The Arctic ship *Polarbjørn*

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ABSTRACT. *Polarbjørn* ('Polar Bear') was launched at Narvik in 1919, having been constructed for work in the Arctic. In 1923 she was the expedition ship for Adrian Jacobsen's expedition to Franz Josef Land, Svalbard, and Novaya Zemlya. The following year she was the expedition ship for George Binney's Oxford University expedition to Svalbard. She sailed twice to the Arctic with aeroplanes onboard to chart the region, in 1924 to Svalbard and in 1932 to northeast Greenland. Between 1931 and 1948 she was expedition ship for 10 scientific expeditions to Svalbard, Jan Mayen, and northeast Greenland organized by the Norges Svalbard-og Ishavsundersøkelser, the forerunner to the Norsk Polarinstitutt. In 1940 *Polarbjørn* was engaged by the Norwegian government in exile in London to deliver equipment and supplies to wintering trappers and wireless operators and to bring secret codes to the telegraph stations in northeast Greenland. From autumn 1941 to the end of the war she was chartered by US government forces and shuttled between Boston and Halifax to Greenland, Baffin Island, and Labrador. After the war she returned to sealing under Norwegian ownership, and in 1949 caught fire and sank off Belle Isle, Newfoundland.

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Background

The history of the Arctic ship *Polarbjørn* ('Polar Bear') started in Austria. In 1911 the Austrian Count Kostersitz chartered *Laura*, Captain Jens Øien, for a hunting expedition to northeast Greenland. One day, when the hunting party was ashore, Kostersitz and his wife became lost in a fog and did not return to the ship. Øien organised and led the search for the couple and found them in an unfamiliar valley, chilled and in poor condition. Øien had them brought back to the ship but *Laura* had severe difficulties in getting out of the ice belt. She was beset in the ice for a month and was squeezed several times. Count Kostersitz showed his gratitude by sending Øien a cheque for NOK 50,000 (present-day value £236,000). For this sum, Øien contracted for the building of a large, strong, and well-equipped polar ship – *Polarbjørn* – for sealing, trading, Arctic expeditions, and tourist cruises.

Polarbjørn was built from wood at Nils Jakobsen Shipyard, Narvik, and was launched in May 1919. During World War I, in which Norway remained neutral, there was optimism in industry and commerce, and good times for the sealing trade. Nils Jakobsen was one of those who had engaged in various lines of business in Narvik, including shipbuilding and timber.

Polarbjørn had a traditional cutter hull with a vertical bow and a round, overhanging stern, which was common for sealers built during the war. She was 326 gross tons and 123.6 × 26.9 × 13.2 feet. She was equipped with a blubber container of 100,000 litres. In contrast to other sealers built during that period, her superstructure was specially designed. She had outside cabins on both sides of the quarterdeck. The cabin facilities were especially designed for tourist voyages (Fig. 1) (Henrik Landmark, personal communication). Most vessels at the time were equipped with steam engines, but *Polarbjørn* had a 160-hp diesel engine from AB Atlas Diesel in Stockholm. This made her one of the first Norwegian ships equipped with a fully diesel propulsion engine. The first Norwegian vessel propelled by a fully diesel engine was *Fram*, which was equipped so just before the departure of Roald Amundsen in 1910 (Qvarnstrøm 1973; Steiro 1991).

A 10-year period

After *Polarbjørn* was launched in 1919, Nils Jakobsen, her builder, became her managing owner. According to *Lloyd's register of shipping* for 1919–20, *Polarbjørn* was owned by A/S Polarbjørnen where Jakobsen, Jens Øien, and others were shareholders. This may indicate that Øien was not able to pay the total building coasts. The boom in the Norwegian economy during World War I proved temporary and was followed by a depression. The profitable years from 1915 to 1921, when the Norwegian government supplied the nation with fat products from seals and whales, was followed by a drastic drop in price of blubber and fur. Simultaneously, it became more expensive to equip sealing expeditions (Jacobsen 1954). Both Jakobsen and Øien were caught in the depression (Dalberg 1990), and the managing ownership of the ship was transferred to the shipowner Jan Knoph, of Tromsø, who managed a fleet of vessels transporting coal from

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Fig. 1. *Polarbjørn* in the early 1920s. Photo courtesy Narvik kommunale fotosamling, Narvik.

Svalbard to Norway. In 1923, *Polarbjørn* was taken over by a bank, A/S Sandnessjøens Privatbank, but Knoph continued as manager (*Norges Handelsflåte* 1923). Later, A/S Sandnessjøens Privatbank was declared bankrupt (Leif B. Lillegård, personal communication, 1993). This was not uncommon; in fact, nearly every bank in northern Norway closed during the depression, unable to secure repayment from their borrowers.

Polarbjørn passed to Einar Amundsen and Johan P.K. Olsen of Ålesund. The latter was the master of the polar ship *Veslekari* for many years. They sold her to the circus manager Karl Norbeck in Oslo, who, in turn, sold her to Johan Thorvik in Ålesund, who was declared bankrupt after a couple of years (Ole Thorvik, personal communication, 1991). She then was sold to Brandal, and that was the start of her famous period.

Just after she was launched in 1919, *Polarbjørn* went on a sealing voyage to the Denmark Strait and northeast Greenland captained by Øien. The following two years she operated as a freighter chartered by Store Norske Spitsbergen Kulkompani A/S (SNSK) carrying mail, coal, equipment, provisions, and labourers between Norway and Svalbard. In 1920 she was equipped with a cabin for 46 men in the forward cargo hold (SNSK Archive). From May to October that year, under the command of Captain Arne Meisingset, *Polarbjørn* made six return voyages between Norway and Svalbard, transporting 1220 tons of coal. In 1921 she made only one return voyage from Svalbard with 363 tons of coal. Then she was used as a tramp trader, sailing between northern and southern Norway.

In 1923, Øien returned to the ship as captain. She was chartered by Øien's uncle, the Norwegian Arctic explorer Adrian Jacobsen (1853–1947) for a hunting expedition to Svalbard, Franz Josef Land, and Novaya Zemlya, as part of Jacobsen's work with Carl Hagenbeck's zoo in Hamburg. This was Øien's last voyage as her master, and he was succeeded by Nikolai Aas of Florø.

The following year, *Polarbjørn* was chartered by George Binney for the Oxford University expedition to Spitsbergen and Nordaustlandet. This expedition also chartered the *Øiland*. Before she sailed, *Polarbjørn* was equipped with a wireless system.

The sealer *Terningen*, captained by Isak Isaksen, had been the Oxford University expedition ship in 1923. Binney's plan for 1924 was that Isaksen and his crew should be transferred from *Terningen* to *Polarbjørn*, but *Terningen* was damaged by ice and sailed to Iceland for repairs, thereby not reaching Tromsø in time. Captain Aas and his crew were engaged even though they had little experience in sea ice. *Polarbjørn* left Newcastle on 19 June with an aeroplane aboard. On 27 June, the expedition reached Tromsø, thence sailing to Spitsbergen. Binney had engaged the polar veteran Helmer Hanssen to be 'in charge of the dogs and production of dog pemmican' (Binney 1925). On 18 July, *Polarbjørn* struck a reef off Lågøya at the northwest coast of Nordaustlandet, and her false keel was stripped, although there was little serious damage. She returned to Tromsø in the middle of September after having spent 11 weeks in the north of Svalbard.

In 1925 Einar Amundsen, of Ålesund, one of *Polarbjørn*'s new owners, equipped her for a fishing expedition to a new ground that had been discovered by Captain Johan P.K. Olsen the previous year in West

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Fig. 2. Summer expedition in the 1930s. Photo courtesy Ishavsmuseet, Aarvak.

Greenland. Olsen signed on as *Polarbjørn*'s master, and at the end of the season *Polarbjørn* returned to Ålesund with a catch of 97 tons of salted cod and 30 barrels of halibut. This catch was unspectacular compared with the 39 other Norwegian vessels in the new fishing ground.

Under Johan Thorvik's ownership, *Polarbjørn* was used both as a freighter and a herring fisher off Iceland. In 1928 and 1929 Thorvik took her sealing in the White Sea. On one of her voyages there, her hull was seriously damaged whilst saving the crew of a wrecked sealer. In common with most Norwegian sealers in those days, she was only insured against a total loss. Thorvik suffered such a serious financial loss from this rescue operation that he went bankrupt (Ole Thorvik, 1991, personal communication).

It is unclear why the circus director Karl Norbeck purchased a polar ship. He would not give a definite answer to the press, but rumours indicated that his purpose was to hunt exotic polar animals to be trained for his circus. Alternatively, Norbeck might have been a middleman for wealthy and adventurous Americans (Berthelsen 1987; Ottesen 2001). Nevertheless, he sent the vessel on a regular sealing voyage to the Western Ice the following year (*Sunnmørsposten* 12 May 1927, 16 May 1927).

Norwegian Arctic research, 1931–48

The little village Brandal, not far from Ålesund in western Norway, had had a steady growth in its sealing fleet and by the 1930s was one of the leading sealing ports in the country.

In 1930 *Polarbjørn* was sold to A/S Polarbjørn, Brandal. The group behind her ownership was the sealing master Peter S. Brandal and Martin Karlsen, both from Brandal, and the Rieber fur company of Bergen. The owners chartered *Polarbjørn* to Norges Svalbard-og Ishavsundersøkelser (NSIU), later the Norsk Polarinstitutt, and Arktisk Næringsdrift A/S. Between 1931 and 1948 she served as NSIU's expedition ship on 10 scientific expeditions to Svalbard, Jan Mayen, and northeast Greenland (Fig. 2). Her master for 15 years was Kristoffer Marø of Brandal (1884–1966) a highly experienced sealing master and ice navigator (Fig. 3). The expedition leaders for NSIU during this period were Adolf Hoel, Anders K. Orvin and John Giæver. Compared with other available vessels, *Polarbjørn* was a modern ship. Diesel propulsion gave her a wide radius of action, no handling of dusty coal and comfortable cabin facilities made her an attractive charter.

In 1931 *Polarbjørn* was chartered for NOK 20,000 (£56,000 in 2005) for an expedition to the coast of northeast Greenland. She sailed from Ålesund on 7 July, with Adolf Hoel aboard as expedition leader. He was one of the main figures who secretly arranged for five trappers to hoist the Norwegian flag at Myggbukta and annex the area, Eirik Raudes Land, for Norway (Blom 1973). The expedition arrived at Myggbukta shortly after the annexation. Onboard was a group of 20 scientists in different

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Fig. 3. Master of *Polarbjørn* for 15 years, Captain Kristoffer Marø. Photo courtesy Ishavsmuseet Aarvak, Brandal.

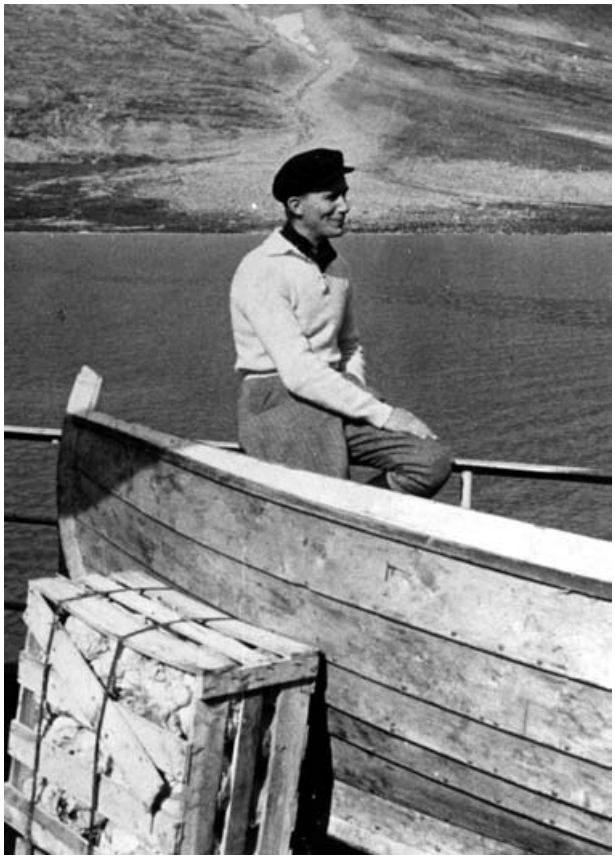


Fig. 4. Expedition leader John Giæver. Photo courtesy Ishavsmuseet Aarvak, Brandal.

fields: topography, zoology, geology, anthropology, and oceanography in addition to three journalists and a crew of nine men. On 9 August the American motor schooner *Effie M. Morrissey* captained by Robert A. Bartlett grounded on a reef at Cape Stosch in Clavering Fjord. *Polarbjørn* came to their assistance, and after 14 hours' hard work the schooner was afloat. By 22 August, fieldwork had finished and the expedition made preparation for departure. A group of seven wintering trappers had caught 186 foxes, 19 polar bears, and a wolf. Two men in the group were ill and sailed home on *Polarbjørn*, which went to Muskox Fjord to pick up John Giæver, who was wintering there, and to lay out a depot for Martin Mehren and Arne Høygaard, who were crossing Greenland on skis. In fact, the two men had already reached Strindberg Land and were able to return home aboard the ship. The scientific voyages of the *Polarbjørn* and her engagement in the northeast Greenland waters were specifically mentioned during the hearing in the International Court of Justice in The Hague concerning Norway's annexation of northeast Greenland.

Polarbjørn had a new Atlas 360-hp diesel engine installed for the summer expedition of 1932 (Nordanger 1980). The expedition became more intensive, due to the ongoing hearing at The Hague. *Polarbjørn* carried two planes for mapping and photographing of Eirik Raudes Land. The planes used flat ground at Myggbukta meteorological station as an airstrip. On the voyage was the lawyer and archaeologist Helge Ingstad, whom the Norwegian government had appointed governor of Eirik Raudes Land. He combined his administrative duties with trapping. In 1933 Norway lost the case in The Hague, and Ingstad sailed home onboard *Polarbjørn*. He was appointed governor of Svalbard the same year (Mikkelsen 1994).

From 1937 John Giæver served as the expedition leader (Fig. 4). That year it was joined by seven tourists, led by the Finnish big-game hunter and writer Ludvig Müsterhjelm. When *Polarbjørn* sailed from northeast Greenland on 26 August she had people from seven different nations aboard, including two Danish trappers whom the Arctic explorer Lauge Koch requested be taken to Norway for medical treatment. In 1938 a group of five tourists joined the expedition. *Polarbjørn* called at Jan Mayen on her homeward voyage and took onboard 10 members of the Imperial College Expedition. Giæver was married in the summer of 1939, and his wife sailed with him that year (John Giæver Jr, personal communication, 1996).

Other members of the 1939 expedition included the Swedish glaciologist Professor Hans W. Ahlmann and Kåre Rodahl, later professor of physiology and a physician. The director of NSIU, Adolf Hoel, arranged that his friend Paul Røer, a lawyer, should sail with the expedition (Paul Røer, personal communication, 2001) in

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Fig. 5. *Polarbjørn* (front) and *Polaris* at the Newfoundland sealing ground in 1938. Photo courtesy Ishavsmuseet Aarvak, Brandal.

1939, the same year as did the Norwegian author Nils Johan Rud who published a novel (*Drivende grenser*) in 1941, much inspired by this voyage.

The summer expeditions were carried out without any serious accidents. *Polarbjørn* grounded a couple of times on sand banks in the fiords of northeast Greenland but without damage. In 1937 she was towed off the ground by *Veslekari* (Captain Olsen), which was serving as Louise A. Boyd's expedition ship. In 1939 she had her propeller damaged in the ice between Shannon Island and Bass Rock, but with reduced speed she reached Ålesund on 1 September.

After World War II, *Polarbjørn* continued as an exploration and supply vessel for NSIU and Arktisk Næringsdrift A/S. In 1945 Captain Kristoffer Marø's son, Henrik Marø, signed on as her master, but the next year Kristoffer Marø was again her captain and his son the mate when the meteorological station in Myggbukta – which had been disassembled and evacuated during the war – was re-established.

In 1947 *Polarbjørn* brought home six musk-ox calves, which were released on Dovrefjell in Norway; the population flourished and is still there today. The following year the expedition brought home 10 musk-ox to northern Norway; their descendents now live on the island of Rya near Tromsø.

Sealing, 1930–37

Between 1931 and 1937, *Polarbjørn* sailed annually to the White Sea, sealing in late February and returning home in May or June before she sailed on summer expeditions for NSIU. If the catches in the White Sea were poor, she moved to the Western Ice. While sealing, *Polarbjørn* picked up several crews of sealers wrecked in both the White Sea and the Western Ice. The zoologist and film-maker Per Høst sailed with *Polarbjørn* on several voyages and carried out a scientific program on seals (Høst 1952). John Giæver also sailed with her on the sealing voyages.

During these years the catches of seals in both the White Sea and the Western Ice were low because of many years of heavy sealing. The increasing uncertainty in the sealing trade can be seen in the reduction in the Norwegian sealing fleet from 152 to 78 vessels between 1925 and 1935. Sealing in the White Sea was also hindered by Soviet regulations and inspections on the sealing grounds. During the 1930s, Norwegian sealing masters and investors looked for new sealing grounds.

Sealing at Newfoundland from 1938

In 1938, Captain Kristoffer Marø of *Polarbjørn* and Captain Peter P. Brandal of *Polaris* decided to try sealing in Newfoundland and Labrador waters (Fig. 5). The Arctic explorer Thor Iversen had made a detailed statement beforehand, in which he indicated that vessels sailing to Newfoundland ought to be bigger than 100 tons and should have diesel engines. He concluded that *Polarbjørn* was the vessel in the Norwegian fleet most suitable for this task. The government supported the idea and gave a guarantee against a loss of income for both *Polarbjørn* and *Polaris* (Erskine and Kjær 1998). The two ships had a very successful season in 1938 and the state guarantee was not required. The expedition had opened a new and

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Fig. 6. *Polarbjørn* on fire. Photo courtesy Ishavsmuseet Aarvak, Brandal.

profitable sealing ground for the Norwegian sealing fleet despite the long and risky crossing.

Unfortunately, all other sealers did not follow Iversen's precautions. The next year eight vessels sailed to the new sealing ground. During the crossing a hurricane developed in mid-Atlantic. Three of the shipss, *Isfjell*, *Saltdalingen*, and *Nyken* were lost, the crew of 20 from the *Isfjell* being picked up by a Swedish passenger ship. *Polarbjørn* and *Polaris* saved the crew of 18 from *Saltdalingen* during a dramatic and risky rescue operation, but tragically *Nyken* was lost with all hands. However, the vessels that reached the sealing ground had a successful season (Nordanger 1980).

After World War II *Polarbjørn* sailed annually to the Newfoundland sealing ground until she was lost in 1949 (Henrik Marø 1995, personal communication).

World War II

In April 1940, when German forces invaded Norway, *Polarbjørn* was off Newfoundland, and after the season ended she delivered her catch in St John's. During the summer of 1940 Karl Karlsen, son of one of the ship's owners, managed to escape from Norway and reached Halifax, where he took over the administration of the vessels of the Brandal sealing fleet that were stationed in North America after the German occupation. He soon became the leader of Nortraship department in Halifax (Sigmund Bøe, personal communication, 2005).

In the summer of 1940 the Norwegian government in exile in London chartered *Polarbjørn*, captained by Kristoffer Marø, for an expedition to northeast Greenland to deliver food and equipment to Norwegian trappers and wireless operators who were wintering there. *Polarbjørn* also brought over secret codes for the Norwegian telegraph stations and was escorted from Iceland by the Norwegian gunboat *Fridtjof Nansen*.

In the meantime, NSIU and the Norwegian Administration Council under German occupation sent the polar ship *Veslekari* (Captain J. Brandal) to northeast Greenland for the same purpose. The two vessels met in Myggbukta. The Norwegian government in London considered, largely erroneously as it turned out, that the *Veslekari* voyage was a Nazi enterprise and ordered her captured by *Fridtjof Nansen* and her master and crew to be arrested (Kjær and Sefland 2005). This was particularly troublesome as Captain Marø and Captain Brandal were brothers-in-law. *Polarbjørn* returned to St John's while *Veslekari* was taken to Iceland (Henrik Marø, personal communication).

Polarbjørn went sealing annually near Newfoundland during the war with the exception of 1942 (Marø 1955). In 1941 both John Giæver and Kåre Rodahl sailed as crew. Before the war, cod liver had been a main source for vitamin-A. Now other sources were urgently needed. Therefore the British government backed the health authorities' search for alternative sources. Rodahl sailed with *Polarbjørn* to investigate the concentration of vitamin-A in seal liver.

In the autumn of 1941, *Polarbjørn* was chartered by the American war administration. The American defence forces were establishing an air corridor between North America and England over Greenland and Iceland. A chain of airports and landing strips was built across Labrador, Baffin Island, and East and West Greenland. For

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this purpose, the US forces needed an ice-strengthened vessel, a crew that had sailed in polar waters, and a skilled ice pilot. *Polarbjørn*, captained by Kristoffer Marø, was engaged in the transport of equipment and personal for the Allied forces until the end of the war. This was a result of a contact between Bernt Balchen and Karl Karlsen (Sigmund Bøe, personal communication 2005). *Polarbjørn* sailed from Boston and Halifax to Baffin Island and West and East Greenland. The vessel was painted dark grey and had a machine gun bolted to the quarter deck. So dependable was her service that the Americans named her 'the ship that always arrives' (Giæver 1957).

The shipwreck

In 1949 *Polarbjørn* (Captain Henrik Marø) was sealing when she caught fire in the ice off Belle Isle, Newfoundland (Fig. 6). The fire started in the engine room, and it quickly proved that the insulation between an oil heater that just had been installed and the woodwork was not sufficiently effective. The Canadian sealer *Illinois*, captained by Henrik Marø's brother Harald, came to her assistance. Both crews worked hard to extinguish the fire, but in vain. *Polarbjørn* burnt down to the surface of the sea before the rest of the ship disappeared on 17 April.

None of her crew was seriously wounded, and the crew of 25 was transferred to the sealer *Herøyfjord* of Tromsø, captained by Guttorm Jakobsen (master of *Norsel*, the expedition ship of the Norwegian–British–Swedish expedition that sailed to the Antarctic the same year).

On her homeward voyage *Herøyfjord* had 66 men aboard. During the crossing to Norway a storm developed in the Atlantic. The cargo of pelts onboard shifted and *Herøyfjord* took a dangerous list to her starboard side, rolling towards the coast of Norway. Two sealers on their way home to Ålesund from the Western Ice picked up all 66 men in a dramatic rescue operation while *Herøyfjord* sank (Hansen 2000; Kjell Helgesen and Tomas Solheim, personal communications, 1999).

The name *Polarbjørn* survived: she was the first ship of five well-known polar ships by that name. *Polarbjørn* no. 5 is a research vessel for polar expeditions, seismology, and offshore sub sea support. She is 4985 gross tons, with an engine power of 9478 hp.

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References

Berthelsen, H. 1987. *Sirkusglede!* Drøbak: Norsk Circus-Forum.

Binney, G. 1925. *With seaplane and sledge in the Arctic.* London: Hutchinson & Co.

Blom, I. 1973. *Kampen om Eirik Raudes Land: Press-gruppepolitikk i grønlandsspørsmålet 1921–1931.* Oslo: Gyldendal Norsk Forlag.

Dalberg, A. 1990. *Fattigkasse og krig – svarte år i indre Ofoten.* Espa: Lokalhistorisk Forlag.

Erskine, A.B., and K. Kjær. 1998. The polar ship *Quest*. *Polar Record* 34 (189): 129–142.

Giæver, J. 1957. *Hardbalne polarkarer.* Oslo: Tiden Norsk Forlag.

Hansen, O.M.H. 2000. *Ishavsskutenes historie III.* Tromsø: Eget forlag.

Høst, P. 1952. *Hva verden viste meg.* Oslo: H. Aschehoug & Co.

Jacobsen, N.K. 1954. *Med Rieber gjennom 75 år.* Bergen: G.C. Rieber & Co A/S.

Kjær, K., and M. Sefland. 2005. The Arctic ship *Veslekari*. *Polar Record* 41 (216): 57–65.

Lloyd's register of shipping. 1919–20.

Marø, H. 1955. Autobiographical note. Unpublished document. Tromsø: Norsk Polarinstitutt.

Mikkelsen, P.S. 1994. *Nordøstgrønland 1908–60. Fangstmandsperioden.* Copenhagen: Dansk Polarcenter.

Nordanger, T. 1980. *Dramaet i Nord-Atlanteren. Februar 1939.* Bergen: Nordanger Forlag.

Norges Handelsflåte. 1923.

Ottesen, J. 2001. *Ishavsskuter III.* Ulsteinvik: Fotoarkivet.

Qvarnstrøm, R. 1973. *Nohab Polar's place in early diesel engine history.* Augsburg: Historisches Archiv MAN AG Augsburg.

Rud, N.J. 1941. *Drivende grenser.* Oslo: Gyldendal Norsk Forlag.

Steiro, V. 1991. *Gammelmotoren.* Stavanger: Eget forlag.

SNSK. 1920–21. Tromsø: Statsarkivet.

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