A REPORTER AT LARGE DECEMBER 24 & 31, 2012 ISSUE

POLAR EXPRESS

A journey through the melting Arctic, with sixty-odd thousand tons of iron ore.

By Keith Gessen

December 16, 2012

The view from the deck of the Nordic Odyssey (with the tugboat the Vengery in the foreground), as the ship sailed from Murmansk, in Russia, to Huanghua, in China, in July. Because the extent and thickness of ice during the Arctic summer have diminished in recent years, the Northeast Passage—for centuries an obsession of explorers—could soon become an everyday part of merchant shipping. By the middle of this century, it may be possible to traverse the North Pole in a canoe. Photographs by Davide Monteleone / VII

The ice-class bulk carrier Nordic Odyssey docked at the port of Murmansk, Russia, just after six in the morning on July 5, 2012. It had a green deck and a red hull, and was seven hundred and thirty-eight feet long, a hundred and five feet wide, and a hundred and twenty feet from top to bottom; empty, it weighed fourteen thousand tons. It was an eighty-story building turned on its side and made to float. The Odyssey had come to pick up sixty-five thousand tons of iron ore and take it to China via the Northern Sea Route—through the ice of the Arctic seas and then down through the Bering Strait.

Murmansk, which rises along one bank of a fjord thirty miles south of the Barents Sea, is the world's largest city north of the Arctic Circle, and yet as soon as a visitor got past harbor security, at the gate, the city disappeared. The pier was covered by huge mounds of coal and iron ore. Train cars kept pulling in with more; tall yellow cranes dipped into them and deposited the ore onto the mounds, and then the train cars pulled out again. It was as if Russia were coughing up her insides. The cranes' grabs could barely squeeze into the rail cars. The deep, rumbling sounds of steel on steel echoed in the quiet of the fjord.

The Odyssey is owned by a Danish shipping company called Nordic Bulk. In 2010, the company was asked to get a load of ore from Norway to China. The normal route would be either south through the Suez Canal or even farther south, around the Cape of Good Hope, but the Suez route would take you by the coast of Somalia, home to the world's most enterprising pirates, and the Cape Hope route would take too long. Mads Petersen, the co-chairman of Nordic Bulk, wondered if there was another way. As it happened, the shortest route from Norway to China was through the Arctic. "And I thought, Maybe the Northern Sea Route has opened up, because of global warming," Petersen said, recounting his thought process

two years later, in Murmansk. He is just past thirty, gregarious, and big—six feet two, and two hundred and sixty pounds. I said, "You started going to the Arctic because you read an article about global warming?"

Petersen shook his head. "In Denmark, you do not 'read an article' about global warming," he said. "You hear about it, all the time."

Petersen contacted Rosatomflot, the state company that owns Russia's six nuclear icebreakers (the largest such fleet in the world), and made a deal to send his cargo through the Arctic with an icebreaker escort. The price was three hundred thousand dollars, but the projected savings in fuel and time would make up for it, and then some. Moreover, it was an adventure, and it even had a patriotic appeal. Vitus Bering, the man who, in 1728, discovered the strait between Russia and America, was a Dane.

While in port, the Odyssey was less an intrepid ship and more of a floating warehouse. A metal gangway connected it to the pier and was watched at all hours by two members of the crew. It was important that nothing extra be allowed to get on board (drugs, for example, or tanks) but that all the proper things (maps, food, cigarettes) did. Most important of all was the iron ore. It had to be loaded as efficiently as possible, in the ship's seven deep cargo holds, but also as evenly as possible: nothing can take a ship down faster than its cargo, improperly loaded. There was also the depth of the water to keep in mind. Fully loaded, the Odyssey would have a draft—the plumb distance from the waterline to the keel—of forty-three feet; at the pier, the water, at low tide, was forty-two feet. Thus the ship had to load up at high tide and then leave.

Petersen spent two days in Murmansk and then flew back to Copenhagen. The responsibility for loading the Odyssey fell on its chief mate, Vadim Zakharchenko. He was a short, broad-shouldered man with red hair and freckles; in his dark jumpsuit, he resembled a small bear. A native of the old

port city of Odessa, he spoke Russian with a surprising Yiddish lilt—a legacy, he said, of his many Jewish classmates. On the early morning of July 9th, the Odyssey's last day in port, he was in a foul mood. The stevedores had told him that they weren't going to get to sixty-five thousand tons of iron ore in time. In fact, Zakharchenko reported to Igor Shkrebko, the captain of the Odyssey, "They say we'll be lucky to reach sixty-four." At current shipping prices, a thousand fewer tons would put Nordic Bulk down between twenty and thirty thousand dollars: an inauspicious start to the trip.

The captain was a tall, thin man, still youthful in his mid-forties, with curly, graying hair and black eyes. During the stay at Murmansk, his young wife had come up from their home town of Sevastopol to visit; while most of the crew stayed on board, the Shkrebkos had walked around town and taken lots of photographs. In any case, cargo loading was the chief mate's job. "Akh!" Zakharchenko finally said. "They'll throw what they throw!"

For the rest of the morning, he scampered among the cranes and dockworkers, balancing two conflicting imperatives: that the cranes load the ship in record speed, and that the hills of iron ore remain evenly distributed throughout the holds. The tall yellow cranes worked with urgency, picking up six or seven tons of ore from the mounds piled on the dock, swinging over the cargo holds, then releasing the ore with a swoosh. As a light rain began to fall, Zakharchenko several times climbed down a rope ladder to

the lee side of the ship to check how far it had descended into the water. Each centimetre represented sixty-seven tons; incredibly, this was the only way to measure how much ore the Odyssey had taken on.

High tide was at noon, and the ship could not stay at the pier any longer. At eleven-thirty, the cranes stopped loading, and fifteen minutes later all was done. According to an eyeball measurement of the ship's displacement, taken by both Zakharchenko and a surveyor hired by the Russian company that was shipping the ore, and a somewhat hurried calculation of the water density in the harbor, the Odyssey was now filled with sixty-seven thousand five hundred and nineteen tons of ore: two and a half thousand tons more than the target. The stevedores had underestimated themselves. Those stevedores now ran down to the dock and removed the ship's thick ropes from the bollards; then three small tugboats came alongside the Odyssey, two to push and one to pull the ship into the harbor. That night, as the sun dipped toward the horizon (though it would not set), we entered the Barents Sea. You could tell it was the sea because right away our ship, despite now weighing more than eighty thousand tons, started listing from side to side atop the waves.

Ahead of us, to the north and to the east, the ice was melting. This was normal. At its maximum extent, in mid-March, the ice covers the entire Arctic Ocean and most of its marginal seas for about fifteen million square kilometres, twice the land area of the continental United States. During its minimum extent, around mid-September, the ice cover traditionally shrinks to about half this size.

In recent years, it has been shrinking by much more than half. In September of 2007, the ice shrank to 4.3 million square kilometres, the lowest extent in recorded history. In subsequent years, it reached its second-, third-, and fourth-lowest-ever extents. The thickness of the ice—more difficult to

measure but also more telling—is also decreasing, from an average thickness of twelve feet in 1980 to half that two decades later. The primary cause of this decline is warmer air temperature in the Arctic, an area that has been more affected by global warming than any other place on earth.

The estimates vary, but scientists agree that at some point this century the minimum extent, at the end of the summer season, will reach zero. At that point, you'll be able to cross the North Pole in a canoe. But it won't be just you and your canoe, because the resource grabs have already begun. Denmark and Canada are engaged in a territorial dispute over Hans Island, which a recent congressional research report describes as a "tiny, barren piece of rock" between Greenland and Canada's Ellesmere Island, because territorial claims will lead to resource rights. Similarly, Russia has filed a claim with the United Nations that the Lomonosov Ridge, which spans the Arctic underwater from the coast of Siberia to Ellesmere Island, gives Russia rights to the sea above it, including the North Pole. All this is being done in anticipation of a thaw. Oil companies, armed with new technology and lured by less menacing winter conditions, will be able to establish drilling platforms in latitudes that were previously off limits, and shipping companies will be able to save time and money through the Arctic shortcut. Shell has already announced plans to begin drilling exploratory wells off northern Alaska. Last year, Rosneft, Russia's biggest oil company, signed a joint-venture agreement with ExxonMobil to proceed with oil exploration in the Kara Sea—once called Mare Glaciale, the "ice sea." Meanwhile, the Odyssey's trip was a test case for the proposition that the Northern Sea Route, formerly known as the Northeast Passage, could be reliably traversed.

The water of the Barents was a handsome dark blue, the sky was clear, and the temperature outside, though gradually dropping, was a balmy fifty degrees. Captain Shkrebko set our heading east for the southern tip of

the archipelago Novaya Zemlya; this put the ship at a better angle to the waves, and it stopped rocking. We were proceeding at an unimpressive speed, thirteen knots, but then again we never stopped. Three bridge crews of two men each, an officer and an able seaman, carried out four-hour shifts throughout the day and night.

The Odyssey had a permanent complement of just twenty-three men. The senior officers—captain, chief engineer, chief mate—were Ukrainian, as were the electrician and the second engineer; the rest of the crew was Filipino. The Ukrainians spoke Russian among themselves, while the Filipinos spoke Tagalog. Across the cultures, they spoke a rudimentary marine English. Otherwise, their contacts were limited. In addition to this permanent crew, there was a Russian "ice adviser," or pilot, named Eduard Cherepanov, who had been sailing these waters for almost twenty years.

Relations aboard the Odyssey were hierarchical and traditional. The captain, a native of the old naval city of Sevastopol, was the absolute authority. He was therefore a little isolated, socially, from the crew, and seemed grateful for the presence of Cherepanov, who had served as a captain and was therefore his social equal, and, more important, not someone with whom discipline needed to be maintained.

The chief mate, Zakharchenko, occupied an ambiguous position. On the

one hand, he was in charge of much of the day-to-day operation of the ship, and he was the only one on board who knew as much about ships and the sea as the captain. On the other hand, he was entirely at the mercy of the captain, not only on the ship but professionally: because the chief mate has no independent contact with the home office, the only way he'll ever get a captaincy is if he's actively promoted by his captain. Zakharchenko was a soft touch. He tried to present a stern face to the crew, but he stuttered when he was nervous, and when he wasn't nervous he couldn't help but make a joke of some kind. As he liked to say, "Am I from Odessa, or not?"

The two most senior Filipino crew members were Felimon Recana, the second mate, and Eliseo Carpon, the third mate. Both men were in their fifties, almost a decade older than Captain Shkrebko and Zakharchenko. The second mate was handsome and sarcastic, a born cynic; the third mate was gregarious and enthusiastic. I once saw him jump up and cry "Yes!" after winning a game of Spider Solitaire on the computer in the crew rec room.

Life on board the ship is mostly confined to the "accommodation," a yellow, five-story metal building that rises from the stern. The bridge is on the top floor; the bottom floor contains locker rooms for the men as they prepare to go on deck. The men's living quarters are spread through the second, third, and fourth floors. Each man has his own cabin, about the size of a college dorm room, with a small bathroom and shower. Everything is secured so that it doesn't go flying around the room during a storm. This battening down takes some getting used to. It's easy enough to understand why the mini-fridge is strapped to a hook in the wall and the back of the bathroom mirror has little compartments for your toothbrush and shaving cream, but it took me almost a week to realize that the drawers under my bed, which wouldn't open when I tried them, were not ornamental, as I'd decided, but just extremely sticky. I was able to move my clothes out of my desk.

Most of the men were on six-month contracts, with monthly pay ranging from eleven hundred dollars, for the mess boys, to around ten thousand dollars, for the captain and the chief engineer—pretty good money in the Philippines and Ukraine. The contract is the standard unit of experience in the trade; one says "My last contract" rather than "My last ship." A six-month contract may include as few as ten port calls and as many as several dozen. These reprieves are short, and growing ever shorter as improved port technology gets ships in and out faster, but the men are grateful for them, and can recite the price of girls in many ports across the world. The crew members had all received phone calls from their crewing agency in early April and taken over the ship from its previous crew, at the Irish port of Aughinish, in mid-May. So far, they'd brought soybeans from Quebec to Hamburg, and coal from Latvia to Antwerp. None of them had been through the Arctic before.

To be aboard a ship is to be constantly aware of everything that can go wrong. A ship can run into another ship—hard to believe when you look at how wide the ocean is, a little easier to believe once you consider that it takes the Odyssey almost two miles to come to a complete stop. A ship can be overtaken by pirates: Captain Shkrebko narrowly escaped pirates in the Gulf of Aden in 2007 (he was saved when an American military helicopter responded to his distress call), while the Odyssey's fourth engineer was on a ship that was hijacked off the coast of Kenya in late 2009 and held hostage for forty-three days. A ship can be compromised by its cargo, which may shift, forcing the ship off balance, or create other problems—Zakharchenko had with him an alarming color brochure called "How to Monitor Coal Cargoes from Indonesia," which warned that Indonesian coal had a tendency to catch on fire. The Odyssey's electrician, Dmitry Yemalienenko, had a short cell-phone video of a ship listing very hard to starboard in the Black Sea; it was carrying plywood, which had shifted en route. "Then what happened?" I asked.

“It sank,” Yemalienenko said.

Map by AJ Frackattack / MET OFFICE HADLEY CENTRE OBSERVATIONS DATASETS, metoffice.gov.uk / hadobs

Then there was the danger of running into something beneath the waterline. To avoid this, the ship carried a full set of hydrographic charts, most of them from the British Admiralty. But the charts are never complete, and the telex machine on the bridge kept up a steady patter of warnings. When we headed out into the Barents, there was a broken signal at 69°40’N, 32°09’E, a shipwreck at 69°52’, 35°16’, nighttime artillery fire at 70°15’, 33°38’, plus some fishing nets.

Finally, there is the ice. The books on the bridge of the Odyssey—arranged on shelves behind the navigation table, with little wood braces to keep them from falling out in heavy seas—were all in agreement on the subject of the ice. "It is very easy and extremely dangerous to underestimate the hardness of ice," "The Mariner's Handbook" cautioned. "Ice fields consisting of thick broken floes, especially those that bear signs of erosion by the sea on their upper surface, should be avoided. . . . Do not enter ice if a longer but ice-free route is available." "The Guide to Navigating Through the Northern Sea Route," published in English in 1996 by the Russian Ministry of Defense, put the matter more dramatically: "Any attempt at independent, at vessel's own risk, transiting the NSR, without possessing and using full information, and without using all means of support, is doomed to failure."

This seemed harsh. But the ice-strengthened cruise ship Explorer sank off the coast of Antarctica in 2007 after hitting ice. The shrimp trawler B.C.M. Atlantic sank near Labrador after hitting ice in 2000. Were the Odyssey to start sinking, there was a freefall lifeboat hanging three stories up and at a forty-five-degree angle from the stern, but Vadim Zakharchenko said he would rather drown; the boat is raised so far up that its impact against the water could knock out your teeth.

Seamen don't like to talk about the things that can go wrong at sea, but they love to talk about the things that go wrong on land. As we approached Novaya Zemlya, the Ukrainians started joking about radioactivity. The Soviets had turned Novaya Zemlya into a nuclear-testing site; while they were at it, they used the coast around it as a dumping ground for reactors from decommissioned nuclear submarines. The largest nuclear bomb in history, the Tsar Bomba, had been detonated here, in 1961. "Chernobyl is nothing compared to this!" Vadim announced.

On the evening of July 11th, we entered a thirty-mile-wide strait between the southern end of Novaya Zemlya and Vaygach Island, at

the entrance to the Kara Sea. The southern portion of the Barents that we had just been through is open to warm Gulf Stream currents, and it's rarely frozen even in winter. The Kara Sea is a different story. For years, no one could penetrate it. In the fifteen-nineties, the Dutch explorer Willem Barents was repeatedly foiled by the ice at the Kara Gates and decided at last to head north and seek a way around Novaya Zemlya. This was not a good idea. His ship became trapped in ice, and the crew was forced to abandon it and spend the winter on land. One evening in October, the sun set and did not come back up again for three months. The men battled cold, scurvy, and hungry polar bears. "In Nova Zembla," the chronicler of the journey wrote, "there groweth neither leaves nor grasse, nor any beasts that eate grasse or leaves live therein, but such beasts as eate fleshe, as bears and foxes." When the warm weather came, in June, the crew headed for the Russian mainland. Some survived; Barents died of scurvy on the way.

The failed Barents expedition took place during the late-sixteenth-century Dutch ascendancy on the seas. It followed failed English attempts to traverse the passage earlier in the century, and preceded some failed Russian ones. To be fair to these early explorers, their boats were made of wood, their maps were wildly inaccurate, they didn't know what a vitamin was, and they had no satellites to help them navigate the ice. Instructions from the London-based Russia Company to its early employees were notably vague: "And when you come to Vaygach, we would have you to get sight of the maine land . . . which is over against the south part of the same island, and from thence, with Gods permission, to passe eastwards alongst the same coasts, keeping it alwayes in your sight . . . untill you come to the country of Cathay, or the dominion of that mightie emperour." This was the state of the art in 1580. The dream was to reach China and its untold riches. But, after enough men had disappeared into the ice never to return, the Dutch and the English decided it would be easier to go to war with Spain and Portugal for the right to use the route around the south of Africa, and the

Arctic, for a while, was forgotten.

For the next nine hundred and fifty miles, the Russian mainland stretched upward into the Arctic, forcing us to head northeast through the Kara Sea. Only when we reached Cape Chelyuskin, at almost 78°N the northernmost point in Asia, could we turn southeast. And the farther north we got the colder it became. Out on deck, though the temperature was still above freezing, a chill northerly wind blew in our faces.

On the morning of July 13th, we crossed the seventy-fifth parallel; we had passed by the Yamal Peninsula, home to most of Russia's natural gas, and the mighty Ob and Yenisey Rivers. In recent years, these rivers have been discharging more fresh water into the Arctic seas, as warmer temperatures increase over-all precipitation in the Arctic water basin. Scientists anticipate that there will soon be more soil in the water, as the permafrost layer, underground, melts and the riverbanks begin to slide down. The Kara Sea was clear and cool, the air temperature thirty-nine degrees, the water temperature forty-one; not swimming weather, but nothing to make ice from, either.

Late in the morning, we entered a stretch of fog. We could see as far as the bow of the ship and not an inch farther. The captain turned on our foghorn. It emitted a deep, loud wail every two minutes, to let anyone in front of us know that we were coming. But the ice pilot thought this precaution was goofy. "We don't really need that thing, you know," he said to the captain.

"There's no one else out here." He was right. That afternoon, we were in radio contact with the two ships that were joining us in our convoy through the Northern Sea Route; one was a hundred and fifty miles ahead of us, the other a hundred miles behind. That afternoon, too, on our radar, we saw the only other boats outside our convoy that we'd encounter on the Northern Sea Route: the Geofizik and the Geolog Dmitriy Nalivkin—the ExxonMobil/Rosneft seismic expedition, searching for oil.

The next morning, we finally saw it: ice. It floated in isolated islands along the water. The islands were ten or fifteen feet in diameter, with a layer of snow on top, which protruded from the water by about a foot; beneath the water, you could see the ice, a few feet down and widening toward the bottom before narrowing again, like a teapot. These ice floes were on their way out of this world: there were still two months left in the melting season, and already the floes looked the worse for wear. The water lapped at their corners. In the middle of some of the floes, little green pools, known as "melt ponds," had formed in the snow. Unlike the white snow cover, which reflected sunlight back into the atmosphere, the puddles absorbed it. The sunlight was slowly drilling a hole in the ice under the puddles; if it managed to create a hole all the way down to the water, the water would have a toehold inside the ice to begin its destructive work.

They were a strange sight, these islands of ice, in the middle of the sea. The lookout on the Barents expedition, when he first encountered the ice, exclaimed that he saw swans. Our crew was equally amazed. Many of the younger men were immediately on deck with digital cameras and cell phones. Eliseo, the third mate, who'd been going to sea for twenty-five years, was especially moved. "My first time," he said.

A few hours later, we reached the rendezvous point with the icebreakers: the Vaygach, beige and black, and the Yamal, red and black. They were not as

long as the Nordic Odyssey, but they were stouter and, with their nuclear-powered engines, significantly more forceful. They had shallow-angled bows that allowed them to climb atop ice and crush it with their weight. A shallow bow must have felt insufficiently aggressive to the builders of the Yamal, however, for they had painted on it a set of big red jaws.

A Norwegian tanker, the Marilee, its deck covered with a tangle of pipes by means of which it kept its various liquids separate, was also waiting for us at the rendezvous point, and in the middle of the afternoon a five-hundred-and-seventy-foot Russian cargo ship, the Kapitan Danilkin, caught up with us as well. Off we went into the ice. We were now approaching the tip of the Taymyr Peninsula, Cape Chelyuskin, named for the explorer who reached this spot by land in 1742. Halfway between Murmansk, to the west, and the Bering Strait, to the east, it was one of the most obscure places in the world; Severnaya Zemlya, a large archipelago just thirty miles north of the cape, was not discovered until 1913—the last major piece of undiscovered land on earth. The ice we'd seen earlier was scattered and melting; this ice was thicker and packed closer together. We followed the Yamal at a distance of about half a mile; the Vaygach was behind us, followed by the Marilee and the Kapitan Danilkin. We were soon joined by a small red tugboat, the Vengery, which took its position directly behind the Odyssey.

Charts on a table on the navigation bridge. The crew included a temporary "ice pilot," with particular experience in Arctic waters.

Captain Shkrebko, who until this point had mostly been taking photos with an expensive camera, walking around in sneakers, and generally looking more like a club tennis pro than like a sea captain, was now fully engaged, giving minute instructions to Able Seaman Ronald Segovia, who was at the wheel. The captain and the ice pilot had both got up in the middle of the night, at the first sight of the ice, and were still up, twenty hours later. Their job was to maintain radio contact with the icebreaker ahead and help the young helmsman maneuver the ship in unfamiliar conditions. Shkrebko and Cherepanov also had to decide how fast to go. There was a booklet on the bridge, from the Central Marine Research and Design Institute, in St. Petersburg, indicating the proper speed for an ice-class vessel through varying thicknesses of ice; the thicker the ice, the slower the ship should

travel, so as not to damage its hull. But determining the actual thickness of the ice was an inexact science, and the ice pilot's contribution was primarily a counsel to remain calm.

"Take it down to six?" the captain would ask the pilot as they looked at one of the booklets, referring to six knots, or about half-speed.

"Eight is probably fine here," the ice pilot would say, and we'd go to eight.

I put on a winter coat and hat and walked to the bow. It was a cold day and overcast. About twenty feet above the water, I watched the ship smash into the ice. Even after getting worked over by the Yamal, some of the ice pieces were big, six or seven feet thick and thirty or forty feet across. But we were bigger. Sometimes the ice simply cracked in two as soon as we collided with it, and then fell away to our port and starboard. At other times it remained intact, trying to stop us, sometimes climbing the bow as we pushed it backward. Occasionally a large piece would seem to have some traction, but the Odyssey was just too strong. Eventually the ice floes slithered off to the side. After we'd made it through the first ice field, the captain went down to the bow, too, and looked over the side. "Not even a scratch," he reported. He did not go down there again.

Over the next few hours, and then over the next eight days, we saw an incredible variety of ice. Some of the bits were just a few feet across, some were hundreds of feet; some were gray and even black, covered in grime, the way snow gets in New York after a few days. Some of the ice floes bobbed up and down in our wake; others remained proudly immobile. A few times, the ice was so thick, and the icebreaker broke it so cleanly, that it came up again on its side, looking like a giant slice of cake, with green and blue layers separated by thin lines of white. Sometimes a smashed ice floe would be submerged beneath the surface and then come up, the water rolling off its back as off a slowly rising whale.

It took the Odyssey nearly twenty-four hours to round Cape Chelyuskin and enter the Laptev Sea. The sun still hadn't set since we'd left Murmansk, and much of the time the skies were relatively clear. But the air temperature was now at freezing, and toward the middle of the afternoon, on July 15th, it began to snow.

As the trip progressed, I found myself spending more time with the chief mate, Vadim. Of all the men on board, he seemed the most ambivalent about his job, and the most philosophical. "This sun-filled prison," he said of the bridge. "A wonderful people," he said of the Jews of Odessa. "They've all left. And I alone in that whole city to carry on their memory."

Vadim's mother was a schoolteacher and his father an electrical engineer on a ship in the Soviet merchant marine. Young Vadim worshipped and feared his father. "He would come home from sea and you could just feel the aggression in him," Vadim said. "Then after two weeks he'd go back to normal." Seamen were a privileged category of Soviet citizen in that they could travel abroad, and Vadim, too, wanted to travel. He got his wish. In more than twenty years at sea, he has worked on passenger ships, refrigerator ships (reefers), oil tankers, and all kinds of bulk carriers, or bulkers. He likes to talk about music, soccer, and citizens of Odessa who have become wealthy, but his favorite topic is how sick he is of the sea. "You think it's beautiful," he would say as the sun came out from behind a cloud and shone on the blue clear water, lightly chopped by the wind. "I used to think it was beautiful, too. Now I can't even look at it."

Vadim has other regrets about his career. "I became chief mate too late," he told me. "I was thirty-five. At that age, some people are already captains." Vadim was a captain just once in his career. He had joined the crew of a Greek bulker in South Korea, which set out for Seattle to get yellow corn. Before the trip began, he had a bad dream: he was naked, and when he looked down he saw that he was a woman, not a man. A bad omen. A week

into the trip, the captain said he had a pain in his side. By the morning, he had died. Vadim was now acting captain of the ship, and he called the home office, in Athens. “The Greeks asked me if I had a captain’s license,” he said. “If I’d had one, I think they would have told me to keep going. Imagine showing up in the U.S. with a body on board? I’d have spent weeks filling out paperwork. I’d probably still be there!” In the event, Vadim did not have a captain’s license. The ship returned to South Korea, a new captain flew in, and Vadim went back to being chief mate.

The sailors’ dining room, which is separate from the officers’ dining room. In life aboard ship, boredom is an ever-present problem.

Vadim has a lightning-quick mind for arithmetic and a fondness for record-keeping. He has a folder on his laptop called “1,001 Songs,” containing his favorite songs from all over the world, with not a single artist repeated. He

keeps statistics, independently of the newspapers, for the Odessa soccer club, the Chernomortsi, and he sometimes has occasion, when he's on land, to send a correction to the papers when they've made a mistake. He has a file, called "History," in which he lists every country he's ever visited, every major canal he's passed through, and every time he's crossed the equator. Vadim is forty-three, divorced, and has a daughter in college. He keeps a color-coded chart, month by month since 1993, of when he's been home in Odessa, and when he's been at sea. The chart indicates that he's been at sea for twelve of his last twenty birthdays. In most of his photos from home, the chief mate is drunk.

On July 15th, in the Laptev Sea, Vadim was in mid-sentence on the bridge when he suddenly stopped, walked over to a pair of binoculars, and looked through them north-northeast. "Iceberg," he said. I thought he was kidding. The third mate, Eliseo, had taken to saying "Titanic" to me every time we saw a more or less healthy piece of ice. But Vadim wasn't kidding. About eight miles from us, well out of our way but within sight, a giant piece of ice sat regally in the water. It had most likely calved off one of the glaciers on Severnaya Zemlya. Vadim estimated that it was about sixty-five feet high and perhaps three hundred feet long.

We continued on our way through the Laptev Sea. In September, 2007, when the ice receded to what was then its all-time minimum, the Northern Sea Route was still very difficult to navigate, because a three-hundred-mile belt of drift ice remained bunched up in the Laptev. But now the Laptev was nearly empty of ice.

Each day, we received reports on weather and ice conditions in the Arctic, but aside from that our information was limited. We had no Internet access aboard the ship. The captain was able to send and receive e-mails from a computer on the bridge, and others were theoretically allowed to send

e-mails from the same computer, with the captain printing out the replies and slipping them under your door, but none of the crew members seemed to avail themselves of this service. Contact with home was confined to the satellite phone in the ship's office, which charged fifty cents a minute. "It's hard without the Internet," Vadim said. "You don't know who got blown up, who got assassinated. A few years ago, I came home and it was months before I found out that Yeltsin had died!"

Some of the crew wanted news of their families and called home weekly; some did not. The second mate, Felimon, claimed that he never did. "If I call from sea and there is problem," he said, "and then I call from port—it is same problem. There is nothing I can do." Able Seaman Edison Vocal told a story about a friend from a previous contract. The friend had received word from home that his wife was seeing someone else. For several weeks, he kept himself from calling—what was he going to do, out at sea?—but finally he called. His daughter answered. Mommy had a guest over, she said, and couldn't come to the phone. Edison's friend became depressed. He stopped eating. Then he jumped overboard. The ship went back and found him, but that was the sort of thing that could happen if you called home.

The crew entertained themselves as best they could. At 6 P.M. each day, four of the Filipinos would play doubles Ping-Pong in the gym. The level of play was erratic. The mess boy, Reynaldo Dalinao, the youngest crew member, always tried to slam the ball, with mixed success. Ordinary Seaman Michael Arboleda, whose day job mostly consisted of washing the ship and who was tall and broad-shouldered and always wore a basketball jersey with his last name on it (his cousin is a professional basketball player in Manila), tended to hit the ball casually into the net, then laugh. The star player was the third mate, Eliseo, who used a strange, possibly experimental grip, placed the ball wherever he pleased, and waited to pull you out of position. This was unquestionably the most fun I ever saw the crew have.

Mealtimes were at 7 A.M., noon, and 5 P.M. All the Filipino crew who weren't on shift would fill up the crew mess tables and eat and talk—though they rarely tarried over their meals, sometimes wandering over to the TV at the other end of the room if they had time to spare. The officers' dining room was different. Reynaldo, the mess boy, set out everyone's food—usually some form of cabbage soup, followed by fried beef and potatoes—and covered it with plastic wrap. The Ukrainians came and scarfed it down when they could, almost always alone. At most times of the day, you could find four or five plastic-covered meals sitting on the tables in the officers' dining room, growing cold.

In the evenings, a group would gather in the crew rec room to watch an American action film, though the Manny Pacquiao–Timothy Bradley fight, which ended in a controversial decision for Bradley, was also popular. The crew had learned about the decision in Hamburg, then bought a DVD in Antwerp. The third mate had seen the fight about six or seven times, by his estimate, whereas Able Seaman Generoso Juan had seen it "every time," which he believed was closer to a dozen. The Ukrainians, meanwhile, all had their own laptops and tended to stay in their cabins in the evenings and watch Russian television serials that they had downloaded from the Internet before shipping out.

At 75 degrees latitude, the circumference of the earth is a quarter what it is at the equator, which means that one's time zone changes every

two hundred and sixty-nine miles. On the Odyssey, the ship's time was at the discretion of the captain, and in a sense it didn't much matter what the local time was, since the sun never set. But the captain figured that it would be better to adjust the clocks gradually, by increments of an hour, than to move them ahead eight hours when we finally reached the Bering Strait. And so one slowly lost a sense of what time it "actually" was, somewhere else. The ship's time was the only time that mattered.

On July 17th, as we passed north of the New Siberian Islands (where nineteenth-century explorers had found well-preserved mammoth remains) and entered the East Siberian Sea, our captain turned forty-five. Toward evening, the Ukrainians and the ice pilot huddled into the captain's cabin for a small party. The captain opened some pickled vegetables he'd picked up in Murmansk, and Reynaldo brought up some bread and cheese from the galley. The ship's ban on alcohol was temporarily lifted, and we drank to the captain's health.

The captain came from a long line of captains. His grandfather had been a captain in the N.K.V.D., and his father was a captain in the Soviet merchant marine. Young Igor began his career on a reefer, off Antarctica, as Soviet fishermen harpooned their last whale before the international ban on whaling went into effect, in 1986. After the Soviet Union fell apart, he'd remained with the old company. Those years were full of adventures, as Ukraine sold off its inheritance from the U.S.S.R. While still in the employ of a reefer company, Shkrebko towed an old warship to Turkey. A few months later, the authorities called him in: "They said, 'You sold a warship to Turkey.' I sold a warship to Turkey? 'I was hired to tug a ship to Turkey. Here's the contract. It went out of Sevastopol port in full view of your military, with all the proper papers and permissions and everything. I sold it?' " Eventually, there was nothing left to sell. Shkrebko began his first contract with an international shipping company in 2000. He was given his

first command in 2006.

The other men had similar stories, which they told when the captain—who didn't necessarily like other people talking when he was talking—was distracted. They had been to hundreds of ports among them; they had met women from all over the world, had wooed them or paid them; they liked working for better money, for an international company, and with a mixed crew. (With an all-Soviet crew, there was always too much drinking: "At first, it's fine, but then guys start hitting each other in the face," Vadim said. "Then they wake up and can't remember who hit who in the face. It causes problems.") But they missed the Soviet merchant marine. The pay was worse but the friendships lasted longer. And the crews were co-ed. There was never any trouble finding companionship aboard the Shota Rustaveli or the Maxim Gorky.

Later that night, I went down to the galley to get a drink of water. Someone was watching an adult movie in the crew rec room. On my way back up, I ran into Vadim coming out of the ship's office. The crew's satellite phone was in there, but whom would he have been calling? He was estranged from his ex-wife, and I knew he didn't have a steady girlfriend. The next day, he admitted that he'd been calling a friend in Odessa to learn the latest scores of his beloved soccer team, the Chernomortsi.

The Russians, led by Vitus Bering, mapped the contours of the Northeast Passage, largely by land, in the seventeen-thirties and forties, but it was only in 1878-79 that anyone sailed the entire route, and it wasn't until the summer of 1932 that a ship, the icebreaker Sibiryakov, made the navigation in one season. Steel and coal, not high atmospheric concentrations of carbon dioxide, were what initially conquered the ice.

But what was happening now was unprecedented. When Mads Petersen, the co-chairman of Nordic Bulk, first sent his cargo of iron ore from

Norway through the Arctic, in 2010, he had done so in September, the month when the ice is at its minimum; he did so again in 2011. Never before had he sent a ship in July. But we were making decent time. And when the Odyssey came back through here, in August, there would be less ice. When it came back again in September, there would be hardly any ice at all.

Yet Mads Petersen was the only person I talked to in the Arctic who believed in man-made global warming. The deputy head of Rosatomflot smiled when I asked him about it ("This stuff is cyclical"), and so did my friend Vadim, who thought that the theory of global warming was a Western hoax. Captain Shkrebko conceded that monsoons had grown stronger in recent years, and that the tides and currents he encountered were not the ones indicated on the British Admiralty charts, but that was as far as he would go. And the ice pilot, Cherepanov, claimed to be especially tickled at the thought that the earth was warming and the ice was melting. "So the U.N. did a study, huh?" he kept saying of the 2007 I.P.C.C. climate report, which I had made the mistake of citing. "Well, if the U.N. says it's true, it must be true." I gave Vadim a copy of a book I had brought with me about global warming, but I don't think his English was up to it, and it lay unread on the bridge until I took it back to my cabin.

Post-Soviets tend to be skeptical about global warming. But there are notable exceptions. Earlier this year, Vladimir Putin hosted a team of scientists from the Vostok Research Station, Russia's leading research station in Antarctica. In the nineteen-eighties, researchers at Vostok were

the first to extract an ice core covering a full glacial-interglacial cycle, which was crucial for confirming the hypothesis that carbon-dioxide levels and temperature are connected. So when President Putin asked Vladimir Lipenkov, from the Arctic and Antarctic Research Institute of St. Petersburg, whether the scientist really believed that human-made greenhouse gases were a significant factor in global climate, Lipenkov did not back down. “No one denies that,” he said.

“No, no,” Putin said. “There are experts who believe that the changes in the climate are unrelated to human activity, that human activity has just a minimal, tiny effect, within the margin of error.”

Lipenkov’s answer was categorical: “It is not within the margin of error. If you look at the last five hundred thousand years, according to the data from Vostok Station, it turns out that the level of carbon dioxide and the change in temperature are correlated; that is to say, they have always moved practically together. Right now, according to atmospheric measurements, the level of carbon dioxide in the atmosphere is significantly higher than at any time in the last five hundred thousand years.”

In the East Siberian Sea, we encountered a different kind of ice from any we’d seen before. It was thicker and older, and, most impressive of all, it stretched north as far as the eye could see. The ice we’d encountered thus far was drifting along—it had become detached from the great polar ice pack—whereas the ice here was part of the pack, and it looked almost like land. It wasn’t, of course, land, and in fact it wasn’t even stable; all the ice in the Arctic, since it lies atop the ocean, is subject to the currents of that ocean, and is therefore always in motion. Because of the Transpolar Drift—which takes ice from the Russian side and past the Pole, where it eventually floats by Greenland and into the Atlantic—the oldest ice in the Arctic is rarely more than ten years old.

But this system has been here continuously for millions of years, developing during that time a complete ecology, from the algae that bloom underneath the ice and the copepods that thrive on its edge, to the cod that eat them, to the seals that eat the cod, to the white bears, kings of the Arctic, whose great paws have widened over time so the bears can walk on ice that would seem too thin to support their weight. And, seeing the ice that is at the center of this ecosystem, we smashed right into it.

We went slowly, at times very slowly. Looking out, you'd have thought we were in a snow field—it was white in all directions, save for the black-and-red stern of the Yamal. It was now clear that we would make it through the ice. We were just too big not to. Yet at some point in the East Siberian Sea I began to hope that we would lose. Here was a landscape that we were simply causing to disappear. We carried sixty-seven thousand tons of iron ore. Add to this about thirty-seven thousand tons of coking coal, some limestone, and a lot of heat and you could forge about fifty thousand tons of steel—enough steel for three ships just like the Odyssey. And each of those ships would beget three more ships. We would breed ships like rabbits, and I wondered why. The owner of our ship, Mads Petersen, was in daily e-mail contact with our captain, and one time he called the satellite phone on the bridge to say hello. "Mr. Mads!" Captain Shkrebko exclaimed into the phone, and eventually passed the receiver to me. Petersen asked, Was it a great adventure? Yes, I said, it was a great adventure. And the ship, I added, was a powerful ship, which needed to fear no ice. "Yeah," Petersen agreed. "It's a lot of steel." He didn't yet know where we were docking in China, but he was pleased that the ship was on its way.

I found it impossible to dislike Mads, who had sent us on this journey as much out of curiosity as cupidity, and who was not blithe about the circumstances. "On the one hand, yes, more shipping," he had said in Murmansk. "On the other hand—global warming." But I found now that I wanted him to fail, to be turned back, to have to address the next Arctic

shipping conference he attended with a tale of woe. It was hard to see how this could happen. The only thing out here as big as us was the lonely iceberg we saw in the Laptev Sea.

Vadim Zakharchenko (top left), the chief mate aboard the Nordic Odyssey. The chief mate is in charge of much of the ship's day–to–day operation, and of the loading and unloading of cargo. Above, Able Seaman Edison Vocal.

On July 20th, we reached Pevek, a small, sad port city in far northeast Russia, and parted ways with the cargo ship Kapitan Danilkin and the icebreaker Yamal. With the Vaygach in the lead, we continued eastward, now much closer to the shore, which was hilly, green, and snowy. This was Chukotka, land of the Chukchi. When the Swedish professor A. E. Nordenskiöld, the first man ever to complete a passage through the Northern Sea Route, met the Chuckchi people, in 1878, he found that they knew no Russian but could count to ten in English. They had more contact with the American whalers who had started coming through the Bering Strait than they did with the Russians. We were pretty far east.

I spent hours looking for polar bears. The bears were white, and the ice cover was white, so they weren't going to be easy to see. One night, Vadim saw a walrus in the water and took a blurry photo of him. But bears do not typically hunt walrus, which are as big as bears and have huge, scary tusks. Bears prefer the smaller ringed seal. In recent years, as the ice has started melting earlier and receding faster, polar bears have been missing their chance to get on the ice for their summer hunting, and been forced inland, close to human beings, where they have a tendency to get shot.

I was beginning to count the days. I enjoyed not having to check my e-mail, but I wanted a beer and I was tired of the ship's loose-leaf tea: in the absence of a strainer, the leaves inevitably got into my mouth. Even the ice—so remarkable, so perishable—was starting to be a bit much. "O.K., we saw the ice, it was interesting" is how Vadim summed up the feeling. "But enough is enough." If it had been more difficult; if it had been more dangerous; if the passage were not already, in some ways, routine, perhaps we would have felt differently. I had lunch with Dima Yemalienenko, the electrician, and announced to him my view that we were just twelve days

from China. (This turned out to be optimistic.) Dima shrugged. "I don't count the days until there's a month left on my contract," he said. "So we get to China, so what? It's just another city. When there's a month left on my contract, then I'll start counting." Vadim, for his part, admitted that when he got home from a contract he usually went to see a shrink.

After Pevek, there were just three hundred miles until we emerged from the ice and rendezvoused with our sister ship, the Nordic Orion, but these were the slowest miles of all. It took us two long days to cover them, and the crew entered a kind of fugue state. There would be short periods of reprieve, and then the ice would appear before us again, looking like a jetty or even a coast. One morning, I woke up at around five because it seemed to me that we had stopped. I went up to the bridge and, sure enough, we were trapped amid several large ice floes. The Vaygach had turned too sharply and we hadn't been able to follow. Vadim and the ice pilot and the captain were all on the bridge; they looked exhausted but also, somehow, relieved. One of the worst things that could happen to a seaman in the Arctic—we were, technically, beset—had just happened, but it wasn't so bad. Not far from here, in 1879, the American Jeannette expedition, which sought to reach the North Pole, became trapped in the ice. It then drifted northwest on the ice for a year and a half before finally being crushed: "It looked like a staved-in barrel," one witness said. The crew, of thirty-two men, managed to get off the ship and onto the ice, with three small boats and some provisions, and then made their way to the Siberian mainland, but one of the boats sank, while the two others became separated, and only thirteen crew members survived. This would not happen to the Odyssey. The Vaygach turned around to extricate us, but we kept our twenty-foot propeller going, and eventually our immense mass got the better of the ice, which slipped off to the side. I wondered what the crew of the Jeannette would have made of us.

Late in the evening on July 21st, two days from the Bering Strait, there was

a radio message from the Vaygach that I didn't catch. The ice pilot was on the bridge, and he moved quickly to pick up a pair of binoculars. He said, "Bear."

At first, we couldn't see it. Then there it was: a small bear, not a cub but not fully grown, either, about the size of a very large dog, and a little more beige than I'd expected. The creature was running along the ice, occasionally falling into the little ponds that formed in it, then getting back out again and running some more. It was at the most vulnerable age for a bear, weaned off its mother but not fully proficient at hunting. It was not yet fat.

Once in a while, it turned to face the Odyssey and opened its jaws wide for a roar. We couldn't hear it from where we were—especially not over the sound of our own engine—but it was definitely roaring at us. And it was running away.

At noon the next day, the Odyssey finally emerged from the ice. Waiting for us, on schedule, was the Nordic Orion, which was on its way to Murmansk to pick up iron ore and return with it, through the Northern Sea Route, to China. Also waiting was a Swedish oil tanker headed for Finland, and a Chinese ship, the Xuelong, which was on a scientific expedition into the Arctic. It would be the first Chinese trip through the Northeast Passage, and it would raise fears of Chinese encroachment on the Arctic. The vessel itself was a Ukrainian-built cargo

ship.

The Vaygach sent a small motorboat to ferry Cherepanov, the ice pilot, aboard the Orion, and then the Odyssey continued on its way. Toward evening, we ran into a school of whales. They'd come up, spray water into the air, and then, with a flash of their big black tails, dive down again. It was a joy to watch. We saw probably fifty whales. American whalers had first gone through the Bering Strait and then east into these waters in the latter half of the nineteenth century, but it seems they didn't get them all.

The end of the ice and the sendoff from the whales made it feel as though we had bid farewell to the Arctic, but the Arctic had not yet bid farewell to us. Early on the morning of July 23rd, we saw what looked like land due east. This would have to be Alaska. But Alaska was more than a hundred miles away—too far to see. "It's not Alaska," Vadim said. It was a mirage. The water was still cold but the air was considerably warmer, and the result was a "superior mirage": we saw the dark line of the horizon twice, both where it actually was and at a phantom place above it. The mind interpreted the top image as land. This kind of mirage can happen anywhere but is particularly common in polar regions. The mirage was not something you could look away from, then look at again to find that it was gone. It was in its way a physical fact, and it kept up for hours. We never did see Alaska.

Around mid-morning, we reached the easternmost edge of Russia, which is also the easternmost edge of the Eurasian landmass: Cape Dezhnev. It is a sheer rock cliff, as dramatic and definitive as Cape St. Vincent, in Portugal, the southwesternmost point of Eurasia. In 1728, Vitus Bering had come through the strait from the south, rounded this cape, and then, running into ice a few miles farther along, decided to turn back. At the time, because he didn't continue to St. Petersburg, some people didn't believe him that there was a Northeast Passage. But he was right.

And so to China. We had, it seemed, been through so much, and yet we were only halfway there, still more than thirty-five hundred miles from our destination; at our average sea speed, the remainder of our journey would take between eleven and twelve days.

We set our course southwest and turned the ship back on autopilot. Life returned to its pre-Arctic routines. When a ship is in port, it gets scratched and scuffed in a hundred different ways. It had been too cold and wet in the Arctic to do anything about the damage, but now the crew could begin repainting the winches and windlasses, and greasing the chains that the saltwater and the air had begun to rust. A day south of the Bering Strait, the crew saw the sun set for the first time in three weeks. It didn't go very far that first night, and continued to project a dim, hazy light over the ocean, but the next night was as dark as any. The bridge crew started drawing a heavy blue curtain across the bridge to separate the illuminated section from the front, where the lookouts needed total darkness to see into the night.

The crew experienced boredom. What is boredom? Boredom is staring for hours at the smooth, mirror-like water, hoping to catch a glimpse of something, anything. Boredom is deciding to create a tea strainer from a soda can, going down to the galley, cutting a can in half, poking holes in the bottom with a knife, and then cutting one's finger, pretty badly, on the aluminum. Boredom is not just showing up exactly on time for the nightly Ping-Pong tournament but holding a clandestine practice session during the afternoon. Less productively, boredom is playing Spider Solitaire on the computer in the rec room. Boredom is watching other people play Spider Solitaire in the rec room. The ship's champion was Vadim. He played on the third, most difficult level, and he won a quarter of his games. But he took no joy in it. "Motherfucker," he could be heard muttering at the computer. "Motherfucker."

As the days stretched on, people became grumpier. Discipline relaxed. Vadim may have stopped either showering or doing his laundry, because there was a slightly sour smell wafting from him. He also complained that his feet hurt. During a test of the emergency generator, Dima, the electrician, accidentally cut off all the electricity to the bridge, causing most of the instruments to shut down, and every possible alarm on the bridge to sound. There was an immense racket, matched only by the yelling of the captain at the electrician, who yelled right back.

One morning, I went up to the bridge at around six to find Vadim sitting with Able Seaman Generoso Juan watching American music videos on the chief mate's laptop. Vadim was delighted to see me. "Do you know this band?" he said. "It's called Blink 182. They play a form of music called 'punk rock.' " He proceeded to d.j. a series of songs about Odessa, including the Bee Gees' "Odessa": "I lost a ship in the Baltic sea. I'm on an iceberg running free."

Mads Petersen still had not informed the captain of our destination in China, and the men discussed which port they'd prefer. Shanghai was the favorite—the city wasn't too far from port, and the girls were friendly—but it was unlikely we'd be going to southern China with iron ore, given that steel was mostly manufactured in the north. Maybe it wouldn't much matter where we ended up. Chinese ports are busy, and if the time in port is too short no one would get off anyway. Some of the men said they wouldn't go

ashore even if there was time. It was expensive, and possibly dangerous. Ordinary Seaman Alvin Piamonte said the Mafia had taken root in China, and he wasn't going ashore unless he had two or three guys with him, which could be impossible to arrange given everyone's schedules. The ports the men most loved—the ones in Brazil, Australia, Vietnam—were friendly, warm, and relaxed. They used to like American ports, but after 2001, as part of the Global War on Terror, the United States abrogated centuries of international practice by severely restricting foreign seafarers' ability to go ashore. The men of the Odyssey always became agitated when discussing this. The only country as restrictive as the U.S., they said, was Saudi Arabia. In the words of the second mate, "It has taken the little happiness we had, and made it less."

The only way to cheer the men at such points was to remind them of Bangkok. In Bangkok, as soon as you arrive, a boat comes alongside and disgorges a portable bar, a restaurant, and many friendly young women. If you pay in advance, a woman will move into your cabin for several days, sleep with you, and get up in the morning and iron your shirts—all for about thirty dollars a day. In some ports, the authorities turn a blind eye to this sort of thing. In Bangkok, according to Vadim, if you try to kick the party off your ship, your cargo simply won't get unloaded. For this reason, seamen love Bangkok.

In the last days of July, we passed by the disputed southern Kuril Islands, off the northern tip of Japan, and then we entered the Tsugaru Strait. After weeks of silence, the radar screen bloomed with hundreds of ships, of all different sizes, heading in all sorts of directions: container ships, the rectangular blocks stacked high on their decks like Legos; oil tankers, the pipes tangled on their decks like snakes; and small fishing boats, looking for tuna.

At last, Mads Petersen informed us of our destination: a new port in northern China called Huanghua, a hundred and forty miles southeast of Beijing. Mads said that the port's maximum draft was forty-two feet, and at first this caused consternation. "I did all the calculations," Vadim told the captain heatedly, "and even if the bilges are empty, and we've burned seven hundred tons of fuel, we're still at forty-three!"

"Stop yelling," the captain snapped.

Vadim became quiet. "Was I yelling?" he asked. The captain nodded.

But the crisis soon passed; Huanghua Port was expanding, and the authorities told us that forty-three feet would be no problem. On the other hand, a port this new could hardly be expected to have much infrastructure for entertaining seamen, or even much of a town. The men were disappointed but not surprised, and the second mate even offered the hypothesis that because the port was new the girls might be even cheaper —twenty dollars, he said. On the evening of August 4th, we arrived at an anchor spot in the Bo Hai Gulf, twenty-five miles from the port, and, with a tremendous noise, dropped our seven-ton steel anchor. We were three days behind schedule, which, considering the unpredictability of the route, wasn't bad.

For four days, we sat at anchor, with nothing to do. The Bo Hai Gulf is less a sea than an oil-and-gas field with some saltwater on it; not far from us, drilling platforms burned excess natural gas into the air. The only marine life that seemed to flourish in so dirty a sea was jellyfish, and we watched them float by our ship, hour after hour. By this point, we were out of flour and sugar. On the third day at anchor, we broke our last Ping-Pong ball. The crew had no maps, no friends, no guides to the city they were about to enter, and no way of getting them. All they knew was that the Chinese authorities had sent a very strict checklist of things that must not be aboard

the ship when it came into port, including bugs. The ship had been entirely bug-free until entering the Bo Hai Gulf, which was in fact quite buggy. "It's *their* bugs!" the captain protested. Nonetheless, each day the crew would sweep the upper platforms, and Michael Arboleda would stalk around the corridors of the accommodation with a flyswatter, killing everything in sight.

On the morning of August 9th, we were cleared to enter the port. It was hard at first to grasp how big it was. The Bo Hai Gulf in general—and this port in particular—was shallow, and so the Chinese were dredging. By picking sand up from the bottom and moving it elsewhere, they had managed to make a canal that a ship like the Odyssey could travel through with room to spare. To protect the canal, they had constructed miles of breakwater. And still they were reclaiming land from the water, constructing a new pier several miles into the harbor. "*Molodtsi*," the captain said: "bravo." What seemed from a distance like the outlines of a town was in fact an array of warehouses, processing plants, and cranes. Later, I read that during the reconstruction of the port large bribes had been paid to the port company's chairman, Huang Jianhua. A court had sentenced him to death. It was an impressive port.

Two tugboats steered us to our pier next to a row of big red cranes. Vadim gave the order to open our cargo holds, and we all looked inside: the iron ore was there just as we'd left it in Murmansk, black, heavy, unshifted, and

dry. We lowered our gangway to the pier; Michael and Alvin became security guards; and then we waited. The first person to visit us was our agent in the port, a tall young man who spoke halting English with a slight British accent. The men threw themselves upon him. They had gone on and on about the girls they were going to screw, for between twenty and fifty dollars, but now all they wanted was SIM cards for their phones so they could call home and Internet cards for their computers so they could Skype. Dima came onto the deck with his laptop, to see if he could catch a free Wi-Fi signal, but there was nothing; he'd have to wait, and pay.

The surveyors were next. There were three of them, all well dressed, thin, and friendly, and wearing what looked like expensive designer eyeglasses. They didn't speak much English, but they were shepherded into the ship's office and someone went to look for Vadim.

The last few days of the trip had seemed really to wear on Vadim. In addition to his smell, he looked tired and growled more than usual at Spider Solitaire; because his feet hurt, he'd started breaking his own rule against open-toed footwear on the bridge, and wore sandals. Now, after making the Chinese surveyors wait, he tromped into the ship's office. He wore a white jumpsuit, its top five buttons unbuttoned so that his chest and a gold chain could be seen. He looked as if he hadn't slept, shaved, or showered in weeks. He looked angry. But I had stood with him that morning as we pulled into port and he recited the various differing qualities of ports worldwide, and knew that this was the part of the trip he most enjoyed. I even wondered if he'd been preparing for this moment, like a great actor preparing for a part. The Chinese surveyors, who looked as if they all had degrees in mathematics, must have been frightened at the sight of him, and also relieved. This creature was unlikely to be able to read, much less out-math them.

Vadim then proceeded to get the better of the surveyors in at least three

ways. First, after boarding a small boat and travelling around the perimeter of the ship, he bullied the youngest of them into accepting all his readings of the depth of the draft. “Thirteen twenty-three?” the surveyor would offer, and Vadim would snap, “Thirteen twenty-six! Absolutely!” I thought the surveyor would be offended by this, but he quickly grew accustomed to Vadim and laughed at everything he said. When it came time to measure the water density, Vadim dropped the hydrometer down to the very bottom, where the density would be greatest. As all this was going on, one of the younger crew members was walking around with another surveyor measuring the water in the bilge tanks. The less water he measured in the tanks, the more cargo we had, and the young crew member had been instructed by Vadim in the proper technique of bilge measurement. “Was I born in Odessa, or not?” Vadim said.

After all the numbers were added up and multiplied, it turned out that he’d gone too far: we now had two hundred tons more iron ore than when we left Murmansk. Vadim slapped his forehead and explained to the surveyors that he’d suspected the water-density readings had been off in the port of origin. Would the surveyors mind just signing for the lower, original number? The surveyors didn’t mind. What were a few hundred tons of iron ore when you were receiving fifty million tons every month? China was going to swallow our little shipment and demand much more.

When the snow that rests on top of ice floes starts to melt, green pools, or "melt ponds," form. Unlike white snow cover, which reflects sunlight back into the atmosphere, puddles absorb it, and the sunlight slowly drills a hole in the ice.

There were a few more formalities to take care of, and in the meantime some port traders came by and offered SIM cards and other small favors. There was no question of any girls coming on board, and there would hardly be time for a shore visit. The ship had never felt more like a prison. How long would it even be in port? The cranes were very large. The cargo holds were open. In the next two months, the Odyssey would go back to Murmansk and then back to China, then travel across the Pacific to Vancouver to pick up a load of coal, which it would take back to Hamburg via the Arctic route. Mads Petersen would meet the ship again in Hamburg, in late November. "She looks basically the same as when I saw her last time," he would tell me. "I was actually a bit surprised that the effects were not greater." During the summer of 2012, the Arctic ice would set a record

for melting, while the ships would set a record for cargo taken through the route. But that was in the future. For now, toward evening, exactly a month after we'd left Murmansk, one of the cranes swooped down from above, like an enormous red hawk, took the first pile of Russian iron ore, and deposited it on the Chinese pier. ♦

Published in the print edition of the December 24 & 31, 2012, issue.

Keith Gessen is a contributing writer at The New Yorker.

More: (Pres.) Vladimir Putin Boredom Cargo ships China Filipinos Global Warming Icebergs Oil Companies Polar Bears Russia Russians Shell

Read More

A REPORTER AT LARGE

THE GREAT OASIS

Can a wall of trees stop the Sahara from spreading?

By Burkhard Bilger

A REPORTER AT LARGE

IPHIGENIA IN FOREST HILLS

Anatomy of a murder trial.

By Janet Malcolm

ANNALS OF HISTORY

THE DAY L.B.J. TOOK CHARGE

Lyndon Johnson and the events in Dallas.

By Robert A. Caro