

HACKTORIA

FIND A MISSING
VESSEL AND BRING
HER CREW BACK
SAFELY

LOST AT

SEA

Chapter 1: Dark Waters

The frigid spray of the Black Sea slapped against the Narwhal's hull as Captain Mikhail Petrov scanned the horizon through his binoculars. Despite its appearance as a weathered fishing trawler, the Narwhal was one of SERPENT's most advanced maritime surveillance vessels, currently tracking unusual Russian submarine movements in these contested waters.

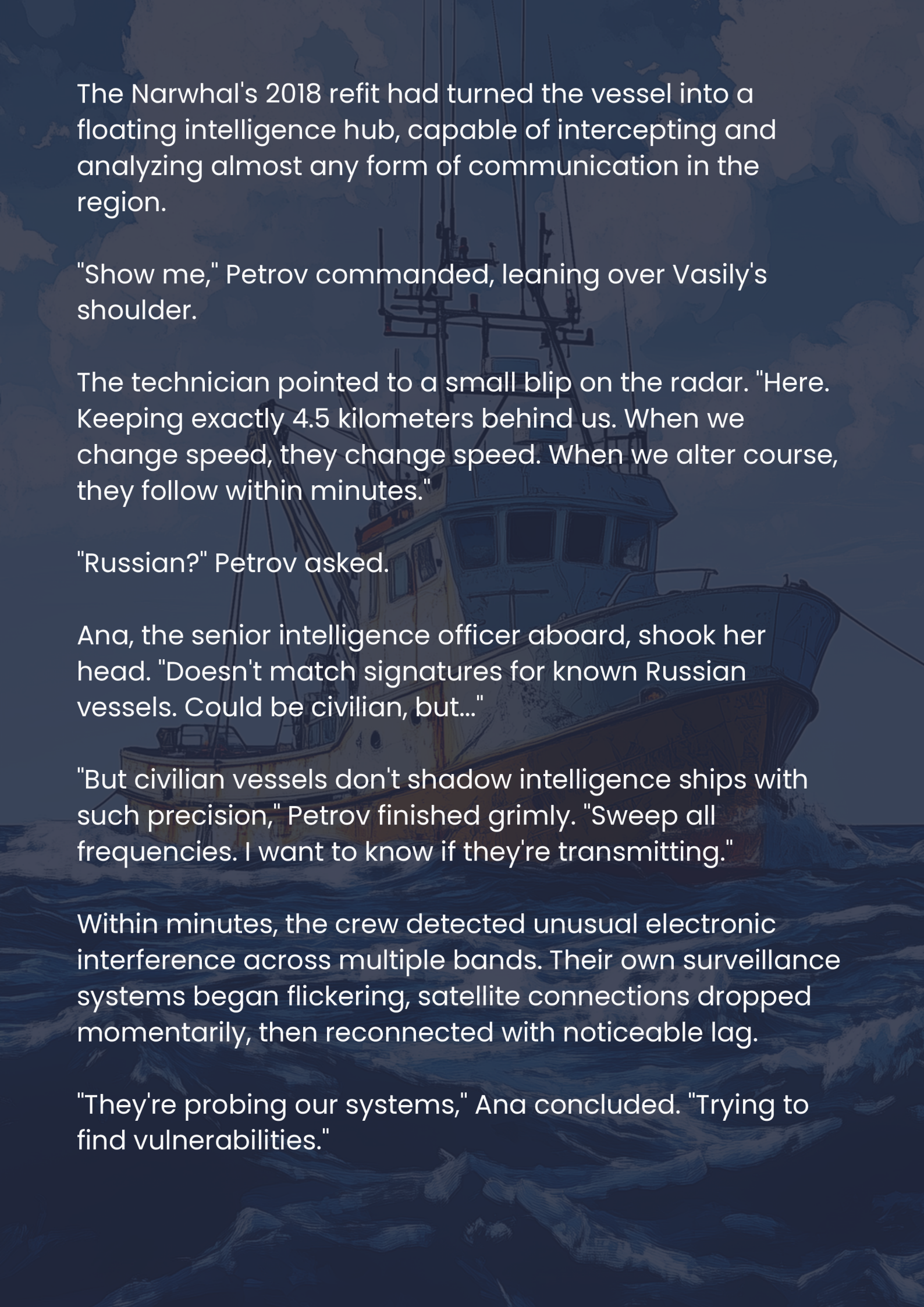
"Anything on the sonar, Vasily?" Captain Petrov called down to the communications hub below deck.

"Multiple signatures, Captain," Vasily replied, his fingers dancing across the state-of-the-art monitoring station disguised beneath weathered panels. "Two Kilo-class submarines moving in formation about twelve kilometers northeast. They're shadowing that NATO exercise, but there's something else..."

Petrov lowered his binoculars and frowned. "Something else?"

"Yes, sir. An unidentified vessel, maintaining distance at our six o'clock. Been there for about three hours now. Too consistent to be coincidental."

The captain made his way down to the cramped monitoring station where four technicians huddled around screens displaying thermal images, sonar readings, and encrypted communications.

The background of the entire page is a dark, blue-toned image of a large naval vessel, the USS Narwhal (SSN-581), sailing on the ocean. The ship is viewed from a low angle, showing its hull and upper decks. The water is dark and choppy. The sky is a deep blue. The overall mood is serious and mysterious.

The Narwhal's 2018 refit had turned the vessel into a floating intelligence hub, capable of intercepting and analyzing almost any form of communication in the region.

"Show me," Petrov commanded, leaning over Vasily's shoulder.

The technician pointed to a small blip on the radar. "Here. Keeping exactly 4.5 kilometers behind us. When we change speed, they change speed. When we alter course, they follow within minutes."

"Russian?" Petrov asked.

Ana, the senior intelligence officer aboard, shook her head. "Doesn't match signatures for known Russian vessels. Could be civilian, but..."

"But civilian vessels don't shadow intelligence ships with such precision," Petrov finished grimly. "Sweep all frequencies. I want to know if they're transmitting."

Within minutes, the crew detected unusual electronic interference across multiple bands. Their own surveillance systems began flickering, satellite connections dropped momentarily, then reconnected with noticeable lag.

"They're probing our systems," Ana concluded. "Trying to find vulnerabilities."



Petrov nodded. "Change course. Let's see if we can shake them."

The Narwhal banked to port, adopting a new heading that would take them closer to Romanian waters. As the vessel settled on its new course, Vasily's face paled.

"Captain, navigation systems are showing inconsistencies. GPS coordinates are fluctuating."

"Switch to backup systems," Petrov ordered.

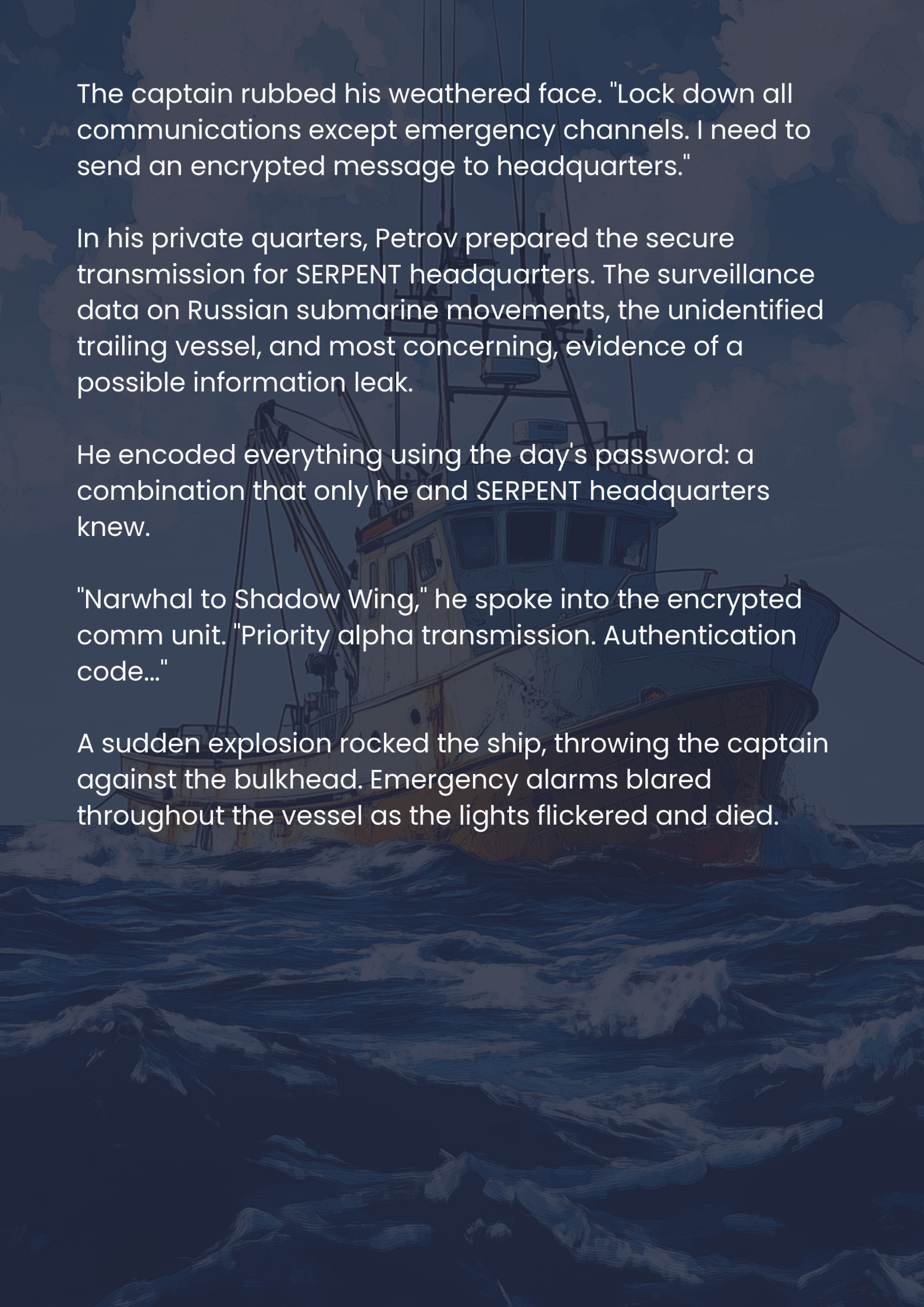
"Already did, sir. Same issue." Vasily looked up, his expression grim. "I think our systems are compromised."

Later that evening, as the crew performed diagnostics on their equipment, Ana approached the captain with a tablet in hand.

"Sir, I've been reviewing our transmission logs," she said quietly. "There's an anomaly. Small data packets leaving the ship on unauthorized channels. They started three days ago."

Petrov's eyes narrowed. "You're suggesting we have a mole."

"The evidence points that way, sir. Someone's feeding information to... someone."



The captain rubbed his weathered face. "Lock down all communications except emergency channels. I need to send an encrypted message to headquarters."

In his private quarters, Petrov prepared the secure transmission for SERPENT headquarters. The surveillance data on Russian submarine movements, the unidentified trailing vessel, and most concerning, evidence of a possible information leak.

He encoded everything using the day's password: a combination that only he and SERPENT headquarters knew.

"Narwhal to Shadow Wing," he spoke into the encrypted comm unit. "Priority alpha transmission. Authentication code..."

A sudden explosion rocked the ship, throwing the captain against the bulkhead. Emergency alarms blared throughout the vessel as the lights flickered and died.

Chapter 2: Shadow Wing

Julia Sharpe stood in the command center of the Shadow Wing, examining the holographic display of Eastern Europe with calm intensity. The modified Bombardier Global 8000 cut through the night sky effortlessly, returning from what had been a relatively straightforward intelligence gathering operation in Romania.

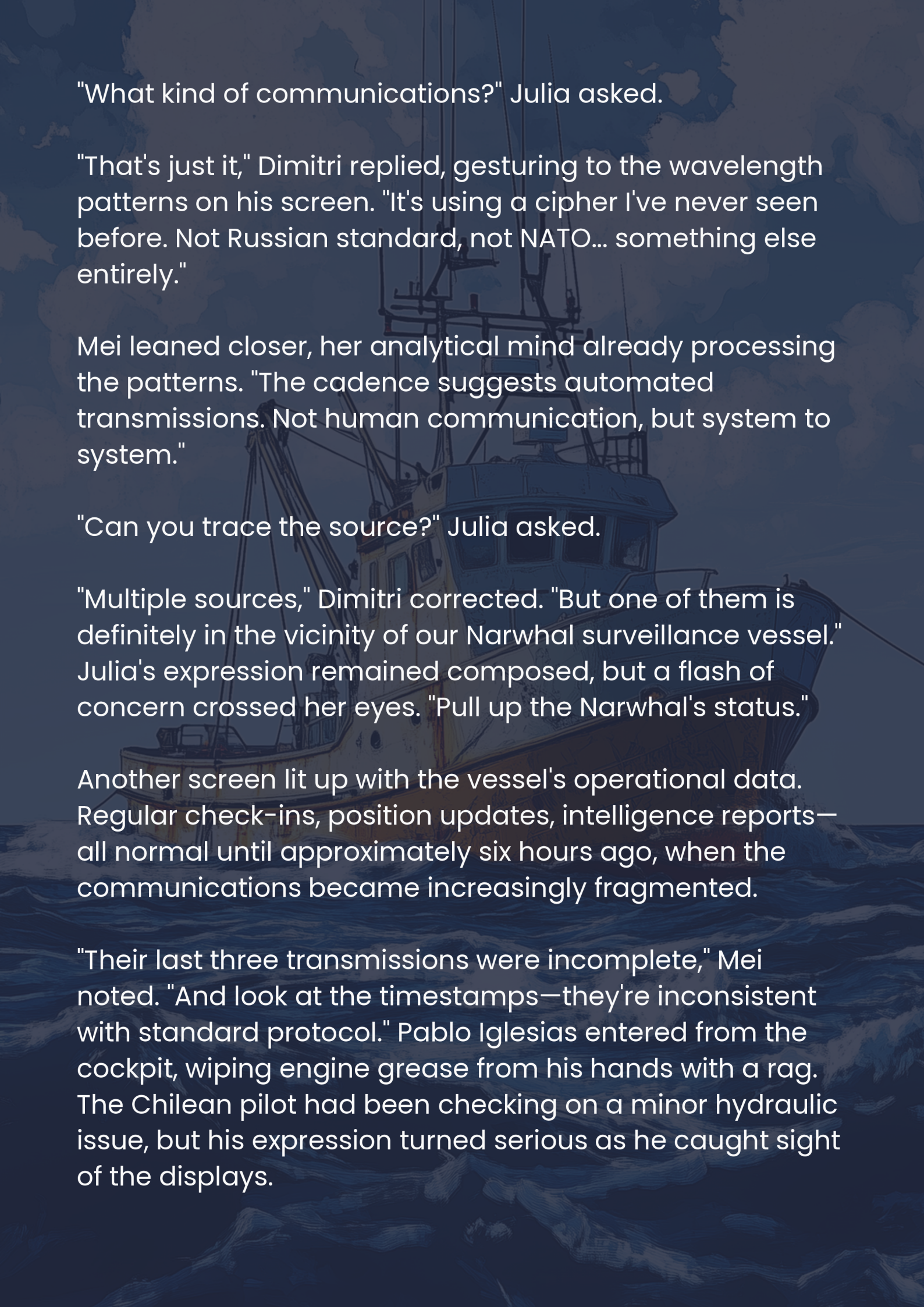
"Another successful mission," James Brown remarked, loosening his tie as he dropped into one of the ergonomic chairs surrounding the holotable. "Sometimes I miss the complications."

"Careful what you wish for," Julia replied, her British accent precise and measured. "I prefer when things go according to plan."

Across the cabin, Dimitri Zechev hunched over his workstation, the glow of multiple screens illuminating his face. The Bulgarian hacker's fingers moved across his keyboard with practiced efficiency, seemingly in rhythm with the distant hum of the aircraft's engines.

"Overseer," he called suddenly, his accent thickening as it always did when he found something of interest. "I'm picking up unusual encrypted communications in the Black Sea region."

Julia moved to his station, with Mei Huang joining them from her linguistics station.



"What kind of communications?" Julia asked.

"That's just it," Dimitri replied, gesturing to the wavelength patterns on his screen. "It's using a cipher I've never seen before. Not Russian standard, not NATO... something else entirely."

Mei leaned closer, her analytical mind already processing the patterns. "The cadence suggests automated transmissions. Not human communication, but system to system."

"Can you trace the source?" Julia asked.

"Multiple sources," Dimitri corrected. "But one of them is definitely in the vicinity of our Narwhal surveillance vessel." Julia's expression remained composed, but a flash of concern crossed her eyes. "Pull up the Narwhal's status."

Another screen lit up with the vessel's operational data. Regular check-ins, position updates, intelligence reports—all normal until approximately six hours ago, when the communications became increasingly fragmented.

"Their last three transmissions were incomplete," Mei noted. "And look at the timestamps—they're inconsistent with standard protocol." Pablo Iglesias entered from the cockpit, wiping engine grease from his hands with a rag. The Chilean pilot had been checking on a minor hydraulic issue, but his expression turned serious as he caught sight of the displays.

A fishing boat with a white cabin and a red hull is shown from a low angle, navigating through dark, choppy water at night. The boat's mast and rigging are silhouetted against a dark, cloudy sky. The water is dark blue with white foam from the waves.

"Problems?" he asked.

"Potentially," Julia replied. "How quickly can we alter our flight plan?"

Pablo exchanged a glance with Peter Jansen, who had followed him from the cockpit. "We have enough fuel for a significant detour. Where do you need to go?"

"I want to get closer to the Black Sea. There's a private airfield near Constanța that SERPENT has arrangements with."

Peter nodded. "I can file the new flight plan immediately. We can be there in—"

A priority alert cut through the cabin's ambient noise. All eyes turned to the communications array as a distress signal registered.

"It's from the Narwhal," Dimitri announced, already working to clean up the signal. "Coming in now."

The message was garbled, fragments of data rather than a coherent transmission. Phrases like "under surveillance," "systems compromised," and "unknown vessel" emerged from the static.

"Time stamp?" Julia asked.



"22:34 Eastern European Time," Dimitri confirmed. "Just now."

"Try to establish communication," Julia ordered.

Dimitri's fingers flew across his keyboard, initiating every protocol for emergency contact. Minutes passed in tense silence.

"Nothing," he finally said. "Complete communication blackout. Not even emergency beacons."

"Last known coordinates?" Julia asked.

"Here," Mei pointed to a section of the Black Sea on the holographic display. "About 70 nautical miles off the Romanian coast."

Julia straightened, her decision made. "Pablo, Peter—get us to Constanța as quickly as possible. Dimitri, contact our assets in the region and the British Royal Navy. They have vessels nearby." She turned to Mei. "I need you to compile everything we know about Russian naval activities in the area for the past month."

As the team sprang into action, Julia moved to her private office at the rear of the aircraft. She needed to assemble a ground team—and she knew exactly who to call for this type of operation.

Chapter 3: The Beacon

The temporary SERPENT field office on the outskirts of Constanța was a flurry of activity when Special Agent K arrived. The converted warehouse overlooked the port, its unassuming exterior hiding a sophisticated command center established in less than 24 hours by SERPENT's advance team.

"Glad you could join us," Isabella Moreno greeted, her historian's eye evident in the way she had already arranged maps of the Black Sea dating back to the Cold War alongside modern satellite imagery. "How was Kazakhstan?"

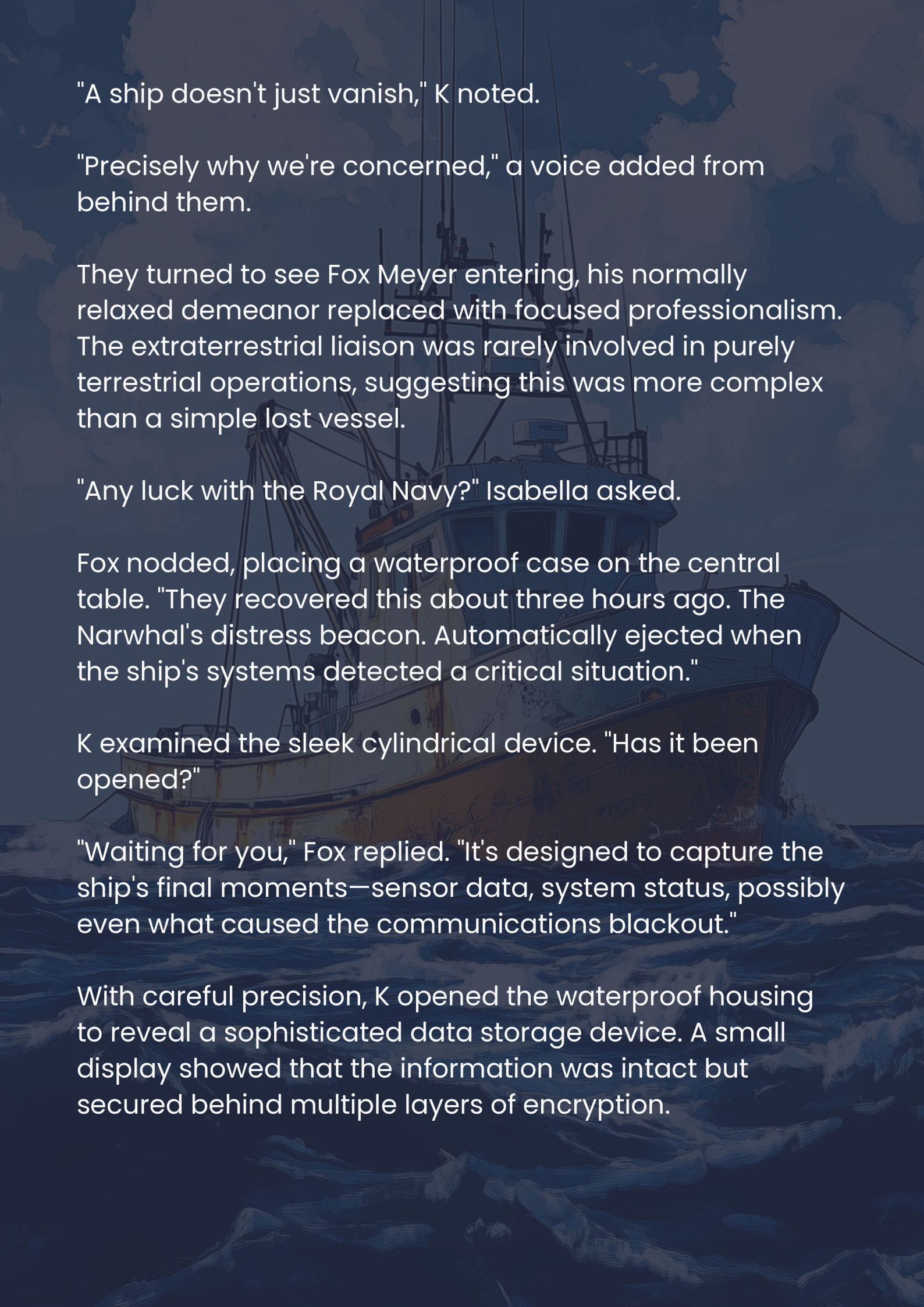
"Enlightening," K replied, setting down a weathered duffel bag. "Though I would have preferred finishing that investigation before being called here."

Isabella nodded sympathetically. "This takes priority. The Narwhal situation has escalated significantly."

She led K to the central briefing area where digital displays showed search patterns being conducted by various vessels in the Black Sea.

"What do we know?" K asked, scanning the information.

"Not nearly enough," Isabella admitted. "The Narwhal went dark approximately 36 hours ago after sending a partial distress signal. No communication since then. No emergency locator beacons, no survivors, no debris field."

The background is a dark, moody illustration of a ship, possibly a fishing vessel or research ship, on a choppy sea. The ship is viewed from a low angle, showing its hull and upper decks. The colors are muted blues, greys, and browns, creating a somber and mysterious atmosphere. The text is overlaid on this background in a clean, white, sans-serif font.

"A ship doesn't just vanish," K noted.

"Precisely why we're concerned," a voice added from behind them.

They turned to see Fox Meyer entering, his normally relaxed demeanor replaced with focused professionalism. The extraterrestrial liaison was rarely involved in purely terrestrial operations, suggesting this was more complex than a simple lost vessel.

"Any luck with the Royal Navy?" Isabella asked.

Fox nodded, placing a waterproof case on the central table. "They recovered this about three hours ago. The Narwhal's distress beacon. Automatically ejected when the ship's systems detected a critical situation."

K examined the sleek cylindrical device. "Has it been opened?"

"Waiting for you," Fox replied. "It's designed to capture the ship's final moments—sensor data, system status, possibly even what caused the communications blackout."

With careful precision, K opened the waterproof housing to reveal a sophisticated data storage device. A small display showed that the information was intact but secured behind multiple layers of encryption.



"Standard protocol," Isabella explained. "The captain sets a daily password, communicated to headquarters through secure channels."

"And let me guess," K said, already connecting the device to SERPENT's systems, "the password for yesterday was never transmitted."

"Correct," Fox confirmed. "The communication blackout happened before the scheduled password exchange." As the data from the beacon began transferring to their systems, Isabella pulled up historical records on her tablet.

"The Black Sea has always been contested waters," she explained, showing charts of naval confrontations throughout the decades. "But recently, there's been an uptick in Russian aggression—testing boundaries, shadowing NATO vessels, electronic warfare experiments." "You think the Russians took out our ship?" K asked.

Isabella shook her head. "Not directly. That would be too provocative. But they might have been testing new capabilities, and things went wrong. Or..."

"Or there's something in these waters they don't want us to see," Fox finished.

K began analyzing the limited data they could access without breaking the encryption. Navigation logs showed the Narwhal had altered course several times in the hours before communication was lost.



Energy readings suggested unusual electromagnetic activity in the vicinity.

"Whatever happened," K concluded, "it wasn't natural. And it wasn't an accident."

The sound of helicopter blades chopping through the air interrupted their analysis. Minutes later, the warehouse doors opened to admit Julia Sharpe, flanked by Dimitri Zechev and Mei Huang.

"I see you've acquired our beacon," Julia observed, her gaze taking in the assembled team and their progress. "Any breakthroughs?"

"Working on it," K replied. "But without the password..." Julia nodded, understanding the challenge. "Then that's our first objective. Break that encryption, access the data, find our ship."

She moved to the head of the briefing table, her presence commanding attention without effort.

"Greetings, Special Agent," Julia began formally, initiating the official briefing. "Yesterday at exactly 22:34 EET we lost contact with our surveillance ship 'Narwhal'..."

As the Overseer detailed the situation, K's mind was already racing, analyzing potential approaches to crack the encrypted archive. Whatever secrets the Narwhal had discovered in those dark waters, they were worth finding—and worth killing for.

Briefing

Greetings, Special Agent.

Yesterday at exactly 22:34 EET we lost contact with our surveillance ship "Narwhal". A distress signal was sent out, right after this all communication was lost. The Narwhal was operating in the Black Sea, keeping an eye on Russian submarine and aerial activity. Although she looks like a regular fishing trawler, the Narwhal, built in 2018, was outfitted with state of the art equipment. Our allies in the British Royal Navy were kind enough to respond immediately. They were able to retrieve the Narwhals' distress beacon. This is a device that automatically logs the last ten event, using the many sensors on board. This quick log entry is written to the SD card inside a waterproof tube, outfitted with a flotation device and GPS beacon. After the data is written, the beacon ejects and keeps afloat on the surface. This prevents any signal delay from external antennas not being fast enough.

Now, there's a catch with this beacon. The log-file is written to an encrypted archive. The password for this log-file is set by the captain and communicated over encrypted channels, changing daily to prevent enemy forces capturing the correct code. Somehow, the signal was lost right before the captain was able to relay the new password. So it's up to you to crack the file.

As always, Special Agent, the contract is yours, if you choose to accept.

Materials

logfile-narwhal.txt

Answer Instruction

Use the answer to unlock the flagfile, this will reward you with your badge.

Figure out the logbook (flagfile) password

Flagfile

Be advised, the flagfile is an encrypted ZIP. Make sure your OS supports the ZIP format. Ensure the password contains no hidden characters or formatting.

PS: Don't forget to claim your Coins and XP, by posting your card in the #card-brag channel in Discord.

<https://discord.hacktoria.com>

Write-Up

There is an attached file called a write-up, this will give you the answer in case you get stuck.

Acknowledgements

This challenge was made by Frank Diepmaat.