

# The First Soviet Convoy to the Mouth of the Lena

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**ABSTRACT.** In 1933 the newly-formed *Glavsevmorput'* (Chief Administration of the Northern Sea Route) dispatched the first convoy of freighters via the Northern Sea Route to the mouth of the Lena to deliver cargoes bound for the Yakut ASSR. It consisted of three freighters and was escorted by the icebreaker *Krasin*. Despite heavy ice conditions in the Kara Sea two of the ships reached Tiksi, their destination, and unloaded their cargoes. The third ship, bound for Bukhta Nordvik with an oil exploration expedition, ran aground near its destination and turned back. Severe ice conditions in Proliv Vil'kitskogo forced all three ships to winter at the Ostrova Samuila. A shore station was built and a full scientific programme maintained all winter. Urvantsev, the chief scientist, took the opportunity to make a winter reconnaissance survey of the northern portion of Poluostrov Taymyr using half-tracks. The convoy was freed from the ice by the icebreaker *Fedor Litke* in the summer of 1934 and having completed their tasks all three ships ultimately returned safely to Arkhangel'sk.

**Key words:** Soviet Northern Sea Route, Lena River, navigation, marine transport, icebreakers, convoys, Poluostrov Taymyr, Nordvik, oil exploration, wintering, all-terrain vehicles

**RÉSUMÉ.** En 1933, la nouvelle administration *Glavsevmorput'* (Administration centrale de la route de la Mer du Nord) a mis en route le premier convoi de navires de charge naviguant par la route de la Mer du Nord jusqu'à l'embouchure de la Lena afin de livrer des chargements à destination de Yakutsk, en R.S.S.A. Il s'agissait de trois navires de charge escortés du brise-glace *Krasin*. Même aux glaces abondantes dans le Mer de Kara, deux des navires ont pu amarrer à leur destination de Tiksi et décharger leur cargaison. Le troisième navire, en route pour Bukhta Nordvik avec une expédition d'exploration pétrolière, s'est échoué près de sa destination et a dû rebrousser chemin. D'intenses conditions glaciaires à Proliv Vil'kitskogo ont forcé les trois navires à passer l'hiver à Ostrova Samuila. On a donc procédé à la construction d'une station côtière afin de continuer un programme scientifique complet tout au cours de l'hiver. Le scientifique principal, Urvantsev, a profité de l'occasion pour effectuer une levée de reconnaissance d'hiver de la section nord de Poluostrov Taymyr, à l'aide de véhicules à chenilles. Le convoi a été libéré de la glace par le brise-glace *Fedor Litke* lors de l'été de 1934 et, leur mission accomplie, les navires ont pu retourner sans danger à Arkhangel'sk.

**Mots clés:** Route de la Mer du Nord soviétique, rivière Lena, navigation, transport maritime, brise-glace, convois, Poluostrov Taymyr, Nordvik, exploration pétrolière, hivernement, véhicules tout-terrain

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The past few decades have seen some interesting shifts in emphasis with regard to movement of freight to and from the Yakut ASSR. Prior to 1954 the Northern Sea Route had played an important role, with goods being transhipped from seagoing vessels to river craft at the port of Tiksi; up to 25% of the freight reaching Yakutiya was handled in this manner (Armstrong, 1980). But in 1954 the rail link from Tayshet on the Trans-Siberian Railway to Ust'-kut on the upper Lena was opened and its river port of Osetrovo was opened soon afterwards. Thereafter the emphasis with regard to supplying Yakutiya shifted almost completely from the Northern Sea Route to the southern rail/river route. Thus by 1961 only 3% of incoming freight was being handled by the Northern Sea Route (Armstrong, 1980) as against 80-85% by Osetrovo by the mid-seventies (Shabad, 1979a). In 1980 Ust'-kut handled close to 3.2 million tonnes of oil products (Shabad, 1981).

But by that stage Osetrovo was becoming a serious bottleneck, particularly because of the shallow depths on the upper Lena. Problems and delays were even worse in the case of freight travelling down the Lena, then along the coast to the Yana or Indigirka and up those rivers (Belinskiy, 1978). As a result, since 1978 the emphasis has started to shift back to the Northern Sea Route and the status of Tiksi as a transshipment port for goods bound for Yakutiya has risen dramatically (Shabad, 1979b). Most significantly the port of Tiksi is undergoing major expansions, the main

improvement involving the building of a deep-water pier 136 m long (Shabad, 1981). In the light of these facts the events surrounding the progress of the first Soviet convoy to reach the mouth of the Lena almost half a century ago help to place the present activity in context.

In 1932 two interrelated events occurred which would have far-reaching impacts on the development of the Soviet Arctic. On 1 October 1932 the icebreaking steamer *Sibiryakov* emerged from the ice in Bering Strait having completed the first one-season passage of the Northern Sea Route from Arkhangel'sk (Barr, 1978; Vize, 1946; Belov, 1959). It was not an unqualified success, however; *Sibiryakov* had lost her propeller two weeks previously and had managed to reach the edge of the ice only under improvised sails and with a large measure of luck. The other related event was the creation on 17 December, by the Soviet of Peoples' Commissars of the USSR, of the organization *Glavnoye Upravleniye Severnogo Morskogo Puti* (Chief Administration of the Northern Sea Route), commonly known as *Glavsevmorput'*. It was furnished with extremely wide powers and was given the task of developing the Northern Sea Route as a commercial waterway (Belov, 1969).

Two operations were planned for the following season (1933), both representing attempts by the new organization to demonstrate its capabilities. First an attempt was made to show that the problems which *Sibiryakov* had encountered could now be mastered; to this end the steamer

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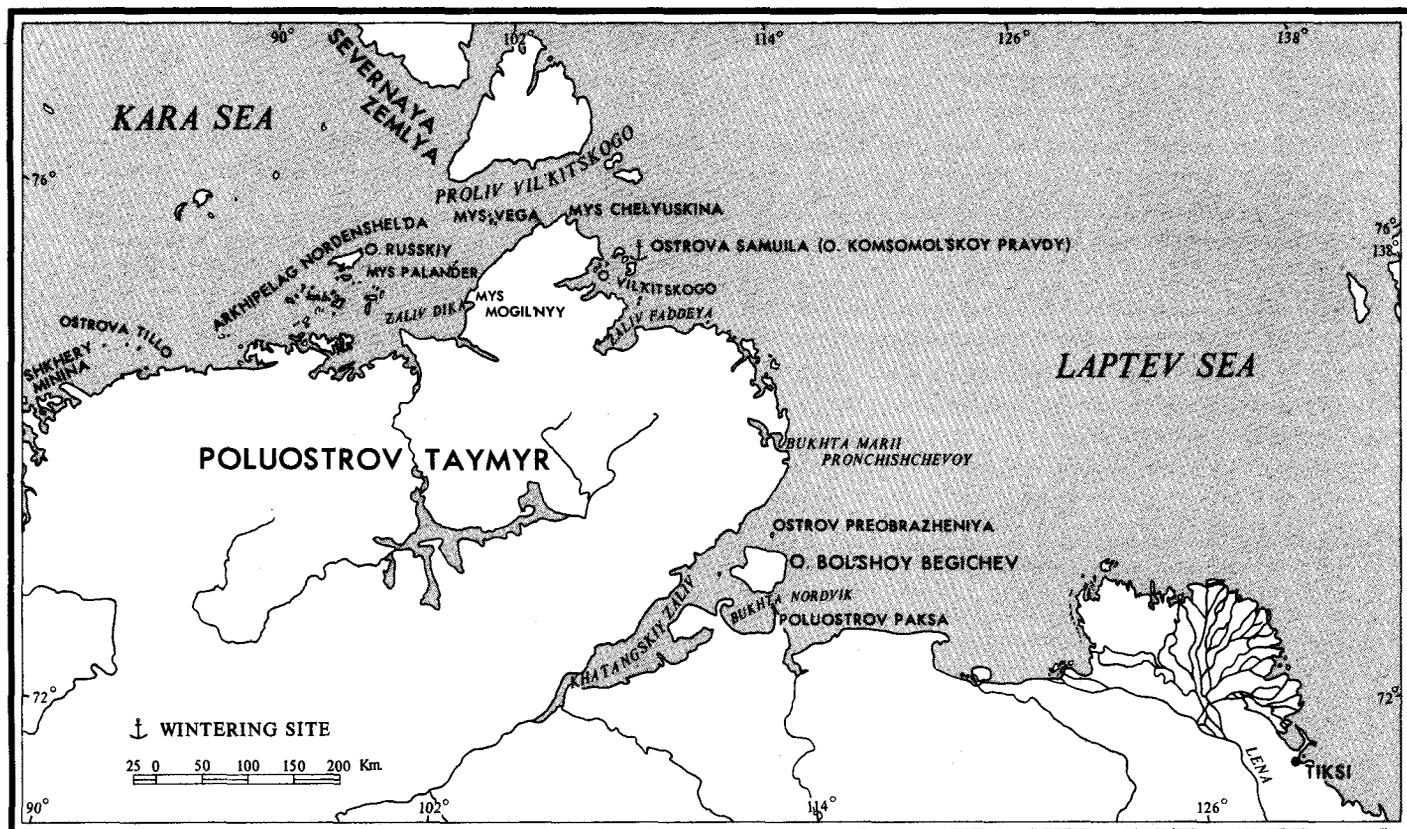


FIG. 1. Poluostrov Taymyr and the Laptev Sea showing the area of activity of the First Lena Expedition.

*Chelyuskin* again attempted the passage of the entire Northern Sea Route, but with even more disastrous results. She became beset in the ice of the Chukchi Sea and after drifting helplessly for several months, was finally crushed and sank early in 1934 (Schmidt *et al.*, 1935; Belov, 1969). This entire operation received great publicity, particularly since the evacuation of the ship's personnel from the ice by means of a remarkable airlift operation was brilliantly successful. The other operation, the first attempt at sending a convoy of freighters to the mouth of the Lena, though not an unqualified success was certainly not as disastrous as the *Chelyuskin* episode, but has tended to be overshadowed by it and has received little attention from arctic historians, especially in the English-speaking world (Fig. 1).

Prior to 1933 freight movements to Yakutiya via the Northern Sea Route had been no more than a trickle. After the arrival of the diminutive steamer *Lena*, which had reached the Lena delta from the west in 1878, escorted by Nordenskiöld's *Vega*, no cargo reached the Lena system from the sea again until 1926, and even then it represented only a coastwise movement. In that year the motor-schooner *Polyarnaya Zvezda*, commanded by Captain I.A. Korol'kov, hauled 41 tonnes of cargo from Nizhne-Kolymsk, near the mouth of the Kolyma, to Tiksi (Belov, 1959). The following year the steamer *Kolyma*, under Captain P.G. Milovzorov, successfully extended her normal

run from Vladivostok to the mouth of the Kolyma, westwards to Tiksi, delivering a mixed cargo of 415.2 tonnes, and returning safely to Vladivostok. This success provoked a proposal for annual voyages to the mouth of the Lena from the east, but when, under the command of Captain P.V. Sidnev, *Kolyma* attempted to repeat the experiment in 1928 she was brought to a halt by ice in Proliv Lapteva and was forced to winter and did not return to Vladivostok until September, 1929. In view of this less-than-optimal performance attempts at moving freight to Yakutiya were discontinued thereafter, until 1933.

The impetus for the expedition derived mainly from pressure exerted on Moscow by local interests in Yakutiya (Belov, 1969). With industrial activity (especially mining) in the Lena basin expanding rapidly, the existing transport connections involving road/water links were totally inadequate to handle the freight involved; hence the newly formed *Glavsevmorput'* was called upon to dispatch a convoy of freighters from Arkhangel'sk to Tiksi, which had been identified as the most appropriate transshipment point near the mouth of the Lena.

Soviet experience of handling convoys of freighters in arctic waters was already quite considerable. Convoys had been moving freight to and from the Yenisey from the east on an annual and steadily expanding basis throughout the 1920s (Belov, 1959; Armstrong, 1952). And in the Soviet Far East the first convoy had reached the mouth of

the Kolyma from Vladivostok via Bering Strait in the summer of 1932 (Barr, 1979).

The main icebreaker escort would be provided by *Krasin* (Kapitan Ya. P. Legzdin). Three steamers, each of about 3100 tonnes displacement, normally used for carrying timber and with no special ice strengthening, were selected for the expedition: *Volodarskiy* (Kapitan N.V. Smagin), *Tovarishch Stalin* (Kapitan Sergeyev) and *Pravda* (Kapitan Kh. A. Belitskiy). Convoy leader (on board *Volodarskiy*) was Kapitan M.A. Sorokin. To be strictly accurate only two of these ships were to carry freight to Tiksi for various organizations in Yakutiya. Their total cargoes amounted to 5461 tonnes, mainly mining equipment and supplies but also 1800 tonnes of rye flour and 326 tonnes of sugar (Belov, 1969).

*Pravda's* cargo consisted of 2430 tonnes of equipment and supplies for the first oil exploration expedition to Northern Siberia. In charge was the veteran arctic geologist N.N. Urvantsev, who had discovered the important Noril'sk ore deposits only five years earlier and in the interim had filled the important role of surveyor on Ushakov's exploratory expedition to Severnaya Zemlya (Barr, 1975). The new expedition was bound for Bukhta Nordvik where an outcrop of rock salt in a hill known as Tus-Takh on Poluoostrov Uryung Tumus was suspected of being a salt dome, probably with oil and gas associated with it.

The expedition personnel included Urvantsev himself, his wife Yelizaveta Ivanovna, who was the medical officer, another husband-and-wife team consisting of I.I. Lomakina (meteorologist) and N.V. Lomakin (hunter/dog driver), drilling chief V.A. Poluyanov, drilling foreman N. Ya. Bolotnikov, drivers I.A. Bizikin and G.G. Kolobayev and mechanics M.A. Grachev and Chuykin. The latter four men were in charge of four NATI-2 half-track vehicles, experimental models built by the Nauchnyy Avto-traktorny Institut in Moscow, using a 1½ tonne GAZ-AA truck as the basic unit (Urvantsev, 1978). These, the first tracked vehicles to be used in the Soviet Arctic, would haul the drill rig, buildings, and supplies from the landing site to the drilling site. Apart from the drill rig (a KA-500 rig, which could be broken down into components weighing 50-75 kg) and a fully equipped drilling camp, *Pravda's* cargo also included the rails, ties and rolling stock for a narrow-gauge railway (Belov, 1969).

A further task of the expedition, which has become practically an annual event ever since, was the transfer of river craft via the Northern Sea Route to the Lena. The craft involved were a powerful tug, *Pervaya Pyatiletka* (Kapitan A.N. Mekeshin), and a steel lighter of 3500 tonnes capacity (Belov, 1969). Both had previously operated on the Ob'.

*Tovarishch Stalin*, *Volodarskiy* and *Pravda* sailed from Arkhangel'sk on 8 August 1933. During the previous month Urvantsev and his colleagues had not only loaded all their equipment and supplies aboard ship themselves owing to a

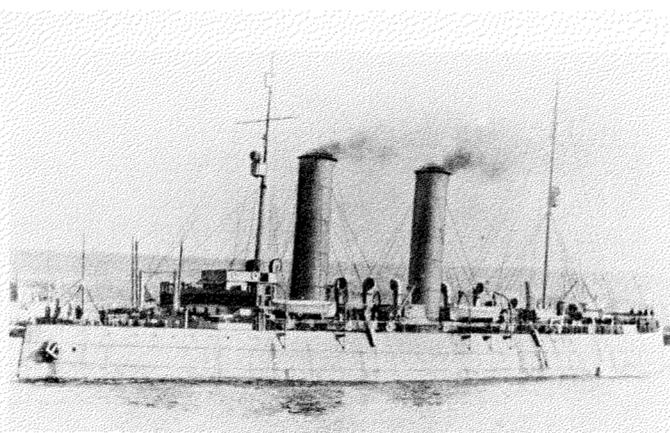


FIG. 2. The icebreaker *Krasin* (originally *Svyatogor*) leaving the Tyne on her maiden voyage in 1916. (Photo courtesy of Armstrong Whitworth and Co. and Mr. Edward Wilson, Burntisland, Fife.)

shortage of dockworkers, but had even had to convert one of the holds into living quarters by knocking together bunks, tables and benches (Urvantsev, 1978). The last task (on the 7th) was to load about a dozen cattle and pigs which represented the expedition's meat supply for the winter, and also Lomakin's dogteam.

The three freighters were to proceed independently to Matochkin Shar where they were to rendezvous with *Krasin* (Fig. 2). The latter had sailed from Leningrad on 17 July, and after a call at Murmansk had put to sea again on 7 August (Anonymous, 1934; Belov, 1969). Despite some fresh weather in the Barents Sea which made life rather miserable for the dogs in their exposed quarters on the fo'c's'lehead, the freighters made good time. They steamed through Matochkin Shar on 12 August and dropped anchor off the weather station at its eastern end (Urvantsev, 1978). *Chelyuskin*, just starting her passage of the Northern Sea Route, was already lying there, and some mutual visiting went on among officers and scientists. *Krasin*, too, was already here, and next morning, with the icebreaker in the lead, the convoy headed east into the Kara Sea. *Chelyuskin* steamed off independently.

The Lena convoy ran into ice almost immediately; initially quite scattered and light, by the following day it was close and quite heavy. The channel broken by *Krasin* would quickly drift shut again, so that the freighters became jammed, obliging the icebreaker to swing back and break them free. Amazingly, at this point Urvantsev learned that *Pravda's* captain, Kh. A. Belitskiy, had never handled a ship in ice before (Urvantsev, 1978). From time to time patches of fog complicated the situation. On the 15th *Krasin* received an SOS from *Chelyuskin*, following a more northerly course across the Kara Sea; she was beset in close ice and making water in the forepeak due to damage received from the ice. Ordering the three freighters to head south to open water, *Krasin's* captain went to *Chelyuskin's* rescue.

The Lena convoy soon reached open water but they had not come through unscathed. *Pravda* had a bent propeller blade, and *Tovarishch Stalin* had a leak in the forepeak; her

engineers were able to patch it with cement. Swinging east again, they reached Dikson safely on 18 August. Already waiting there were the icebreaking steamers *Sibiryakov* and *Rusanov*. The former, commanded by Kapitan I. V. Khlebnikov, was bound for Mys Chelyuskina to relieve and resupply the weather station there, established only the previous year (Ruzov, 1957). The latter, under the command of Kapitan Yerokhin, was bound for Bukhta Marii Pronchishchevoy, on the east side of Poluostrov Taymyr; on board was a hunting/trapping party led by S. P. Zhuravlev, who had filled the role of hunter and dogdriver on Ushakov's expedition to Severnaya Zemlya (Barr, 1975). Zhuravlev and his party planned to establish a permanent base camp at Bukhta Marii Pronchishchevoy in order to exploit the resources of this uninhabited area of the Soviet Arctic (Astrova, 1933). Both *Sibiryakov* and *Rusanov* had been detailed to assist *Krasin* in escorting the Lena convoy as far as Mys Chelyuskina.

The other participants in the expedition, the tug *Pervaya Pyatiletka* and her lighter, reached Dikson on 21 August. They had sailed from Omsk on 18 July; this slow progress was explained by the fact that the tug had been handling another two lighters as well, one bound for Novyy Port and the other for Dikson (Yankovich, 1972). The voyage had been a frustrating sequence of groundings and broken towing cables.

*Krasin* reached Dikson on the 22nd, having rescued *Chelyuskin* from her plight; due to the icebreaker's deep draught Kapitan Legzdin was obliged to anchor outside the harbour. Also at about this time the leader of the Lena expedition, B. V. Lavrov, flew in from Krasnoyarsk (Urvantsev, 1978). The entire expedition was now assembled.

At 11:00 a.m. on the 23rd Lavrov called a meeting on board *Krasin*, to which he invited all the ships' captains, Professor Urvantsev, Professor V. Yu. Vize, who was in charge of the scientific programme on board *Sibiryakov*, and pilot A. D. Alekseyev (Morozov, 1934). *Sibiryakov* had already tried unsuccessfully to reach Mys Chelyuskina and hence the captains of the freighters, the first such ships to attempt to round Mys Chelyuskina, were understandably somewhat anxious.

After considerable discussion it was decided to attempt a route outside the Shkheri Minina and the Arkhipelag Nordenshel'da. Next day Alekseyev flew an ice reconnaissance and his report on his return was favourable: a coastal polynia some 25-80 km wide stretched eastwards from the Ostrova Kamenniye (Yankovich, 1972). The convoy weighed anchor at 11:00 p.m. that evening. The order of steaming was as follows: *Krasin*, *Tovarishch Stalin*, *Pravda*, *Rusanov*, *Volodarskiy*, then *Sibiryakov*; thus ice-breaking vessels alternated with freighters (Ruzov, 1959). *Pervaya Pyatiletka* and her lighter would wait at Dikson until the convoy had passed Mys Chelyuskina.

At first, steaming east in open water at a steady six knots, the convoy was able to maintain this order, but

entering the ice on the 25th the order became somewhat disarranged. The freighters, especially *Volodarskiy*, repeatedly became jammed and *Krasin* had to go to their assistance. Early on the morning of the 26th the ice became much closer and the problems were compounded by dense fog. Kapitan Legzdin ordered the convoy to heave-to to wait for an improvement. When the fog cleared somewhat *Krasin* began smashing her way northeast past Ostrova Tillo (Morozov, 1934), the convoy following astern.

On 29 August *Krasin* left the convoy hove-to in the ice near Ostrov Russkiy and pushed ahead to find the best route into Proliv Vil'kitskogo. After the icebreaker had steamed some 80 km to the northeast and Lavrov and Legzdin had satisfied themselves that there was a feasible route for the convoy, the icebreaker turned back. But the port propeller happened to hit a particularly tough floe, and unfortunately the propeller shaft sheared (Morozov, 1934; Zinger, 1948, 1966).

Operating with only her two remaining propellers *Krasin's* power was reduced by some 25% and her manoeuvrability by some 50%. Nevertheless it was decided to push on with the expedition; indeed there was little alternative, since the icebreaker's services were urgently needed. In her absence the freighters had been subjected to quite severe ice pressures and *Volodarskiy's* sides had been caved in slightly. Despite the best efforts of *Sibiryakov* and *Rusanov* to free the freighters the situation had looked quite ugly for some time (Anonymous, 1934; Zinger, 1966).

*Krasin* had reached the convoy and, despite her handicap, had begun cutting the freighters free when early on the morning of 30 August Alekseyev's aircraft, SSSR-N2, roared overhead. Flying from Dikson Alekseyev had reconnoitred ice conditions as far as Mys Chelyuskina and now, circling low over the convoy, he indicated the best route to open water (Zinger, 1948, 1966).

At this point a change in the wind began to slacken the ice, easing *Krasin's* task greatly. The ships soon emerged into open water and began forging steadily eastwards. But before they could reach the cape there was yet another crisis. During the afternoon of the 31st *Tovarishch Stalin* radioed that the coal in her bunkers had caught fire due to spontaneous combustion (Belov, 1969). It was a critical situation; barrels of gasoline and dynamite were stowed in her holds. *Krasin* and *Sibiryakov* quickly pulled alongside the freighter and the hard, dirty job of shifting coal began. Once the seat of the fire had been exposed and extinguished, the convoy got under way again. It reached Mys Chelyuskina in the early hours of 1 September (Anonymous, 1934; Zinger, 1948; Urvantsev, 1978).

*Chelyuskin*, bound for Bering Strait and escorted temporarily by *Sedov*, arrived almost simultaneously (Ruzov, 1957), bringing the total to eight vessels, by far the largest fleet ever seen at this most northerly point of Eurasia. While members of off-duty watches visited between ships or went ashore to visit the weather station (Zinger, 1966), *Krasin* bunkered from *Tovarishch Stalin* (Morozov, 1934)

while *Sibiriyakov* and *Rusanov* began unloading freight for Mys Chelyuskina. The assembled fleet soon dispersed. Since ice conditions in the Laptev Sea were very open Lavrov gave the Lena convoy permission to proceed independently to their destinations (Urvantsev, 1978). *Pravda* and *Volodarskiy* weighed anchor and steamed east into the Laptev Sea on the 1st; *Tovarishch Stalin* followed next day. On the evening of 2 September Lavrov radioed *Pervaya Pyatiletka*, still waiting at Dikson, that she should start east for Mys Chelyuskina with her tow immediately (Yankovich, 1972) while *Krasin* headed back west to meet her.

*Pravda* and *Volodarskiy* ran into some ice southeast of the Ostrova Samuila; since they were now unescorted it caused a certain amount of alarm, particularly for Kapitan Belitskiy (Urvantsev, 1978; Belov, 1969). But it was only a relatively narrow belt of ice and the two freighters were soon in open water again. Despite quite strong winds and heavy seas they made good progress south.

By 4 September *Pravda* was approaching Bukhta Nordvik; Kapitan Belitskiy had decided to approach it from the east, between Poluostrov Paksa and Ostrov Bol'shoy Begichev. Despite having no knowledge of the depths in this fairly narrow channel Belitskiy forged ahead, albeit at slow speed, without taking the elementary precaution of sounding. The inevitable happened: *Pravda* ran aground in the centre of the channel (Anonymous, 1934; Zinger, 1948). Fortunately this happened at low tide and the ship could be refloated fairly easily at high tide. Belitskiy retreated into deep water again, anchored, and proposed to Urvantsev that he disembark the expedition using launches and barges from that position.

Urvantsev understandably demurred and suggested that the captain send a boat ahead to take soundings. The latter, however, refused to take his fully laden ship into water where such a precaution was necessary. Instead he called a meeting of the ship's *soviet* and its decision was that *Pravda* should head back north to Bukhta Marii Pronchishchevoy where *Rusanov* was establishing Zhuravlev's base camp, and unload Urvantsev's expedition there, despite the fact that it lay some 160 km from Bukhta Nordvik and on the wrong side of Khatangskiy Zaliv (Urvantsev, 1978). One can well imagine the frustration of Urvantsev and the other expedition members at this obtuseness.

To make matters worse, the survey vessel *Pioner*, manned by an oceanographic party which had only just finished sounding Bukhta Nordvik, lay only a short distance away on the west side of Ostrov Preobrazheniya. *Pioner* had no radio and her crew knew nothing about *Pravda* calling at Bukhta Nordvik, nor indeed anything else about the Lena convoy. Similarly neither Lavrov, Belitskiy, nor Urvantsev knew of *Pioner*'s activities in these waters. In order to disseminate the results of their work to the best of their ability the oceanographers had set up stakes at intervals around the shores of Bukhta Nordvik and had placed copies of the chart they had compiled in a

can attached to each stake. While *Pravda* lay aground one of these stakes had been plainly visible on shore but Belitskiy had refused to send anyone to investigate. Altogether this was a total and disastrous breakdown in communications.

Despite having been warned by radio by *Rusanov*'s Kapitan Yerokhin of a shoal across the mouth of Bukhta Pronchishchevoy, and of strong tidal currents, Belitskiy steamed boldly into the mouth of the bay without sounding; almost predictably *Pravda* ran aground again, but this time more firmly. Belitskiy tried in vain to refloat his ship by her own efforts. *Rusanov*, which had still not finished unloading Zhuravlev's expedition, reached her the next day and tried to tow her free; the only result was broken cables and damaged bitts. Some of *Pravda*'s cargo was offloaded onto floes alongside, and after floating to and fro with the tide for some time was mostly recovered. Fuel and other cargo was also transhipped to *Rusanov* (Astrova, 1933; Urvantsev, 1978), and *Pravda*'s water ballast pumped out. Finally, on 14 September *Rusanov* managed to pull *Pravda* off the shoal.

Meanwhile *Volodarskiy* and *Tovarishch Stalin* had met with somewhat better luck. *Volodarskiy* reached Tiksi on 7 September and *Tovarishch Stalin* the following day. But they were greeted by some rather disturbing news. In view of the lateness of the season the local authorities had decided that the freighters would not be coming and had sent all the tugs back up the Lena for the winter (Zinger, 1948; Belov, 1969). Fortunately there were still several dozen barges of various sizes available. Making the best of the situation the ships' crews began unloading into the barges, which were then towed ashore by a few motor launches which were available (Zinger, 1966).

In the interim *Pervaya Pyatiletka* and her tow had safely negotiated the Arkhipelag Nordenshel'da and on 7 September they reached Mys Chelyuskina with *Krasin*'s assistance (Zinger, 1966). On reaching Tiksi Kapitan Mekeshin took charge of the situation (Yankovich, 1972). With the tug's considerable horsepower the task of lightering the cargoes ashore from the freighters proceeded rapidly; 4388 tonnes were transhipped in only a few days. On 20 September *Pervaya Pyatiletka* started south up the Lena towing a string of barges and leading a small convoy of assorted river craft. She reached Yakutsk safely on 26 October, fighting ever-thickening ice for most of the voyage. The freight she brought was the first to reach Yakutsk via the Northern Sea Route since *Lena* had arrived from the west in 1878.

*Tovarishch Stalin* and *Volodarskiy* sailed on 16 September (Anonymous, 1934). Two days later they were met at 75°06'N, 117°02'E by *Krasin*. The same day *Tovarishch Stalin* suffered a bent propeller blade in a collision with a floe. The convoy headed north through relatively easy ice towards Proliv Vil'kitskogo, and on the 19th was joined by *Rusanov*. Next day *Pravda* also joined the convoy (Anonymous, 1934; Urvantsev, 1978). As far as Mys Chelyuskina

the young ice presented no serious obstacles and the fields of old ice were small enough that they could be easily avoided.

The convoy passed abeam of Mys Chelyuskina on 21 September and it must have seemed that the worst was over. But the nights were now sufficiently dark that the convoy was forced to heave-to until dawn and by morning a current had carried the ships back east through Proliv Vil'kitskogo once again. Next day they battled west once again, through increasingly heavy ice. Both *Pravda* (Urvantsev, 1978) and *Tovarishch Stalin* lost propeller blades, further slowing the convoy. Finally, late on the 22nd Lavrov was forced to accept the fact that the freighters were incapable of fighting their way through Proliv Vil'kitskogo.

The convoy headed back east to the Ostrova Samuila (now Ostrova Komsomol'skoy Pravdy), some 110 km from Mys Chelyuskina, where it was decided the ships would winter. They reached their destination around noon on the 23rd. *Krasin* broke a channel for the convoy in the fast ice surrounding the islands and the three freighters were manoeuvred until they lay side-by-side in the middle of the strait between the two largest islands, sheltered from all probable ice pressures (Anonymous, 1934; Ruzov, 1957). B.V. Lavrov stayed with the convoy as overall leader; Kapitan Smagin of *Volodarskiy* was appointed group captain of the wintering ships and Urvantsev was made leader of the scientific detachment. His orders were to mount a full scientific programme including studies in meteorology, geology, zoology and other disciplines. The scientific party totalled 17 people, including Dr. Urvantsev, the four half-track drivers and mechanics, a radio operator and a cook. A skeleton crew of 27 men was left aboard each ship. The remaining personnel transferred to *Krasin* and *Rusanov*, both of which weighed anchor and headed west on 24 September.

To save fuel it was decided to keep steam up only in *Tovarishch Stalin's* boilers; she was lying between the other two ships and connections could easily be made to their steam heating systems. As a further energy-saving measure the personnel of one of the ships was transferred to the two others. A strict schedule of activities was laid out for all members of the crews with strong emphasis on regular exercise. To this end it was decided that ice for the daily fresh water requirements of 5-6 tonnes would be chopped from hummocks and hauled to the ships by hand. In order to counter boredom official courses in a variety of subjects, according to *Narkomvod's* official programme, were offered on board the wintering ships (Urvantsev, 1978).

One senses from Urvantsev's account that he rather relished this opportunity to spend another winter usefully in the Arctic, especially after the frustrating debacle in Bukhta Nordvik. The very next day he went ashore with the senior carpenter I.N. Samoylov to select a site for the scientific station. Apart from its scientific functions it would also serve as an emergency refuge if one or more of the ships were crushed. The site Urvantsev chose was on

the southwestern part of the western island, about 8 km from the ships.

By now the ice was quite thick and on 26 September the half-tracks were offloaded onto the ice and began hauling building materials to the site. On one of these trips a serious accident was narrowly averted when one of the vehicles broke through and began to slide backwards into the water. The driver, Bezikin, and Urvantsev had the presence of mind to hitch a cargo hook from the ship's derrick around the front axle before the vehicle disappeared, and it was later salvaged; after a major overhaul it was operational again.

The base hut, which was intended for Bukhta Nordvik, was of frame and plywood construction, with double walls filled with sawdust for insulation. It measured 6 × 15 m and contained five bedrooms, a kitchen, dining-room and lounge. Unheated porches were built on either end for storing coal, firewood and ice for water. The windows were triple-glazed. Ancillary buildings included a smaller hut for the radio station and weather office which also housed the radio operator and his technician, a provisions store, a bath house, a garage with heated workshop attached, and finally a hut for the dogs (Urvantsev, 1978).

The shore station and the wintering ships were just settling down to a regular routine when, in late October, a tragedy occurred. Yeliseyev, one of *Tovarishch Stalin's* oilers, went missing. When the alarm was raised two of the half-tracks and Lomachkin with his dogteam drove out from the island to the ships. It turned out that Yeliseyev had gone racing off after a bear, alone and wearing only a quilted jacket. A light ground drift had quickly covered his tracks, and by the time the search parties set out the drift was even heavier. After travelling 8 km in the direction in which Yeliseyev had been heading, the two vehicles and the dogteam were forced to give up and turn back. A full-scale search involving 10-12 men on skis was planned for the following day, but by morning a full blizzard was blowing. The search was called off as being likely to result only in further loss of life.

In November tragedy struck again: Pustoshnyy, one of *Volodarskiy's* engineers, disappeared one night during a particularly fierce blizzard. Preparations had begun for a full-scale search when a pair of feet was spotted protruding from the snow in the narrow gap, only some 1.5 m wide, between two of the ships. The doctor's post mortem revealed a dislocated spine. Evidently Pustoshnyy had fallen from the narrow gangway thrown between the two ships and had landed on his head on the rock-hard snow some 4 m below. The blizzard had then buried his body. Next day a grave was excavated among the rocks on a little islet about 3 km southwest of the ships and a simple burial service was held.

Once the sun reappeared Urvantsev set in motion plans which had been maturing all winter for a long-range reconnaissance of the northern part of Poluoostrov Taymyr using the half-tracks; it would serve the twin aims of adding to

the knowledge of this little-known area and of providing experience of mechanized winter travel in the High Arctic. The expedition set off on the morning of 20 March in clear, calm, sunny weather with a temperature of  $-32^{\circ}\text{C}$ . The party consisted of Urvantsev, topographer Teologov, and drivers Bezikin and Grachev. They took two half-tracks, each of which towed a sledge laden with cans of gasoline. The sledges were light enough to be manhauled in the event that both vehicles broke down.

The route lay south past the Ostrova Vil'kitskogo, the vehicles stopping every 1-2 km while Teologov completed his survey. On the second day out what might have been a serious accident occurred; Teologov slipped and one of the vehicle tracks ran over his foot. The combination of soft snow, his thick *valenki* and the low ground-pressure of the vehicle restricted the damage to some bad bruises. Swinging west into Zaliv Faddeya the party turned inland to follow the valley of a small river flowing into the head of that inlet. A blizzard pinned them down for four days but towards evening on 31 March, despite rugged, boulder-strewn terrain and soft snowdrifts, the expedition emerged at Zaliv Dika on the west side of Poluostrov Taymyr. Here the party camped at Mys Mogil'nyy near the graves of Leytenant A.N. Zhokhov and stoker I.N. Ladonichev, who had died and been buried during the 1914-1915 wintering here of the Imperial Navy icebreakers *Taymyr* and *Vaygach* (Starokadomskiy, 1976; Kupetskiy, 1964). The party members also located a cache of food left by the same expedition, and on sampling some of the canned goods found them excellent.

Pushing north towards the entrance to Proliv Vil'kitskogo the party made their next two camps at Mys Palander and at Mys Vega (Urvantsev, 1978). They reached the station at Mys Chelyuskina next evening and were made warmly welcome by L.V. Ruzov and his staff. At Ruzov's invitation they spent a couple of days there, resting and making minor repairs to the vehicles. The final 95 km back to the wintering base were covered in 12 straight hours of driving, the party reaching its destination on the evening of 9 April.

In May Urvantsev and some companions made another trip, again with two half-tracks, to Mys Chelyuskina. The purpose was to deliver some aircraft parts, totalling about one tonne in weight, and also two aircraft floats. In view of the awkwardness of the latter they were mounted on wheels and towed behind the vehicles. This time the route chosen was in a nearly straight line across the sea ice; the party covered 85 km to the station at Mys Chelyuskina in only eight hours and 20 minutes. They returned safely to their own winter quarters next day. In total during the wintering the four half-tracks covered 7000 km and transported 2600 tonnes of assorted freight. This performance promised well for the future of this type of vehicle in the Arctic.

During the spring an unexpected visitor suddenly arrived at the wintering site; this was Zhuravlev, travelling by dogteam from his base at Bukhta Marii Pronchishchevoy

to Mys Chelyuskina to fetch a doctor, since there was sickness at the hunting base. The wintering ships and the shore station on the Ostrova Samuila came as a total surprise to him, since as far as he knew the ships had returned safely to Arkhangel'sk in the autumn.

It was decided that Dr. Urvantseva should return to Bukhta Marii Pronchishchevoy with Zhuravlev; here the doctor found to her amazement that several of the 21 people (10 trappers, four women and seven children) were suffering from scurvy. Even more surprisingly, it had been diagnosed by some member of the group as venereal disease and the victims had been ostracized and denied access to the kitchen. The doctor stayed at the hunting camp for 11 days, by which time she could see clear signs of improvement as a result of the dietary changes she prescribed, then returned to Ostrova Samuila, again by dogteam.

There had been a great deal of activity at the station in the meantime; it had been decided to make this a permanent arctic weather station and hence the buildings had to be painted and generally made ready for prolonged occupation. On board the ships preparations were under way for the upcoming navigation season; by trimming the steamers down by the head the damaged propellers were exposed and broken and bent blades could be replaced. Meanwhile engines were reassembled. On 30 May the half-tracks were driven out to the ships and loaded aboard *Pravda* for delivery to Bukhta Nordvik. In early June the shore party all moved back aboard with the exception of the radio operator and mechanic, who would stay to hand over the station to the relief party.

There were two possible contenders for the privilege of freeing the wintering ships. The veteran icebreaker *Yermak* would be eastward bound to the Lena with the ships of the Second Lena Expedition, and *Fedor Litke* (Fig. 3) would be heading west from Vladivostok, attempting the first accident-free one-season passage of the Northern Sea Route. The leader of the *Litke* expedition was Kapitan D.S. Dublitskiy (Vize, 1946); Kapitan N.M. Nikolayev was in command of the ship, while Professor V. Yu. Vize was in charge of the scientific programme (Nikolayeva and Sarankin, 1963).

*Fedor Litke* sailed from Vladivostok on 28 June 1934 and passed Bering Strait on the morning of 13 July (Vize, 1934). She was considerably delayed by ice in Proliv Longa but on 2 August she passed through Proliv Lapteva into the Laptev Sea. As she approached the Taymyr coast she again entered ice and by the afternoon of 11 August was manoeuvring among heavy floes. Late on the evening of the 12th the masts and funnels of *Pravda*, *Volodarskiy* and *Tovarishch Stalin* appeared dead ahead, but between *Litke* and them lay 10 km of unbroken fast ice.

Nikolayev consulted with Dublitskiy and his officers. He was very concerned about the condition of his ship's hull; her bows had been badly damaged by ice during her participation in the Northeast Polar Expedition to the mouth of the Kolyma in 1932-33 (Barr, 1979), and although

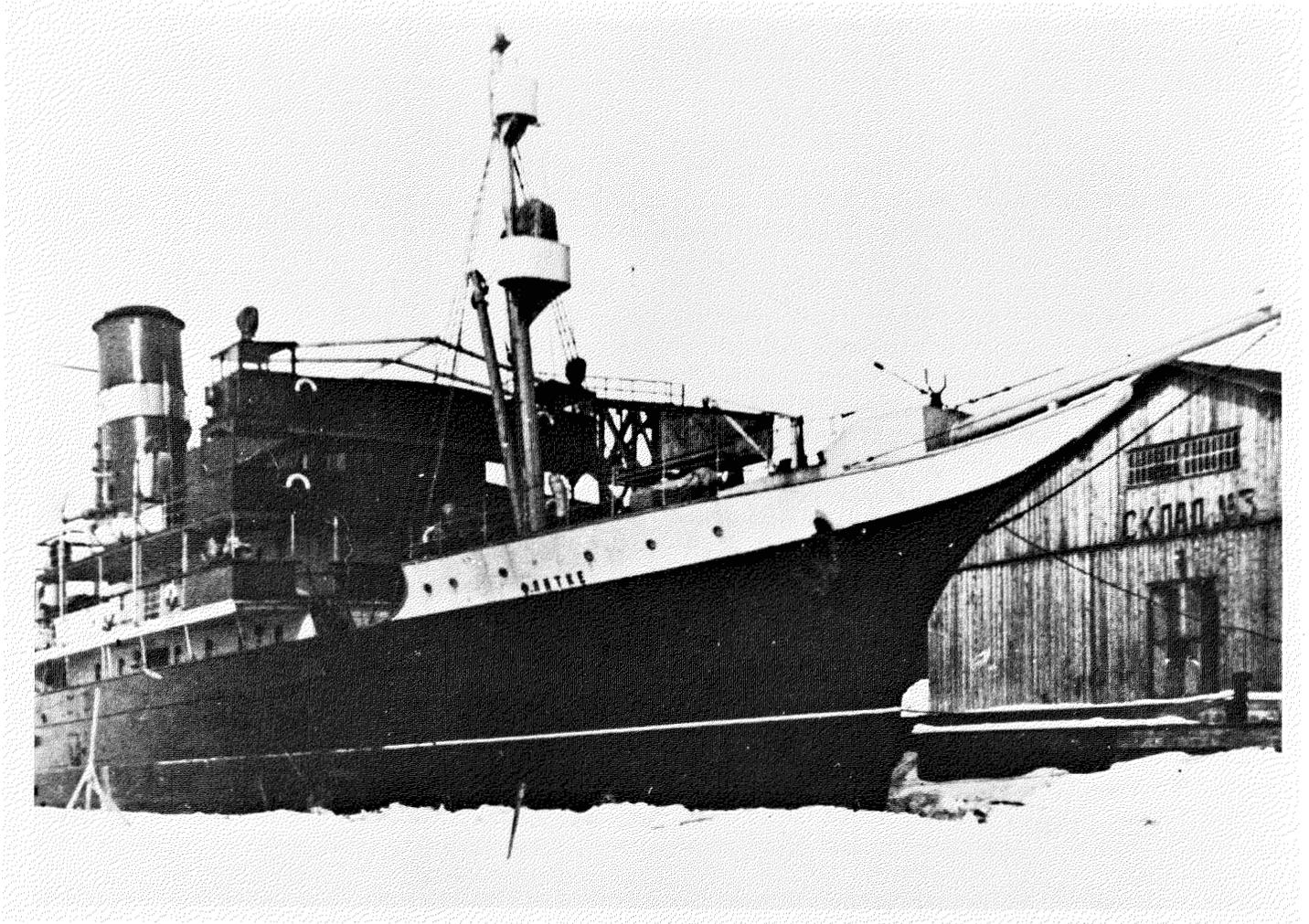


FIG. 3. The icebreaker *Fedor Litke*. (Photo courtesy of Mr. Edward Wilson, Burntisland, Fife.)

she had received a refit in Japan Nikolayev and his officers were extremely apprehensive as to the reliability of the repairs. Nikolayev was fully aware that *Yermak* was on her way east and was much better designed than *Litke* for this sort of task, but there was no way of knowing when she would arrive. The critical factor was that *Pravda* still had to unload at Nordvik (Vize, 1946).

In view of this Nikolayev decided to tackle the obstacle despite his ship's damaged condition. For five days *Litke* battered at the ice, carving a channel towards the trapped ships. With some of the impacts the ship's bell would even ring of its own accord. Progress was extremely slow, sometimes not more than 12-13 ship's lengths per watch; the ice was up to 3.5 m thick in places. *Litke's* bow was in no state to take this kind of punishment and the leaks became steadily worse. Holds and engine room were soon partially flooded despite constant pumping (Nikolayev and Sarankin, 1963).

While *Litke* was still several kilometres from the trapped ships Professor Vize invited Urvantsev, his wife and three others to walk out to the icebreaker for a meal (Urvantsev, 1978). The occasion was marred somewhat by a discovery

they made on their way across the ice: a human skull with a half-rotted hat was found lying on a pressure ridge. The mystery of Yeliseyev's disappearance was solved.

At 5:30 a.m. on 17 August *Litke* reached the trapped ships: five days to cover 10 km. But it was a hard-bought victory. A damage report requested by Nikolayev revealed several long cracks in the bow, several bow plates loosened, and one section of plating torn away. Once the engineers had made temporary repairs, *Litke* broke the freighters free, then without incident led them out to open water by the channel she had carved with such effort (Vize, 1946).

Here the ships separated. Escorted by *Litke*, *Tovarishch Stalin* headed west for Proliv Vil'kitskogo and Arkhangel'sk; *Volodarskiy* headed for Tiksi to load coal in order to bunker the ships of the Second Lena Expedition, while *Pravda* proceeded first to Bukhta Marii Pronchishchevoy to retrieve the fuel and boats she had had to jettison there. Then she headed for her initial destination, Bukhta Nordvik, once again.

Professor Vize had supplied Urvantsev with a chart of the detailed soundings of the bay and its approaches. This showed clearly that by approaching from the west via

Khatangskiy Zaliv, *Pravda* could easily get to within 60-100 m of the shore at Solyanaya Sopka, the expedition's goal. Using the chart *Pravda's* captain managed to achieve precisely this. *Rusanov* had already arrived with a new crew of drillers. The half-tracks were offloaded immediately and all the cargo ferried ashore using barges lashed in pairs. By 8 September the job was done and *Pravda* started for home (Urvantsev, 1978). She was among the last freighters escorted through steadily thickening grease ice and pancake ice in the southern part of the Kara Sea (Sorokin and Lur'ye, 1951).

Drilling at Nordvik over the next few seasons revealed small, shallow oil pockets in connection with salt structures (Urvantsev, 1978) but thus far they have had no commercial significance. However the salt itself has been worked on a fairly massive scale from the 1930s onwards, this being an important source of supply for the north, especially for the northern fisheries (Belov, 1969). Although the original prospects for oil at Nordvik did not in fact materialise, there can be no doubt that the early experience gained here in exploration for hydrocarbons within the continuous permafrost zone is now proving invaluable in the exploration and exploitation of the massive oil and gas fields of Western Siberia.

With regard to the Northern Sea Route operation, from its rather inauspicious start in 1933 the Lena expedition became an annual operation involving considerable numbers of ships and large volumes of freight. Such details as are available have been documented by Armstrong (1952) and Belov (1969). Most importantly, as mentioned earlier, the movement of goods to the Lena River via the Northern Sea Route has recently acquired new emphasis in an attempt to rectify the bottlenecks which have developed at Ust'-kut and on the upper river.

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