided to prepare for a dispersed sale. In this way one could ensure that no hostile corporations had an opportunity to gain control over the company. The management of Jøtul was also deeply involved in the preparation for being listed on the stock exchange, and thus had an opportunity to influence the ownership structure. [408]

In the spring of 1995 the Jøtul shares were posted for sale, and when the subscription deadline ran out in June the capital was fully subscribed. The ownership structure was dispersed, dominated by Norwegian financial institutions. Next to Aker, the largest was Vital Forsikring with 10 per cent of the shares, and UNI Storebrand with a little over 7 per cent. Folketrygdfondet, SND, Postbanken, DNB and others were also involved. Two years later Aker decided to sell its remaining block of shares. This was also spread amongst many owners. By the end of 1997, Storebrand Livsforsikring was the largest owner, with 12.4 per cent. Aksjefondet K-vekst was the next largest, with 9.2 per cent. There were no other shareholders that controlled more than 6 per cent of the shares.

Not until 1998 were there signs of an incipient concentration on the ownership side. During that year the investor group Whitecliff, in which financier Christian Bjelland was a key figure, began to buy up shares in the company, and by the end of the year the group controlled a good 20 per cent of the shares. In the next couple of years the group continued to buy, and by the end of 2001 it owned approximately 42 per cent.

Whitecliff was purely an investor group, and had solely financial motives for its involvement in Jøtul. Even in the early stages it was said that the company had set a five-year limit as the basis of its involvement. This meant that during 2002 the group might decide to sell out again. Presumably this was the reason why a new interested party began buying up stock in Jøtul during 2002. At the beginning of 2002 the Swedish industrial corporation NIBE rapidly bought up an ownership share of almost 22 per cent. The background for the corporation's involvement was industrial. NIBE manufactured stoves and fireplaces in sheet steel and tile, and regarded Jøtul as an interesting addition to its corporate portfolio. Early on, NIBE expressed its intention to buy up 100 per cent. [409]

NIBE's involvement came unexpectedly and created a whole new situation in terms of ownership. As we have seen, Whitecliff was possibly on its way out of Jøtul, but the group now ran the risk that NIBE, through additional purchases, might reduce the possibility for the group to receive an acceptable price for its block. In order to prevent NIBE from gaining decisive control, Whitecliff therefore bought in for almost 60 per cent. At the same time Whitecliff made it clear that it was now willing to sell its whole block to NIBE, provided of course that the price was acceptable.

After that, of course, most of the negotiations were about price. In the summer of 2002 NIBE made an offer for Whitecliff's block that amounted to 77 kroner per share. This would yield a purchase price of approximately 136 million kroner for the entire block. The price was well above what Jøtul's stock had been trading for on the Oslo Stock Exchange just before NIBE began to buy up shares. Before new year of 2002 the stock had been traded for a little under 40 kroner. Naturally the price had risen

Industrial operation in rural surroundings. Jøtul at Kråkerøy in the 1990s.

significantly after new year of 2002, but that was primarily due to NIBE's and Whitecliff's own activity.

However, Whitecliff did not accept NIBE's offer, and with that the situation was deadlocked. In the summer of 2002 Whitecliff and NIBE together owned about 80 per cent of the stock, and neither party showed signs of giving up its demands. As a result the sales of stock ceased entirely. As of this date the situation is still unclear, and the two parties control about 60 and 20 per cent, respectively. Before the new year of 2003, however, Whitecliff chose to secure its full freedom of action with Jøtul by splitting the company into a holding company and a production company. Jøtul ASA became a holding company, and production was organised into its own corporation. This meant a freedom to administer the production company in the manner deemed most suitable.

The future is open

As of this writing (May 2003), there is much to indicate that Jøtul is facing a new change in ownership. And by the time this book is in print, it is quite possible that the change will have already taken place.

With our perspective in the spring of 2003: What type of owner can Jøtul expect to obtain? There is little to indicate that it will be an industrial investor, such as another stove and fireplace manufacturer. Thus far, at any rate, no such buyer has appeared, if we exclude NIBE. It will most probably be a financial owner. Moreover, it seems highly unlikely that the owner will be Norwegian. At least no Norwegian environment, either financial or industrial, has demonstrated any obvious interest in Jøtul.

What remains as the most probable scenario is that Jøtul will have a foreign financial owner. If so, what consequences will this have for the company? One question that naturally arises concerning such a solution is how a foreign owner would deal with the production location. High costs in Norway contribute to making Norwegian industrial workplaces steadily less secure. More and more industrial businesses are moving out of the country, to lower-cost countries in Europe or other parts of the world. The management and employees of Jøtul will also be forced to take a stand on this issue.

On the other hand, a new owner must assess the impact that would result if the expertise and network built up over many years, even generations, were to be lost. Moreover, Jøtul is to a great extent linked to what is specifically Norwegian. The company, its products and brand name are built on a uniquely Norwegian identity. Jøtul enjoys international respect because people know that the products are designed to meet the special requirements for heating in the harsh Norwegian climate. The question is whether such an identity can be maintained in the long term if the link to Norway and Norwegian culture is severed.

In 2003 Jøtul can look back at a history of 150 years. Over its long lifetime the company has been marked by both highs and lows, but the highs have undoubtedly been predominant. The company has at the same time exhibited a unique ability to resurrect itself in difficult periods. Much of its success has been due to the will and ability of the various owners to focus on the new and the long term, whether it was new products, new production technology or new market strategies. This is the reason why Jøtul is still viable and thriving as a stove foundry, while almost all other Norwegian manufacturers have long since fallen by the wayside. Through continuous adaptation to new market needs, and also by creating new markets, Jøtul has always managed to win continued support for its activities. This also explains why Jøtul is the only manufacturer of stoves and fireplaces in the world today that sells more than half its production outside its own domestic market.

With an eye to the long view of history, we can affirm that the need for stoves and fireplaces has existed ever since the birth of humanity. The function of fire has indeed changed dramatically down through the ages, but there is nothing to indicate that the need to enjoy the warmth, the visual display and the ambience of a real fire, will ever disappear. So there is every reason to expect that Jøtul will survive well into the future – yes, perhaps even for another 150 years.

Notes

Abbreviations in the notes:
KO: Kværner Ovnstøperi (Kværner Stove Foundry)
J: a/s Jøtul
OL: Ovnstøperienes Landsforening (The National Association of Stove Foundries)

1. Two books are central in this connection: *Om Husfliden i Norge* [On Household Economy in Norway], first published in 1867, and *Om Renlighedsstellet i Norge* [On the Habit of Cleanliness in Norway], first published in 1869.
2. Cowan, 1983, p. 54 ff.
3. Lie Christensen 1995, p. 175 ff. In this connection it is striking that the standard work on Norwegian housekeeping in the modern era does not mention the importance of the new cast-iron stoves. Cf. Avdem and Melby 1985.
4. Thuesen, 1963, p. 120.
5. Jenssen, 1978, Table 28.
6. Nygård-Nilsen, 1944, p. 217.
7. Lie Christensen 1995, p. 175 ff.
8. It is true that several iron works made use of cupolas in the decades before 1840, but they did not seem to have any great impact. In general, the iron works, with few exceptions, turned away from iron-casting during the 1800s. Wrought iron was the primary product of the iron works after 1800.
9. Lødrup 1951, p. 68. We can also see the same tendency in other mechanical workshops, such as the Factory by Nidelven, later Trondheim's Mechanical Workshop. See Thonstad 1994, p. 77 ff.
10. Mokyr, 1990, p. 92 ff.
11. Hyde, 1977, chapter 9.
12. Amtmannsberetninger [Commissioner's reports], 1851–55, Table no. 10.
13. Thuesen, 1963, p. 139 ff.
14. Solheim, 1935, p. 13.
15. *Polyteknisk tidsskrift* [Polytechnic Journal], no. 13, 1858.
16. Sejersted, 1993, p. 77 ff.
17. Ibid.
18. Hodne, 1981, p. 136.
19. Ebbell, 1927, p. 564; Hamran 1989, p. 78 ff.
20. Myran and Fasting, 1955, p. 454; Sandberg, 1945, p. 99; Ertresvaag, 1982, p. 102 ff.; Hammerborg et al., Bergen, 2000, p. 12.
21. Lødrup, 1951, p. 68.
22. Amtmannsberetninger [Commissioner's reports], 1836–40, p. 80.
23. Amtmannsberetninger [Commissioner's reports], 1841–45, p. 36.
24. *Polyteknisk tidsskrift* [Polytechnic Journal], no. 2, 1854.
25. Cf. for example articles in Nos. 16, 17 and 18 for 1855, and Nos. 11, 13, 14 and 15 for 1858.
26. *Polyteknisk tidsskrift* [Polytechnic Journal], no. 16, 1855.
27. Amtmannsberetninger [Commissioner's reports], 1851–55, p. 4.
28. Thue 1977, Table 18a. This fact is also emphasised by Jan Eivind Myhre, cf. Myhre 1990, p. 275.
29. Hoff, 1920, p. 110.
30. Ringaard, 1955, p. 86.
31. Tønnessen, 1957, pp. 275 ff. and 317 ff.
32. Wicken, 1982, p 43.
33. Sandvik, 1994, p. 77 ff.
34. Myran and Fasting, 1955.
35. Hamran, 2001, p. 143.
36. Krogsrud, 1981, p. 169.
37. Ringaard, 1955, p. 88.
38. Berthelsen, 1996, p. 39 ff.
39. Bruland, 1989, pp. 33–74.
40. Landes, 1969, p. 92. The unpredictability of the melting process caused it to be the subject of much mysticism and superstition. Many elaborate rituals were associated with iron melting; among other things, it was common to have apples, beer, and all sorts of other additives in the mixture. These traditions were maintained in many foundries until long into the 20th century.
41. Amtmannsberetninger [Commissioner's reports], 1841–45.
42. Lødrup, 1951, p. 45.
43. Sandvik, 1994.
44. Myran and Fasting, 1955, p. 24.
45. Hammerborg et al., 2000, p. 12.
46. *Morgenbladet* [Morning News], 8 April 1844.
47. Myhre, 1978, p. 192. At Myren's workshop in particular, 13 employees were registered with previous iron-works experience. Myhre presumes that the actual figure was higher.
48. Krogsrud, 1981, p. 18.
49. Hamran, 2001, pp. 121–153.
50. This information was provided by manager Gunnar Molden at Nes Jernverksmuseum [Nes Iron Works Museum] in a telephone conversation on 24 January 2002.
51. Thorson, 1972, p. 205. In the late 1850s a mechanical workshop was also constructed in conjunction with the foundry, and Drammen jernstøberi og mekaniske verksted [Drammen Iron Foundry and Mechanical Workshop], as the company was called from then on, gradually became one of Norway's largest workshops.

52. Ebbell, 1927, p. 564.
53. Hamran, 1989, p. 81.
54. Thue, 1977, p. 218.
55. Wasberg and Strømme Svendsen, 1969, p. 80.
56. Wicken, 1982, p. 7 ff.
57. Krogsrud, 1981, p. 53.
58. Bang, 1924, p. 3.
59. Ibid.
60. This was especially true during and just after the First World War, when the sharp rise in production costs made significant price increases necessary.
61. Myhre, 1990, p. 242 ff.
62. Anker Olsen, 1953. Quotation, p. 13.
63. This corresponded to the wages of a master craftsman of his day. See Myhre 1990, p. 93.
64. *Morgenbladet* [The Morning News], 1845.
65. *Morgenbladet* [The Morning News], 1850.
66. Schieldrop, 1961, p. 59 ff.
67. Later the river was redirected and increased to 100 horsepower.
68. Fasting, 1952, p. 13.
69. Thue, 1977, p. 232.
70. Myhre, 1990, p. 255.
71. Anker Olsen, 1953, p. 47.
72. *Morgenbladet* [The Morning News], 1867.
73. Anker Olsen, 1953, p. 58 ff.
74. Myhre, 1990, p. 415.
75. Onsum's information may be found in the preliminary notes for the commissioners' reports for 1879.
76. Øhren, 1977, p. 56.
77. Hodne and Grytten, 2000, p. 223 ff.
78. Myhre, 1990, p. 414.
79. Einarsen, 1904, p. 93.
80. Wasberg and Strømme Svendsen, 1969, p. 79.
81. *Norsk biografisk leksikon* [Norwegian Biographical Lexicon], volume 10, p. 500.
82. Thue, 1977, Table 19a.
83. Anker Olsen, 1953, p. 138. In 1873 Norway switched its currency from spesidaler to kroner. Here, however, we have converted all figures to spesidaler for the sake of consistency.
84. The factory figures are from the preliminary notes to the commissioners' 5-year reports, 1866–70, 1871–75, 1876–80 and 1881–85. National Archives.
85. Anker Olsen, 1953. Quotation, p. 129.
86. Account of Onsum's financial situation printed in *Morgenbladet* in 1887.
87. Lange, 1989, p. 18 ff.
88. Hodne 1981, p. 89 ff.
89. This is revealed in conjunction with the stock offering for the "new" Kværner Works in 1892.
90. Anker Olsen, 1953 mentions nothing about expansion or modernisation in the 1880s.
91. Amundsen, 1963, p. 3.
92. *Morgenbladet* [The Morning News], 24 April 1892.
93. Anker Olsen 1953, p. 216.
94. Annual reports for Kværner Works. Kværner Works archives, Technical Museum.
95. Among other things, the annual reports of OL give the impression of steady, good market conditions. See OL, protocol no. 1.
96. A photograph of the stove foundry's crew in 1914 shows about 85 people, and this must be regarded as a minimum figure. Presumably the figure was somewhat higher. Knut Kjeldstadli reports the total number of employees at Kværner Works in 1916 as about 400. In the summer of 1917, the first year after the sale of the stove foundry, the number of employees drops to 250. A large part of the reduction must presumably be related to the sale of the stove foundry. See Kjeldstadli, 1989, Table 1.1.
97. *Norsk kundgjørelsestidende* [Norwegian Legal Notice News], no. 460, 1916.
98. Kjeldstadli, 1989, p. 199.
99. Ibid., p. 203 ff.
100. Anker Olsen, 1953, p. 292.
101. *Jernindustri* [Iron Industry], no. 12, 1927.
102. Indeed the book never came out in the form imagined. The reason was poor finances in Ovnstøperienes Landsforening, which was to fund the publication. The manuscript, written by the Chief Inspector of the Inspectorate of Ancient Monument and Historic Buildings, Harry Fett, was indeed completed according to plan and eventually formed an important basis for Arne Nygård-Nilsen's doctoral dissertation on the same topic which came out in 1944.
103. Stock offering, *Norsk Kundgjørelsestidende*, no. 460, 1916.
104. Stoltz, 1950, Table 24.
105. The statistics are taken from OL, circular no. 13-1918.
106. OL, circular no. 7-1916.
107. This information is given in the stock offering. *Norsk Kundgjørelsestidende*, no. 460, 1916.
108. Anker to *Verdens Gang* [The Way of the World], 23 April 1920.
109. OL, circular no. 3-1917. Protocol no. 2. OL, circular no. 9-1917. Protocol no. 2.
110. Furre, 1990, p. 57 ff.
111. Knutsen and Ecklund, 2000, p. 54 ff.
112. *Norsk kunngjørelsestidende*, 6 November 1917.
113. Kjeldstadli, 1989.
114. Hauge, 1965, p. 48.
115. Fasting, 1962, p. 31.
116. Hauge, 1965, p. 50.
117. KO, minutes of board meeting, 7 March 1918. Actually an enquiry was already made in November 1917, thus before Norwegian Machine Industry was formally constituted.
118. KO, minutes of board meeting, 4 April 1918.
119. Fasting, 1962, p. 48.
120. KO, minutes of board meeting, 28 May 1918.
121. Letter to the department dated 22 May 1919. Quoted in Fasting 1962.
122. KO, minutes of board meeting, 11 April 1919.
123. KO, minutes of board meeting, 2 August 1919.
124. KO, minutes of board meeting, 17 September 1919.
125. KO, minutes of board meeting, 13 October 1919.
126. KO, Minutes of board meeting, 28 October 1920. Here the contents of the agreement with Norwegian Machine Industry are reported.
127. *Norsk Kunngjørelsestidende*, 23 April 1920.
128. Schuman and Anker must have known each other fairly well. Among other things, they had served together on the board of OL during the period 1917–19.
129. *Norsk Kunngjørelsestidende*, 23 April 1920.
130. *Norsk Kunngjørelsestidende*, 23 April 1920.
1312. Stock offering. *Norsk kunngjørelsestidende*, 23 April 1920. Emphasised in the source.
132. *Verdens Gang*, 23 April 1920.
133. Hodne and Grytten, 1992, p 96ff.
134. Furre, 1990, p. 78 ff.
135. KO, minutes of general assembly meeting, 31 May 1922.
136. In a meeting of the OL in mid-September 1920, several people reported that they had noticed a considerable decline in orders in relation to the same period the preceding year. See OL, minutes no. 1, p. 189.
137. OL, minutes no. 1, p. 222.
138. KO, minutes of board meetings, 7 April, 16 June and 1 December 1921 and 3 March 1922.
139. KO, minutes of general assembly, extraordinary general assembly, 8 November 1922. KO was obligated to liquidate its shares immediately at parity if Norwegian Machine Industry so demanded.
140. Turnover and financial results can be found in the minutes of the board.
141. J, minutes of board meeting, no. 1, p. 45.

142. J, minutes of board meeting, no. 1, p. 39.
143. J, minutes of board meeting, no. 1, p. 39.
144. J, minutes of board meeting, no. 1, p. 25.
145. See for example OL, minutes no. 1, p. 142.
146. SSB, Statistiske meddelelser [Statistical reports], volumes 1920–1927. Coal, coke, and wood were at levels between 30 and 50 per cent higher than the average cost-of-living index for almost the entire period from 1921 to 1925. Not until 1926 did prices for these materials come down to the average level for the index.
147. The patent register for the period 1915 to 1940 has been systematically examined.
148. *Jernvarehandleren* [The Hardware Dealer], no. 10, 1923.
149. *Teknisk Ukeblad* [Technical Weekly], 1921, no. 8.
150. Excerpts from Watzinger's report are printed in *Jernvarehandleren*, no. 10, 1923, and in *Jernindustri* [Iron Industry], no. 10, 1923.
151. *Aftenposten* [The Evening Post], 16 November 1927.
152. J,, minutes of board meeting, no. 1, p. 131.
153. *Byggekunst* [Building Arts], 1922.
154. Reproduced in *Tidens Tegn* [Sign of the Times], 4 April 1923.
155. Brochmann, 1987, p. 50 ff.
156. KO, minutes of board meeting, 19 August 1924.
157. KO, minutes of board meeting, 12 March 1925.
158. Anker in report to the board dated 17 August 1925.
159. Kjeldstadli, 1994, p. 173.
160. http://www.ssb.no/emner/historisk_statistikk/tabeller/22-24-28.txt
161. OL, minutes no. 2, p. 3. We do not have statistics that show the exact import figures. But after 1925 many stove foundries reported to the national association that they had lost market share in important markets to foreign foundries, especially Danish ones. We must therefore assume that imports increased quite dramatically during this period.
162. KO, minutes of board meeting, 30 March 1926.
163. KO, minutes of board meeting, 9 July 1926.
164. Annual reports for 1928 and 1929.
165. Riksarkivet, Bankinspeksjonens arkiv [National Archive, Archive of the Bank Inspectorate], Klaveness Bank, box 231.
166. Riksarkivet, Bankinspeksjonens arkiv, Klaveness Bank, box 231. Report of the Bank Inspectorate of May 1927.
167. Riksarkivet, Finansdepartementets arkiv, Finanskontoret [National Archive, Archive of the Finance Department, Finance Office], box 344.
168. Knutsen and Ecklund, 2000, p. 110 ff.
169. Riksarkivet, Finansdepartementets arkiv, Finanskontoret, box 344.
170. KO. Minutes of general assembly, 4 June 1928. Gives an account of the course of the negotiations.
171. The consortium's agreement is presented by Gahr in a board meeting, 20 November 1929. See KO, minutes of board meeting 1, p. 124.
172. See for example *Jernindustri*, no. 6, 1927.
173. *Jernindustri*, no. 12, 1930.
174. *Jernindustri*, no. 12, 1932.
175. See for example *Jernindustri*, no. 4, 1930.
176. On the transport conditions in the foundries, see for example *Norsk verksteds- og støperitidende* [Norwegian Workshop and Foundry Journal] no. 8, 1923, and *Jernindustri* no. 9, 1930.
177. The Germans called this "Fliessarbeit" (flow production), while Norwegian technical people called it "strømarbeid" (stream work). Both terms refer to the continuity and regularity of the system.
178. *Jernindustri*, no. 12, 1932.
179. *Jernindustri*, no. 12, 1926.
180. KO, minutes of board meeting, 19 February 1929.
181. KO, minutes of board meeting, 5 November 1929.
182. *Støperitidende* [Foundry Journal], no. 5, 1937.
183. KO, minutes of board meeting, 3 February 1932.
184. Andersen, 1958, p. 100.
185. *Støperitidende*, no. 5, 1937.
186. Andersen, 1958, p. 100.
187. Stenstavold 1954. Emphasised in the source. As we can see, the statement was made at a later time than we are discussing, but it is put forward as a general rule.
188. KO, minutes of board meeting, 8 June 1932, p. 160.
189. Schieldrop, 1961, p. 219.
190. See for example *Aftenposten*, 19 February 1931.
191. KO, minutes of board meeting, 27 September 1932.
192. KO, minutes of board meeting, 28 February 1933.
193. Industridepartementet 1950, p. 14.
194. Ibid., p. 58.
195. Lødrup, 1949, p. 119.
196. J, minutes of board meeting, 30 January, 1925.
197. Kråkerøy Verk, 1966, p 6.
198. *Jernindustri*, no. 12, 1932. As it stated in the magazine: "The situation for cast sanitary goods is considerably worse than it is for stove goods. The majority is imported quite cheaply, and only a very rational operation could succeed in making a profitable industry of this type here in Norway."
199. Certainly, Hamar Iron Foundry and Mechanical Workshop did produce some stoves during the Second World War, but this was only for a very limited time.
200. Skjold, 2001, p. 110.
201. KO, board meeting, 23 January 1941.
202. Board meeting, 29 July 1940.
203. Board meeting, 15 December 1942. Of models no. 116 and 118, 14,318 and 10,723 units were sold, respectively, for a total of 25,041.
204. OL, annual reports, 1940-1945.
205. In 1965 there were only five stove foundries still in operation: Ulefos Iron Works, Drammen Iron Foundry and Mechanical Workshop, Trolla Works, Wingaard Stove Foundry and Jøtul. Of these, only Drammen and Trolla besides Jøtul still had a production of any size. Ulefos had largely gone over to other products. The same was true of Wingaard Stove Foundry, which terminated stove production in 1967.
206. Furre, 1990, p. 212 ff.
207. Telegram from the Finnmark office to Forsynings- og gjenreisningsdepartementet [the Provisions and Reconstruction Department], dated 18 July 1945. Reproduced in appendix to OL circular no. 8-1945.
208. OL circular no. 13-1945.
209. OL circular no. 14-1946.
210. OL, annual meeting, 4 December 1946.
211. OL, minutes no. 15, p. 106. Meeting 26 March 1947.
212. Letter dated 19 July 1950. Reproduced in OL, minutes no. 15, p. 197. We do not know who was the person mentioned as the exception.
213. *Aftenposten* [The Evening Post], 7 February 1955.
214. Board meeting, 4 December 1952.
215. Board meeting, 7 December 1954.
216. *Støperitidende* [Foundry Times], no. 2, 1946.
217. Brusgaard, 1940.
218. *Støperitidende*, no. 2, 1946.
219. *Støperitidende*, no. 3, 1952.
220. Helge Norseth in interview with the author on 10 March 2003.
221. *Arbeiderbladet* [The Workers' Newspaper], 8 February 1947.
222. *Arbeiderbladet*, 7 December 1946.
223. See, for example, board meeting, 14 November 1947.
224. *Arbeiderbladet*, 1 October 1956.
225. "Notater vedr. Jøtul før og nu" [Notes regarding Jøtul then and now]. Undated.
226. OL, minutes no. 15, part II, p. 103.
227. OL, minutes no. 15, part II, p. 128.

228. Letter from Norges Kooperative Landsforbund [Norwegian Co-operative National Association], dated 2 May 1954. NKL was of the opinion in attachments that the grading of the discounts according to geographical location was unfortunate. Most of NKL's members lived in country districts, which as a rule were the areas that received the lowest discount rate. The association thought that geographical location should no longer be the decisive factor in the determination of discounts, but rather the sales volume. There were examples of the fact that co-operatives located in areas with the lowest discount (9 per cent) could have significantly higher turnover than dealers with the highest discount (16 per cent).
229. Letter dated 11 August 1955.
230. OL, minutes no. 15, part II, p. 84.
231. Ibid., p. 135.
232. Ibid., p. 159.
233. Ibid., p. 208.
234. Proposals of Prisdirektoratet [Price Directorate], reported in letter dated 18 July 1956.
235. Letter to Price Directorate dated 22 August 1956.
236. OL, board meeting, 11 December 1958.
237. OL, annual report 1959, case 4.
238. *Støperitidende*, no. 5 and 10, 1952;
239. *Byggmesteren* [Master Builder], no. 10, 1958.
240. Bartlett, 1993, appendix A, Table A-7.
241. OL, minutes no. 15, p. 102.
242. Johannessen, 1992, p. 186 ff.
243. J, minutes of board meeting, 17 December 1947.
244. Skjold 2001, chapters 6 and 7.
245. Johannessen, 1992, p. 186 ff.
246. Skjold, 2001, chapter 5.
247. See, for example, articles in *Aftenposten* in January 1954 and in *Husmorbladet* [Housewife Magazine], 2 December 1954.
248. Hagen, 1958. Quotation on p. 35.
249. Ibid.
250. Note dated 23 September 1949, draughted by Gahr. See minutes of board meeting, 11 October 1949.
251. Cowan, 1983, p. 94 ff; Williamson, 1963, p. 39 ff.
252. J, minutes of board meeting, 13 February 1957.
253. *Arbeiderbladet*, 17 August 1956.
254. Board meeting, 12 October 1968.
255. Gunnar Narvesen to *AB-Link*, January 1965.
256. Helge Norseth in interview with the author, 10 March 2003.
257. Otto B. Halvorsen in interview with the author, 2 January 2003.
258. See, for example, the article in *Huset Vårt* [Our House], no. 2, 1963.
259. For example, it was cited as a good example of industrial design in several French trade journals.
260. *AB-Link*, January 1965.
261. Board meeting, 24 August 1950.
262. Helge Norseth in interview with the author, 20 March 2003.
263. Ibid.
264. "Notater vedr. Jøtul før og nu". Undated.
265. Around 1960 the trade journal *AB-Link* began to focus on dealer relations in business. Jøtul was cited as a model company in this area. See *AB-Link*, January 1961.
266. *AB-Link*, January 1961.
267. Otto B. Halvorsen in interview with the author, 2 January 2003.
268. Ibid.
269. J, minutes of board meeting, 16 June 1958.
270. Bjerkholt et al., Oslo, 1990.
271. Bartlett, 1993, appendix A.
272. The oil crisis had its biggest impact on demand for large oil-fired systems. This market declined fairly rapidly after 1973. Jøtul-owned NOBAS, a company whose products included central heating boilers, was forced to shut down this production branch in the mid-1970s due to the total collapse of the market.
273. Annual report for 1975.
274. Bartlett, 1993, appendix A, Table A-13.
275. Annual Report for 1974.
276. Annual Report for 1979.
277. Norwegian-American Commerce, October 1978.
278. Annual Report for 1980.
279. Minutes of board meeting, 14 November 1980.
280. Annual Report for 1978.
281. Board meeting, 15 February 1979.
282. Annual Report for 1978.
283. Annual Report for 1979.
284. Annual Report for 1982.
285. Board meeting, 15 February 1979.
286. Board meeting, 10 May 1979.
287. Otto B. Halvorsen in an interview with the author, 2 January 2003.
288. Board meeting, 15 August 1980.
289. *Verdens Gang*, 18 February 1976.
290. *Dagbladet*, 19 February 1976.
291. *Arbeiderbladet*, 22 March 1976.
292. Borgersrud, 1983, p. 14.
293. Røsjø, 1984, p. 16.
294. Board meeting, 3 June 1977. This was the official reason cited for the sale; see, for example, *Arbeiderbladet*, 24 June 1977.
295. Kjell Syversen in interview with the author, 23 December 2003.
296. Board meeting, 26 November 1976.
297. Heiberg and Odegard, 1983, p. 5.
298. *Aftenposten*, June 24, 1977.
299. Board meeting, 3 June 1977.
300. Jøtul would account for roughly 10 per cent of Norcem's total turnover.
301. Minutes of board meeting, 12 February 1972.
302. NOU 1974: 2 – Norwegian Foundry Industry.
303. NOU 1974: 2, p. 40.
304. Board meeting, 24 January 1975.
305. Board meeting, 24 January 1975.
306. Board meeting, 16 December 1975.
307. "Støperiprosjektet" ["The Foundry Project"], report no. 2.
308. Report, p. 5.
309. "Støperiprosjektet", final report dated 8 March 1977.
310. "Støperiprosjektet", final report dated 8 March 1977.
311. Board meeting, 15 November 1977. In addition to Heiberg, the board consisted of the head of Norcem's building products division, Kjell O. Kran, Olaf Brubakken, Ragnar Skaudal, Egil Olsen and Ove Engevik. The final two were employee representatives.
312. *Industrikonsult* [Industry Consulting] concluded in a report that the Lørenskog site was more suitable than the Leirdal site.
313. Board meeting, 15 November 1978.
314. Board meeting, 3 April 1979.
315. Annual Report for 1978.
316. Board meeting, 13 August 1979.
317. Board meeting, 15 October 1979.
318. Minutes, steering committee for new foundry, meeting on 22 November 1979.
319. Board meeting, 26 February 1980.
320. "Støperiprosjekt Enebakkveien – Kråkerøy Verk" ["The Foundry Project Enebakkveien – Kråkerøy Works"]. Report dated 23 April 1980.
321. The permit requirement was tied to the size of the investment. *Etableringsloven* [the Norwegian Establishment Act] required that business investments in excess of 50 million kroner were subject to approval by the King in Council.
322. Royal resolution of 15 August 1980.
323. Røsjø, 1984, p. 164 ff.
324. *Aftenposten*, 16 August 1980.
325. Annual Report for 1981.
326. Holt, 1988, p. 141.
327. Board meeting, 14 October 1981.
328. Board meeting, 14 October 1981.
329. Board meeting, 20 November 1981.
330. Chief Financial Officer Kjell Syversen, Jan Røed and Kjell Næsje were the ones who took the initiative and did the calculations. Kjell Syversen in an interview with the author, 23 December 2003. [sic]
331. "Forslag til ny produksjonsstruktur" ["Proposal for new production structure"]. Reported dated 27 May 1982.
332. Board meeting, 21 June 1981.

333. Røsjø, 1984, p. 164 ff.
334. *Aftenposten*, 19 June 1982.
335. Espeli, 1992, Chapter 9; Hanisch and Lange, 1986, p. 146 ff.
336. *Aftenposten*, 22 June 1982.
337. *Arbeiderbladet*, 22 June 1982.
338. Røsjø, 1984.
339. Ibid., p. 203.
340. Kjell Syversen in interview with the author, 23 December 2002.
341. Chief Technology Officer Kjell Næsje, Marketing Director Jan Røed and Chief Financial Officer Kjell Syversen were the ones who took the initiative to work out the financial consequences of shutting down Enebakkveien and transferring the entire production to Kråkerøy.
342. Kjell Syversen in interview with the author, 23 December 2002.
343. J, board meeting, 18 April 1983.
344. Minutes of board meeting, 23 October 1984.
345. This was also pointed out in outside reports, cf. Hoel and Kristiansen Johre, 1981, p. 88.
346. Kjell Syversen in interview with the author, 23 December 2002.
347. "Strategiplan 1985-88" ["Strategy Plan 1985–88"].
348. Heiberg and Odegard, 1983, p. 10. Heiberg also states here that: "It is surprising how often a project's success or failure can be explained completely by one's ability to assess the evolution of the market and one's own place and opportunities there. Our experience from cement, leisure craft and cast-iron stove exporting quite clearly confirms this conclusion."
349. Hoel and Kristiansen Johre, 1981, p. 89.
350. Annual Report for 1985, p. 4.
351. This was effected in that Jøtul assumed a receivable which Ila and Lilleby Smelteries had *vis-à-vis* Trolla in the amount of 15.7 million kroner, in other words, for 12 million kroner.
352. J, board meeting, 26 October 1984.
353. J, board meeting, 10 December 1985.
354. J, board meeting, 10 December 1985.
355. Planlagte akkvisisjoner [Planned acquisitions]. Note dated 26 August 1986.
356. J, board meeting, 3 November 1986. Cf. "Strategic plan 1987-1991".
357. Long-term budget 1986–1988.
358. J, board meeting, 7 March 1988.
359. "Jøtulkomiteen" ["The Jøtul Committee"]. Report dated 28 November 1988.
360. J, board meeting, 8 December 1986.
361. J, board meeting, 10 February 1986. The lack of a concentrated and goal-oriented effort on the part of Jøtul was also a problem before the company assumed control over the importer function. Cf. Petersen, 1984, p. 40.
362. J, board meeting, 30 November 1987.
363. Otto B. Halvorsen in interview with the author 2 January 2003.
364. Erik Holst in interview with the author 21 December 2002.
365. Sandby and Svendsen, 1989. The report concluded as follows: "Jøtul must develop their international character. This demands more co-ordination and control with the different affiliates, to succeed in their strategy. Our findings in the French market may therefore be regarded as symptoms of conditions also detectable in other markets and lead to a thorough process of self evaluation".
366. Gerhard Heiberg in interview with the author 21 December 2002.
367. *Aftenposten*, 24 June 1977.
368. J, board meeting, 21 May 1991.
369. Zero-base budget. Adopted in board meeting, 17 December 1990.
370. Zero-base budget. Adopted in board meeting, 17 December 1990.
371. Budget 1991.
372. J, board meeting, 20 February 1992.
373. Long-term plan 1993–1995.
374. J, board meeting, 15 October 1992.
375. "Forbedringsprosjekt, marked Norge".
376. Strategy document 1992–1994.
377. J, board meeting, 18 November 1991.
378. J, board meeting, 21 April 1993.
379. J, board meeting, 1 March 1991.
380. In 1993, 13 of the total of approximately 130 models accounted for 90 per cent of the operating earnings, and it was decided to undertake a gradual product clean-up. Instead a basic selection would be worked out for the major markets to which the marketing could be directed.
381. J, board meeting, 1 March 1991.
382. Munthe-Kaas and Rudstøm, 1993, p. 120.
383. J, board meeting, 21 December 1994.
384. Sandby and Svendsen, 1989. Jøtul's strength, as it was evaluated in France, was primarily in quality and reliability; Jøtul's products also had the absolute highest heat efficiency. When speaking of Jøtul, people talked of the company's "heating image" which was presumably the company's strongest card in the French market.
385. Strategy plan 1996–98.
386. J, board meeting, 20 February 1992.
387. Strategy plan.
388. Vinko Janjak in interview with the author, 24 January 2003.
389. Erik Moe in interview with the author, 18 March 2003.
390. J, board meeting, 30 April 1997.
391. J, board meeting, 30 April 1997.
392. J, board meeting, 10 October 1997.
393. J, board meeting, 5 August 1997.
394. J, board meeting, 22 October 1997.
395. J, board meeting, 22 October 1997.
396. Strategy plan, "Jøtul Moving Towards the Year 2000."
397. J, board meeting, 16 January 1998.
398. J, board meeting, 16 January 1998.
399. Olav Kjell Holtan in interview with the author, 22 May 2003.
400. J, board meeting, 17 June 1999.
401. J, board meeting, 1–2 March 1999. Buyouts were of course discussed after this date as well. The buyout plans were finally shelved in the autumn of the same year, when the problems in production surfaced.
402. Erik Moe in interview with the author, 18 March 2003.
403. J, board meeting, 17 June 1999.
404. Annual report 2001.
405. In Great Britain, Jøtul eventually had big problems in co-operating with the existing importer, Stovax, partly because the company also distributed competing brands.
406. J, minutes of board meeting, 26 January 1989.
407. J, board meeting, 22 October 1990.
408. Vinko Janjak in interview with the author, 24 January 2003.
409. *Dagens Næringsliv* [Today's Business], 8 January 2002.

Sources

The following individuals were kind enough to give interviews: Tore Bech, Otto B. Halvorsen, Gerhard Heiberg, Erik Holst, Olav Kjell Holtan, Vinko Janjak, Ole Jan Johansen, Erik Moe, Helge Norseth, Unni Gahr Støre, Ulf Støre and Kjell Syversen.

Jøtul's archive was examined systematically, as was the archive of Ovnstøperienes Landsforening [National Association of Stove Foundries], which is stored at Teknologibedriftenes Landsforening [National Association of Technology Companies]. In addition, the archive of Støperienes Landsforening [National Association of Foundries], which is stored at the same place, was used sporadically.

Important newspaper sources were Norsk Jernindustri [Norwegian Iron Industry], and Støperitidende [Foundry Times], later Norsk Verksteds- og Støperitidende [Norwegian Workshop and Foundry Times], in particular. They were examined systematically. Teknisk Ukeblad [Technical Weekly] was also used to some extent, but not systematically.

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