

Sailing in the Soviet Arctic

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The Soviet Union purchased the largest consignment of slurry pumps in the history of the Ingersoll Rand Company of the USA, and brought this cumbersome equipment all the way up to the 69th parallel. This is regarded as a big achievement by John Ambandos, a representative of the manufacturing firm, with whom I talked in Norilsk, a major Arctic industrial center.

In general, 1979 will go down in the history of Arctic navigation as conspicuous for the inauguration of year-round sailing over a long stretch of the Northern Sea Route, from Murmansk to Dudinka.

For many regions of Siberia and the Soviet Far East, this is the sole, vital avenue for delivery of large consignments of goods. The waterway was broken as part of

the Soviet long-term program for the development of natural resources of the Far North and the buildup of industry along the Arctic coast, ranging from the Kola Peninsula in the west to the Chukchi Peninsula in the east.

"Whoever masters distance will master the North." This expression is repeated frequently by Soviet economists. But it was not so easy mastering distances in the North. The tough Arctic ice ruined many expeditions, some of which managed to return on their own, others had to be rescued, and still others remained in the "white silence" forever. A dear price was paid for the acquired experience, which in the final analysis, on the basis of consistent exploration and experiments, made it possible to gradually extend the period of Arctic shipping.

The "keys to the Arctic" remained elusive until the icebreaker fleet came into existence. It helped to prolong the navigation period up to

100 days at the start of the 1940s.

A new step was taken in 1959, when the Arctic's acquaintance with the world's first atomic icebreaker, the 44,000 hp Lenin, took place. A period of active polar navigation was ushered in.

It was the first time in world history that motorized cargo ships began sailing through ice fields more than five feet thick, in the typical conditions of a severe Arctic winter and polar night. Each voyage called for great courage and justified risks on the part of the crews. Suffice it to say that it required another 30 years to extend the navigation season to 200 days.

But soon afterwards, the pace of development of the nonferrous metallurgical plants in the Norilsk area, and the start of work around the northern oil and gas deposits made it necessary to open the Northern Sea Route all year round. The pioneer atomic icebreaker was joined by two more, the Arktika and the Sibir, each

having 75,000 hp engines.

But although this trio could plow through ice 13 ft. thick, their displacement prevented them from sailing through the Yenisei River. River ice is twice as tough as sea ice. The river ice was broken with the help of deep-draft diesel-electric icebreakers of the 22,000 hp Kapitán Sorokin type, which led the cargo-laden ships up the river.

The inaugural year-round navigation success in 1979 was accomplished in the worst ice-field conditions. Last winter was terribly cold, and by mid-season the ice everywhere on the Yenisei was 12-16 in. thicker than usual. As a result, some transports became stranded en route to Dudinka. Some of the ships, however, made it to the port without a hitch, which proved that the Murmansk-Dudinka line was also navigable throughout the long polar night.

It has been estimated by experts that year-round navigation will have a great economic effect. In Norilsk

alone, where a second big Nadezhdinsky mining and metallurgical plant is going up now, the amount of money saved in cargo transportation may add up to nearly 50 million rubles in 1980. (Note: one ruble equals \$1.50 U.S.)

Arctic shipping is impossible without reliable scientific support. The most efficient way of receiving information on Northern Sea Route conditions today is via artificial Earth satellites and ice reconnaissance aircraft.

But all this, naturally, will require a renewed effort. Shipping experience in 1979 has especially shown that, in order to overcome the rigors of the Yenisei winter, more powerful icebreakers will be needed for river conditions as well. The experts believe that this assignment could be handled by deep-draft atomic icebreakers having 35,000-40,000 hp. The experience gained by Soviet shipbuilders indicates that this job can be done easily.