A LAUNCH AT SEA

The wind brought Denisyuk many troubles. The surf at Guessed Island, where he was to work as an aero-logist, was so heavy that landing seemed impossible. Because of the late season the Georgy Sedov could not wait, the ice threatening to block her way back. Boris Yefimovich,, the captain, was compelled for once to give up his usual caution and land the cargo despite the breakers.

I did not know how things were on shore. I just saw men returning in empty kungases. They were soaked to the skin and drank diluted alcohol to get warm. I understood that some of the boxes had to be fished out of the sea.

Unloading went on day and night.

The captain was not sure that he would be able to get all the cargo ashore, so he ordered provisions and fuel to be landed first and the hydrogen cylinders last.

That was where Denisyuk's troubles began. He thought the cylinders to be the most valuable cargo. He must have them if he was to fill the balloons to be flown at regular intervals throughout the year. By watching their flight you can determine the speed and direction of wind.

Denisyuk flatly refused to land without the cylinders. I saw him, a huge and clumsy man, sombrely pace the deck, peering at the distant island. It was flat and bare, and the solitary house that stood on it was all but buried in snow.

He set out for the island when the launch went on its last run, towing the kungas loaded with his "precious" cylinders.

Netayev was at the wheel of the launch. The captain trusted him more and more as the voyage drew to its close. Chief engineer Kartashov replaced the motorman, who had had to work forty-eight hours without sleep.

I realized that the captain attached particular importance to that trip of the launch, because he sent on it his favorite assistants, Netayev and Kartashov.

After the launch pulled away from the ship with the kungas in tow there came a snow "charge" which imperceptibly worked itself into a blizzard. The Petushok was lost to view. Everybody felt uneasy. Visibility ended right at the ship's side. The mast-tops could not be seen either. The island had vanished. All ears were strained to catch the chug-chug of the Petushok's little diesel, growing fainter and fainter.

Finally it died away.

An hour and a half wore on. yet the launch could not be heard either on board the ship or on the island with which we kept in touch by wireless.

The launch had neither reached the shore nor returned to the ship.

We all tried to picture what was happening to Netayev, Kartashov and Denisyuk, who was all alone in the kungas loaded with the cylinders.

Afterwards we learnt that the engine of the launch went dead when Netayev had already sighted a signal fire built on the shore.

The wheel-house communicated with the engine-room through a voice-pipe.

"What's up?" Netayev shouted into the pipe.

"I'll get her going in a moment," replied Kartashov, a stocky middle-aged seaman.

He was bending over the diesel in the crammed engine-room.

A diesel is started with compressed air. A cylinder of compressed air lay in a special rack that kept it from rolling back and forth. The Petushok had lost speed; it no longer obeyed the wheel, and the waves were pounding at its sides.

Kartashov had had a thorough seaman's training. He could do anything with his own hands, a quality which had won him the captain's esteem.

He connected the cylinder and the diesel with a hose and turned the cock of the throttle-valve. The hand of the pressure gauge jumped. The compressed air rushed into the cylinders of the engine.

Kartashov fed fuel — there was a stroke, then another. The diesel chugged, then stopped, then chugged again, and went dead.

"The injector's choked!" Kartashov shouted confidently into the voice-pipe. "Got to clear it."

Netayev, who was at the wheel, tried in vain to turn the launch head on to the waves.

The fire on the island was receding fast. Wind and current were driving the launch out into the open sea. Netayev glanced at the compass to ascertain, if only roughly, the trend of his forced course.

Grasping with a sailor's deftness the hand-rail on the engine-room superstructure, Netayev went aft. He did not hurry Kartashov. He fully trusted that experienced man, who spoke and acted with equal assurance.

From the stern the tow-line stretched away into the half-darkness through a wall of whirling snow. The kungas seemed a blurred dark spot.

The waves rolled over the launch. They laid it on its side but it straightened up again and again, as stubbornly as a cork-tumbler.

Wet and sticky, the snow lashed at Netayev's face and got in his eyes.

The square of the hatch lit up. Kartashov stuck his head out of it, with his cap tipped back.

"I'll start her in no time!" he cried encouragingly.

The reassured Netayev went back to the wheel.

Still he felt uneasy. Suppose Kartashov did get the diesel going, which way should they head?

Locating an island in the sea is not easy. It had taken the Sedov three days to do so.

The launch had no wireless, no log or chart showing the course. Once a Soviet scientist who studied in Leningrad the route of a ship drifting amid ice-fields had indicated the location of an unknown island. Netayev was now near that island, called Guessed Island, but he did not know how to get there.

The engine was still dead.

"How are you getting on?" Netayev shouted again into the voice-pipe.

There was no reply.

With a foreboding of misfortune Netayev walked out of the wheel-house and looked down into the hatch of the engine-room.

An electric bulb shone dimly on Kartashov's broad back. Kartashov turned round. His usually calm and confident expression was gone. He seemed to be suffering from acute physical pain. He pointed to the hand of the pressure gauge.

"I've spoilt it all," he said in a hollow voice. "There was no air left in the cylinder, the indicator of the gauge got stuck."

Netayev saw sweat drops standing out on Kartashov's wrinkled fore-head.

"Can't start her," Kartashov went on in a voice that rang odd to Neta-yev. "It's my fault. That indicator misled me. What a misfortune, Vanya!" A lump rose to Kartashov's throat.

"There's a man out there in the kungas," said Netayev with unex-pected calm. "We must take him aboard. The kun-gas'll soon sink."

The young mate's calm words sobered up Kartashov. He frowned, kicked the empty cylinder with his foot and climbed up the ladder after Netayev.

They went aft. Sticky snow and spray came flying from all sides. Water poured in over the tops of their high-boots.

The two seamen got hold of the tow-line and began to pull at it with all their might. Soon a dancing shadow came out of the murky darkness. It was the kungas, with a man looming on its bow.

When the bow of the kungas came alongside the stern of the launch, Netayev shouted, "Jump, Denisyuk! We're going to cut off the tow-line!"

"What d'you mean — cut off?" a voice called back. "Don't you know there are cylinders with hydrogen here?"

"Hang your cylinders!" said Kartashov. "The kungas is going to sink. Can't you see?"

"Sure," replied Denisyuk, "I can see very well. Only how can we give up the cylinders?"

He shouted the words, now rising above the stern, now sinking out of sight.

"Jump!" roared Kartashov, getting angry.

"But I can't fly a single balloon without these cylinders!" Denisyuk protested hoarsely. "That wouldn't do!"

"We can't hold the kungas, it's going to fill up anyway," Netayev tried to explain, checking his anger.

"Why didn't you say so in the first place? Well, look out!"

Something crashed down on deck. Kartashov had just time to jump aside. It was a cylinder thrown from the kungas. The two men found it hard to believe that a cylinder weighing more than a hundred pounds could be tossed over such a distance. But Denisyuk — that huge man who, while in the army, had amazed his comrades of the tank regiment by toying with a seventy-pound dumb-bell — had chosen the moment when the kungas hit the stern of the launch to toss over the cylinder.

"Take them to the bow cabin, Fyodor Mikhailovich," said Netayev to Kartashov, smiling in spite of himself at Karta-shov's amazement. "I'll see that they don't roll overboard."

The cylinders, which looked like large-calibre shells, dropped aft one after another. The athlete could be heard wheezing as he lifted them from the bottom of the kungas.

"That's enough, Denisyuk, we can't overload the launch!" Netayev objected hesitantly.

"Don't forget they must last a whole year. Eight cylinders isn't much. Just one more, please!" And without waiting for an answer, Denisyuk threw one more cylinder on deck with a gasp.

Then he jumped over clumsily himself and at once grabbed the handrail.

"Rocking like a tank on rugged ground," he muttered. "I feel as rotten as if I'd had a knock on the head."

Netayev swung up an axe and cut off the tow-line. The kungas shot up on a wave-crest and fell away into the darkness.

Denisyuk doubled up on the engine-room superstructure. He apparently felt sick.

"You must work if you feel sick," Netayev suggested sympathetically. "Help the engineer to bail."

Denisyuk, who had thrown steel cylinders a minute before but now was limp and could hardly stand up, lumbered towards the bow cabin.

To enter it he had to pass through the wheel-house.

The sea was roaring in the darkness. It beat furiously at the bulkheads and the door. The water trickled into the cabin from below the panes and across the coamings. It had to be bailed with pails. Denisyuk came to Kartashov's aid. It was a hard job. Because of his height Denisyuk could not unbend, but even so the work was a relief to him.

Kartashov was in a sullen and untalkative mood.

They bailed all night long, but the water-level kept on rising. Towards morning there came a rather strong gale. The position of the launch was becoming critical. It had begun to toss. As if losing the last of its strength, it Lay down on its side and scooped water, then darted upwards as though about to leap clear of the wave-crest, only to plunge down again.

Netayev came down into the bow cabin for a moment.

"Things are in bad shape, Denisyuk," he said. "We can't hold against the seas. And we can't bail out the water either, can we?"

"Well?" Denisyuk paused with the pail in his hand.

"Got to throw those cylinders overboard," said Netayev.

"That wouldn't do, comrades! I'd have nothing to work with for a whole year!"

"Can't be helped," Netayev said with a shrug, as if apologizing.

"But what if we started the diesel?" asked Denisyuk all of a sudden.

"How do you mean?" returned Kartashov.

"Here's compressed gas for you! Two hundred atmospheres." Denisyuk kicked one of the cylinders.

Kartashov gave him a surprised look.

"That's hydrogen," he said weightily.

"What of it?"

"He's crazy!" Kartashov threw down his pail in anger. "Don't you know that hydrogen mixed with air makes detonating gas? If we tried to start the engine with compressed hydrogen we'd certainly blow it up. The liaunch'd go up in chips!"

"Not at all," said Denisyuk, raising his hand. "You just listen to me. It's a sure thing. We shan't mix hydrogen with air — we'll plug all the suction pipes."

Kartashov shook his head.

"We can't do that, it's too risky." He turned away.

"As you like. Only I won't have my cylinders thrown away."

"What do you say, Fyodor Mikhailovich?" Netayev asked Kartashov.

"Never heard of a thing like that," Kartashov retorted. "I've been an engineer for fifteen years, taught quite a few people. I can't take such a chance."

Netayev fell to thinking. Denisyuk looked at him expectantly. At last Netayev turned to him; his face, usually friendly and cheerful, was haggard.

"Why do you think we may use hydrogen?" he asked, as calmly as before.

"You see, I attended a polytechnical college, only I didn't finish it. Then I was in a tank unit, had a lot to do with tank diesels. When I got back from the army" — Denisyuk looked away — "I found neither home nor family. So I took a course to be able to go to the Arctic. Anyway, I know how to handle a diesel."

"Look here, Denisyuk," said Netayev firmly. "Once I studied diesels at a navigation school, but let's say I know nothing about them and have got to learn everything now. Stand by my side in the house, I must take the wheel. Kartashov's going to pass you the pails from below, you empty them on deck. And tell me everything so that I'll get it straight — all of it!"

Denisyuk gave the rather short Netayev an attentive, respectful look.

"Good," he agreed. "I'll tell you everything."

The waves broke against the glass in bursts of green water. As the launch shot up the men could see the horizon jagged by wave-crests. Then it swept downwards, as if about to capsize, and the men could barely stand on their feet. Stooping by Netayev's side, Denisyuk took the pail-fuls of water from Kartashov and emptied them on deck.

"How does a diesel operate? Listen, mate. First the piston slides out of the cylinder and sucks in air from the outside." Denisyuk reached down and took up a pail of water. "That's the intake stroke. Then the piston moves back into the cylinder and compresses the air in it — squeezes it so tight it turns hot. That's the pressure stroke. Now for the third stroke. Liquid fuel is fed through the injector into the cylinder with the hot air. It's ignited and forms gases which force the piston out. That's the power stroke. And then comes the last stroke: the piston moves in again and pushes out the expanded gases." Denisyuk splashed out the water. "Then the air is sucked in again." He took another pailful of water from Kartashov.

Netayev, pale and tense, held on to the wheel, listening to the unusual lecture. He knew that as things were then the launch could not hold out more than a couple of hours. And how long might it take the Sedov to locate the tiny craft in the open sea? By taking a risk they might be able to start the engine and hold their own against the waves— who knew for how long. But what if there were an explosion?

"Now, how's the diesel started? It's quite simple. You shut up the suction pipe." Denisyuk closed the door of the bow cabin. "You start the diesel by hand. The pistons push out all the air that's in the cylinder, but don't suck in any fresh air." Denisyuk splashed out what was left in the pail. "Into the empty cylinder" — he showed Netayev the empty pail—"we let compressed gas instead of fuel. The gas pushes out the piston. The piston slides out of the cylinder, then moves back and squeezes out the expanded gas without compressing, that is, without heating it. Now comes the next intake stroke. The piston ought to suck in air but the suction pipe is plugged. And once again the cylinder is empty." Denisyuk shook the pail. "By that time the power stroke comes again. Again you feed into your cylinder compressed

hydrogen instead of fuel. You see now that it doesn't mix up with the outside air. The pail — the cylinder, I mean — is empty. That means there's no detonating mixture. But when you've fed compressed gas into the cylinder several times, when the diesel's started and working, you shut off the compressed hydrogen and open the suction pipe." He swung the door open. "Pass up the pail, Kartashov."

Kartashov stuck his head into the wheel-house.

"Say, Vanya! I'll own that Denisyuk is a half-made technician and I'm just a ship engineer who's learnt his job the hard way. But still can you imagine fooling with hydrogen like that? I've known ever since my school days that hydrogen is an explosive. It's for you to decide, Ivan Vasilyevich. You're younger than me, but you're in command here. Now if you ask me" — the old engineer paused for a second and his voice caught — "I don't mind being blown up. I deserve it, too." His voice rang confident again. "I do. It's my fault. Do what you think is best, Vanya."

Netayev went pale but did not say a word. It was up to him to decide. Men's lives and the existence of the little craft depended on whether he had grasped the root of the matter.

Denisyuk and Kartashov were bailing rhythmically. After bailing the water out of the bow cabin they moved to the engine-room and bailed it out of there, then went back to the bow cabin, pouring out the water through the wheel-house.

Netayev, sunk in thought, held on to the wheel.

The gale was raging.

Even the Sedov had a hard time because of the roll. Her wireless operator was nearly washed overboard when running to hand the captain a message. He clung to the railing with all his might to keep on deck. Half choked, he tore open the door of the captain's cabin; his smart jacket was dripping.

The captain read the message.

"It isn't flying weather," he said with bitter resentment, put on his overcoat, and mounted the bridge.

He stood on the bridge for hours, sweeping the horizon with his binoculars, although the horizon was so close that there was no need for binoculars.

It was just like the Arctic — nothing but fog and wind.

The deck kept on slipping away underfoot. The wind snatched up foaming wave-crests and threw them high into the air. Even the bridge did not escape the heavy dousings of spray.

The captain combed the sea in a zigzagging course. As she made a tack the ship exposed her side to the waves and scooped water with her deck. Until then the captain had avoided that, fearing that the launch and kungas might be swept overboard. Now he did not care, for there was no launch or kungas on board. The waves rolled easily across the empty deck.

"A plane! A plane!" shouted someone.

The captain spun round. A shapely aeroplane was flying in the low sky.

"So he made it! Baranov made it!" said the captain joyfully. "You can depend on him, all right!" He blinked and took out his handkerchief, apparently to wipe the spray off his face.

The flying boat described a circle over the ship. The seamen tried to make out the flyers' faces in the cockpit but could not. The craft began to fly away from the ship, almost grazing the waves. It disappeared before it reached the horizon.

The seamen saw it twice more as it zigzagged above the sea, and finally received this radiogram: "Launch at sea south-south-west of you."

"Hard to starboard! Snappy!" shouted the captain, waving the slip of paper which was already wet.

The Sedov started to put about and scooped water again, but no one heeded it this time.

An hour later the little launch was sighted from the ship. The tiny spot now melted in the fog, now came into view again.

"They keep her head on to the waves," said the captain, peering into his binoculars. "Must've fixed up the diesel."

The men in the launch sighted the ship in their turn. The Petushok headed for her — a hardy little craft that leapt from crest to crest.

"That's the spirit! There are brave chaps for you!" cried radiant Boris Yefimovich.

Twenty minutes later the seamen were hugging the courageous three who had saved their own lives and the launch.

"We had to sink so many cylinders!" said Denisyuk unhappily. "Now I'll have to work on a reduced programme the whole year. Well, I'm going to my cabin for a rest. What? Not a sailor's behaviour? That's all right, I'm a shore man, you can have the sea."

"Never mind what he says," remarked Kartashov. "He's a regular seaman."

The table in the saloon was laid to celebrate the return of the three heroes, who had gone without food so long. But the heroes barely got to their cabins, where they instantly fell asleep.

The captain and I walked into the saloon. Katya, the stewardess, was clearing the table as she feared that the plates might break because of the roll.

"I can tell you the story of a splendid New Year's table left untouched," said the captain. "It happened on the Big Land."