

The Sister Ships

Captain John Grimes stood impassively in the port wing of his bridge as his ship, the round-the-world tramp Sonya Winneck, slid gently in toward her berth. But although his stocky body was immobile his brain was active. He was gauging speed, distances, the effect of the tide. His engines were stopped, but the vessel still seemed to be carrying too much way. He was stemming the ebb, but, according to the Port Directions there was sometimes—not always—an eddy, a counter current along this line of wharfage. In any case, it would be a tight fit. Ahead of him was Iron Baron, one of the steel trade ships: a huge, beamy brute with gigantic deck cranes almost capable of lifting her by her own bootstraps. In the berth astern was the Lone Star Line's Orionic, with even more beam to her than the Baron.

"Port!" ordered Grimes. "Hard over!"

"Hard a port, sir!" replied the quartermaster.

Sonya Winneck was accosting the wharf at a fairly steep angle now, her stem aimed at a bollard just abaft Iron Baron's stern. Grimes lifted his mouth whistle to his lips, blew one short, sharp blast. From the fo'c'sle head came the rattle of chain cable as the starboard anchor was let go, then one stroke of the bell to signal that the first shackle was in the pipe.

Grimes looked aft. Sonya Winneck's quarter was now clear of Orionic's bows. "Midships! Slow astern!"

He heard the replies of the man at the wheel and the Third Officer. He felt the vibration as the reversed screw bit into the water. But would slow astern be enough? He was about to order half astern, then realized that this was what he was getting, if not more. The transverse thrust of the screw threw Sonya Winneck's stern to port even as her headway was killed. Already a heaving line was ashore forward, and snaking after it the first of the mooring lines. Aft, the Second Mate was ready to get his first line ashore.

"Stop her," ordered Grimes. "That will do the wheel, thank you."

On fo'c'sle head and poop the self-tensioning winches were whining. Grimes, looking down from the bridge wing to the marker flag on the wharf, saw that he was exactly in position. He made the traditional "arms crossed above the head" gesture—Make her fast as she is—to the Chief Officer forward, the Second Officer aft. Then he walked slowly into the wheelhouse. The Third Officer was still standing by the engine control pedestal.

"Finished with engines, Mr. Denham," said Grimes coldly.

"Finished with engines, sir." The young man put the lever to that position. There was a jangling of bells drifting up from below.

"Mr. Denham . . ."

"Sir?" The officer's voice was an almost inaudible squeak. He looked frightened, and, thought Grimes, well he might be.

"Mr. Denham, I am well aware that in your opinion I'm an outsider who

should never have been appointed to command of this vessel. I am well aware, too, that in your opinion, at least, your local knowledge far surpasses mine. Even so, I shall be obliged if you will carry out my orders, although you will still have the right, the obligation, in fact, to query them—but not when I'm in the middle of berthing the bloody ship!" Grimes simmered down. "For your information, Mr. Denham, even I realized that slow astern would not be sufficient. I was about to order more stern power, then saw that you had taken matters into your own possibly capable but definitely unqualified hands."

"But, sir . . ."

Grimes's prominent ears had reddened. "There are no 'buts.' "

"But, sir, I tried to put her to slow astern. The lever jerked out of my hand to full."

"Thank you, Mr. Denham," said Grimes at last. He knew that the young man was not lying. "You'd better see the Engineer, or the Electrician, and get those controls fixed. The next time they might do the wrong thing, instead of the right one."

He went through the chartroom and then down to his quarters. Sonya, who had watched the berthing from the lower bridge, was there waiting for him. She got up from her chair as he entered the day cabin and stood there, tall and slim and graceful. Her right hand snapped up to the widow's peak of her shining auburn hair.

She said, "I salute you, Cap'n. A masterly piece of ship handling."

"Mphm," grunted Grimes.

"But, John, it was like something out of one of your own books." She went to the case on the bulkhead in which were both privately owned volumes and those considered by the Winneck Line to be fit and proper reading for its masters. From the Company's shelf she lifted *The Inter-Island Steamer Express*, by John Grimes. She read aloud, ". . . These captains, maintaining their timetables and berthing and unberthing their big, seagoing passenger ferries in the most appalling weather conditions, were, without doubt, among the world's finest ship handlers . . ."

"The weather conditions this morning aren't appalling," said Grimes. "In any case, that was on Earth. This is Aquarius."

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Aquarius, as its name implies, is a watery world.

It lies in toward the center from the Rim Worlds, fifty or so light-years to the galactic east of the Shakespearean Sector. It is Earth-type insofar as gravitation, atmosphere and climate are concerned, but geographically is dissimilar to the "home planet." There are no great land masses; there are only chains of islands: some large, some small, some no more than fly specks on even a medium scale chart. In this respect it is like Mellise, one of the planets of the Eastern Circuit. Unlike Mellise, it possesses no

indigenous intelligent life. Men colonized it during the Second Expansion—and, as was the case with most Second Expansion colonizations, it was discovery and settlement by chance rather than by design. Time and time again it happened, that disastrous, often tragic sequence of events. The magnetic storm, the gaussjammer thrown light millennia off course, her pile dead and the hungry emergency diesels gulping precious hydrocarbons to feed power to the Ehrenhaft generators, the long plunge into and through the Unknown; the desperate search for a world, any world, that would sustain human life . . .

Lode Messenger stumbled upon Aquarius and made a safe landing in the vicinity of the North Magnetic Pole. Like all the later ships of her period she carried a stock of fertilized ova, human and animal, a wide variety of plant seeds and an extensive technical library. (Even when the gaussjammers were on regular runs, as Lode Messenger had been, there was always the possibility that their people would finish up as founders of a new colony.) When the planet was rediscovered by Commodore Shakespeare, during his voyage of exploration out toward the Rim, the settlement was already well established. With the Third Expansion it accepted its quota of immigrants, but insisted that all newcomers work for a probationary period in the merchant or fishing fleets before, if they so wished, taking up employment ashore. Somebody once said that if you wanted to emigrate to Aquarius you had to hold at least an "Able-bodied seaman's" papers. This is not quite true, but it is not far from the truth. It has also been said that Aquarians have an inborn dislike and distrust of spaceships but love seagoing ships. This is true.

Grimes, although not an immigrant, was a seaman of sorts. He was on the planet by invitation, having been asked by its rulers—the Havenmaster and the Master Wardens—to write a history of the colony. For that he was well qualified, being acknowledged as the leading maritime historian, specializing in Terran marine history, in the Rim Worlds. His books: *The Inter-Island Steamer Express*, *The Flag Of The Southern Cross*, *The Western Ocean Greyhounds*, *Times of Transition*—had sold especially well on Aquarius, although in the worlds of the Rim Confederacy they were to be found mainly only in libraries, and in very few libraries at that.

And Commodore Grimes, Rim Worlds Naval Reserve, Master Astronaut, was more than just a writer about the sea. He held the rank of admiral—honorary, but salt water admiral nonetheless—in the Ausiphalian Navy, on Tharn. Captain Thornton, the Havenmaster, had said, "Legally speaking, that commission of yours entitles you to a Certificate of Competency as a Master Mariner. Then you can sail in command of one of our ships, to get the real feel of life at sea."

"I'm not altogether happy about it, Tom," Grimes had objected, not too strongly.

"I'm the boss here," Thornton assured him. "And, in any case, I'm not turning you loose until you've been through crash courses in navigation, seamanship, meteorology, cargo stowage and stability."

"I'm tempted . . ." Grimes had admitted.

"Tempted?" scoffed Sonya. "He's just dying to strut his bridge like the ancient mariners he's always writing about. His only regret will be that you Aquarians didn't re-create the days of sail while you were about it."

"Now and again I regret it myself," admitted the Havenmaster. "Fore and aft rig, a diesel auxiliary, electrical deck machinery—there'd be something quite fast enough for some of our trades and economical to boot. But I'm well known as an enemy of progress—progress for its own sake, that is."

"A man after my own heart," said Grimes.

"You're just a pair of reactionaries," Sonya had told them.

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I suppose I am a reactionary, Grimes had thought. But he enjoyed this world. It was efficiently run, but it was always recognized that there are things more important than efficiency. There was automation up to a certain point, but up to that certain point only. (But the Havenmaster had admitted that he was fighting a rearguard action to try to keep control of the ships in the hands of the seamen officers . . .) There was a love of and a respect for the sea. It was understandable. From the first beginnings of the colony these people had grown up on a watery world, and the books in their technical library most in demand had been those on shipbuilding, seamanship and navigation. Aquarius was poor in radioactives but rich in mineral oil, so the physicists had never been able, as they have on so many worlds, to take charge. The steam engine and the diesel engine were still the prime movers, even in the air, where the big passenger-carrying airships did the work that on other planets is performed by jet planes and rockets.

The surface ships were, by modern standards, archaic. Very few of them ran to bow thrusters—and those only ferries, cargo and passenger, to whom the strict adherence to a timetable was of paramount importance, whose masters could not afford to make a leisurely job of backing into a roll-on-roll-off berth and therefore required the additional maneuvering aid. There was some containerization, but it was not carried to extremes, it being recognized that the personnel of the cargo carriers were entitled to leisure time in port. Self-tensioning winches and, for cargo handling, cranes rather than derricks cut down the number of hands required on deck, and engine rooms were almost fully automated, with bridge control for arrival and departure maneuvers.

There were electronic navigational aids aplenty—radar, echometer, loran, shoran, an inertial system, position fixing by artificial satellite—but these the Havenmaster frowned upon, as did most of the senior shipmasters. He quoted from Grimes's own book, *Times Of Transition*, "The electronic wizards of the day, who were not seamen, failed to realize that a competent navigator, armed only with sextant, chronometer and ephemeris, together with a reasonably accurate log, can always fix the position of his ship with reasonable accuracy provided that there is an occasional break in the clouds for an identifiable celestial body to shine through. Such a navigator is never at the mercy of a single fuse . . ."

"And that, John, is what I'm trying to avoid," said Thornton. "Unless we're careful our ships will be officered by mere button pushers, incapable of running a series of P/Ls. Unluckily, not all the Master Wardens think as I do. Too many of them are engineers, and businessmen—and in my experience such people have far less sales resistance than we simple sailors."

"And what pups have they been sold?" asked Grimes.

"One that's a real bitch from my viewpoint, and probably from yours. You've heard of Elektra?"

"Yes," broke in Sonya. "Carinthian Sector. Third Expansion colonization." She grinned a little unkindly. "It's a planet where the minimum qualification for immigration is a doctorate in one of the sciences, preferably physics. But they have to let in occasional chemists, biologists and the like to keep the dump habitable."

"And they have quite a few, now, with degrees in salesmanship," went on the Havenmaster. "One of them was here a few years back."

"And he sold you this female pup," said Grimes.

"He did that. The Purcell Navigator. It's named, I suppose, after its inventor. It's a sealed box, with the gods know what sort of mess of memory fields and the like inside it. It's hooked up to all the ship's electronic navigational gear: gyro compass, radar, echometer, loran, shoran . . . Just name a pie and it's got a finger in it. Or a tentacle. It knows just where the ship is at any given second. If you ask it nicely it might condescend to tell you."

"You don't like it," said Grimes.

"I don't like it. To begin with, some of the shipowners—and this is a private enterprise planet, remember—feel that now the bridge can be automated to the same extent as the engine room, with just one man, the Master, in charge, snoring his head off on the chartroom settee and being awakened by an alarm bell just in time to rub the sleep out of his eyes and take his ship into port. But that's not the worst of it. Now the Institute of Marine Engineers is saying, 'If navigation is only a matter of pushing buttons, we're at least as well qualified as deck officers.' "

"I've heard that often enough," said Grimes. "Even in space."

"Does anybody know how these Purcell Navigators work?" asked Sonya.

"No. One of the terms of sale is that they must be installed by technicians from the world of manufacture, Elektra. Another is that they must not, repeat not, be tampered with in any way. As a matter of fact the Chief Electrician of the Carrington Yard did try to find out what made one tick. He was lucky to lose only a hand."

"It seems," said Grimes, "that I came here just in time."

"What do you mean, John?"

"Well, I shall be able to enjoy the last of the old days, the good old days, on Aquarius, and I shall have the material for a few more chapters to my Times Of Transition."

"He likes being morbid," said Sonya. "Almost as much as he likes being reactionary."

"Mphm," grunted Grimes. "Old-fashioned sounds better."

He got up from his chair, walked soundlessly over the carpeted floor to the bookshelves that formed a space divider in the huge, circular room that was called the Havenmaster's Lookout. He stared at the rows of books, most of them old (but in recent printings), only a few of them new. And they were real books, all of them, not spools of microfilm. There were the standard works on the old arts of the seaman, hopelessly out of date on most worlds, but not (yet) on this one. Brown, Nicholl, Norie, Riesenbergr . . . Lecky . . . Thomas . . . And the chronicles of the ancient explorers and navigators: Hakluyt, Dampier, Cook, Flinders, Bligh . . . Then there were the novels: Conrad (of course), McFee, Monsarrat, Herman Wouk, Forester . . . Grimes's hand went out to Melville's Moby Dick, and he remembered that odd Hall of Fame to which he had been whisked from the mountaintop on Kinsolving, and felt regret that he had not been able to meet Lieutenant Commander Queeg, Admiral Hornblower and Captain Ahab. (Were there any white whales in the Aquarian seas?)

He turned, saw that his wife and Captain Thornton had risen from their own seats, were standing staring out through the huge window that formed the entire outer wall of the Lookout that, in its turn, was the top level of the two thousand foot high Havenmaster's Control Tower. Above it was only the mast from which sprouted antennae, radar scanners, anemometers and the like, that was topped by the powerful, group-flashing Steep Island light.

Grimes walked slowly to join Sonya and his host, gazed out through the clear glass into the darkness. At regular intervals the beam of the light, a sword of misty radiance, swept overhead. Far to the south, a loom of luminescence on the distant sea horizon, was Port Stellar, and to east and west, fainter still, were other hazy luminosities, island cities, island states. Almost directly below was a great passenger liner, from this height no more than a gaudy, glittering insect crawling over the black carpet of the sea.

In spite of the insulation, the soundproofing, the thin, high whine of the wind was evident.

Sonya shivered. "The winds of change are blowing," she whispered.

"A seaman should be able to cope with the wind," said the Havenmaster. Then, to Grimes, "I wonder how you'll cope, John? I've arranged for you to take over Sonya Winneck at Port Stellar tomorrow."

"I'll get by," said Grimes.

"He always does," said Sonya. "Somehow."

* * *

Grimes fell in love with Sonya Winneck from the very start. She was, of course, his first sea command; nonetheless, she made an immediate appeal to the eye, even to the eye of one who, for all his admiral's commission, had very little practical knowledge of oceangoing ships. The lady was a tramp, but the tramp was also a lady.

Five hundred feet long overall, she was, with a seventy-foot beam. Bridge and funnel—the latter scarlet, with a black top and two narrow black bands—were amidships. Her upperworks and deck cranes were white, her hull green with a yellow ribbon. The boot-topping was red.

There is more to a ship than outward appearance, however. And Grimes, himself a shipmaster of long standing, knew this as well as the most seasoned master mariner on the oceans of Aquarius. But she had, he discovered, a fair turn of speed, her diesel-electric drive pushing her through the water at a good twenty knots. She was single screw, with a right-handed propeller. Her wheelhouse and chartroom reminded him almost of the spaceships that he was accustomed to command, but the electronic gadgetry was not unfamiliar to him after the sessions he had put in on the various simulators in the Havenmaster's Control Tower. The only thing that he did not like was the Purcell Navigator squatting like a sinister octopus in its own cage abaft the chartroom. Oh, well, he would make sure that his young gentlemen had no truck with the electronic monster. He hoped.

"I don't like it either," said the tall, skinny, morose Captain Harrell, whom Grimes was relieving. "But it works. Even I have to admit that. It works."

Then Harrell led Grimes down to the big, comfortable day cabin where the two wives—Mrs. Harrell very dumpy and mousy alongside the slender Sonya—were waiting. The Harrells' baggage, packed and ready to be carried ashore, was against one bulkhead. On a table stood bottles and glasses, a bowl of cracked ice. The officers came in then, neat in their slate gray shirt-and-shorts uniforms, their black, gold-braided shoulderboards, to say good-bye to their old captain, to greet their new one. There was Wilcox, Chief Officer, a burly, blond young (but not too young) giant. There was Andersen, the Second, another giant, but red-haired. There was Viccini, the Third, slight and dark. And Jones, the Engineer, a fat, bald man who could have been any age, came up to be introduced, and with him he brought Mary Hales, the Electrician, a fragile, silver-headed little girl who looked incapable of changing a fuse. Finally there came Sally Fielding, Stewardess-Purser, plump and motherly.

Glasses were charged. "Well, Captain," began Harrell. "Or should I say Commodore, or Admiral?"

"Captain," Grimes told him.

"Well, Captain, your name's on the Register and the Articles. You've signed the Receipt for Items Handed Over. You've a good ship, and a good team of officers. Happy sailing!"

"Happy sailing," everybody repeated.

"Thank you, Captain," replied Grimes. "And I'm sure that we all wish you an enjoyable leave."

"And how are you spending it, Mrs. Harrell?" asked Sonya.

"We've a yacht," the other woman told her. "Most of the time we shall be cruising around the Coral Sea."

"A busman's holiday," commented Grimes.

"Not at all," Harrell told him, grinning for the first time. "There'll just be the two of us, so there'll be no crew problems. And no electronic gadgetry to get in my hair either."

"Happy sailing," said Grimes, raising his glass.

"Happy sailing," they all said again.

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And it was happy sailing at first.

It did not take Grimes long to find his feet, his sea legs. "After all," he said to Sonya, "a ship is a ship is a ship . . ." He had been afraid at first that his officers and crew would resent him, an outsider appointed to command with no probationary period in the junior grades—but there hung about him the spurious glamour of that honorary admiral's commission, and his reputation as a maritime historian earned him respect. Sonya Winneck's people knew that he was on Aquarius to do a job, a useful job, and that his sailing as master of her was part of it.

Sonya enjoyed herself too. She made friends with the other women aboard: with Mary Hales, with Sally Fielding, with the darkly opulent Vanessa Wilcox, who had joined just before departure from Port Stellar, with Tessa and Teena, the Assistant Stewardesses, with the massive Jemima Brown who was queen of the beautifully mechanized galley. This shipboard life—surface shipboard life—was all so new to her, in spite of its inevitable resemblances to life aboard a spaceship. There was so much to see, so much to inquire into . . .

The weather was fine, mainly, with warm days and nights with just sufficient chill to provide a pleasant contrast. Grimes played with the sextant he had purchased in Port Stellar, became skilled in its use, taking altitude after altitude of the sun, of the planet's two moons, of such stars, planets and artificial satellites as were visible at morning and evening twilight. His officers watched with a certain amusement as he plotted position after position on the working chart, congratulated him when these coincided with those for the same times shown on the chart that was displayed on the screen of the Purcell Navigator. And they, he was pleased to note, tended to ignore that contraption, consulting it only when there was a wide variance between positions taken by two observers.

A shipmaster, however, is more than a navigator. Pilotage was not compulsory for the majority of the ports visited by Sonya Winneck, although in each one of them pilots were available. Grimes had taken a pilot sailing from Port Stellar, but after the six-day run between that harbor and Tallisport decided to try to berth the ship himself. After all, he had spent hours in the simulator and, since joining his ship, had read Ardley's Harbor

Pilotage from cover to cover.

This book, a standard, Terran, twentieth century work on the handling and mooring of ships, had been given him by the Havenmaster, who had said, "You should find this useful, John. Ardley was one of the authorities of his time. One thing I like about him—he says that anchors are there to be used. For maneuvering, I mean . . ." He laughed, then added, "But don't go making too much of a habit of it. It annoys chief officers!"

And so, having made a careful study of the large scale chart, the plan and the "sailing directions," Grimes stood in to Tallisport shortly after sunrise. The wheel was manned, the engines on stand by. According to the Tide Tables it was just two hours after first high water, which meant that Sonya Winneck would be stemming the ebb on her way in. (But, Wilcox had told him, complications were bound to crop up in this river harbor. All wharfage was on the western bank of the river, on the starboard hand entering—and to berth starboard side to is to risk damage in a vessel with a right-handed single screw, especially when the master is an inexperienced ship handler. Sometimes, however, an eddy, a countercurrent, set strongly along the line of wharfage, giving the effect of flood tide. If this eddy were running—and only visual observation when approaching the berth would confirm this or not—Grimes would be able to bring the ship's head to starboard, letting go the starboard anchor to stub her around, and then ease her alongside, port side to, with the anchor still on the bottom.)

Grimes stood into Tallisport. With his naked eye he could now see the Main Leads, two white towers, nicely in line. He told the Harbor Quartermaster to steer for them, to keep them right ahead. Yes, and there was the breakwater to port, with its red beacon . . . The red beacon was abeam now, and Sonya Winneck was sweeping into the harbor in fine style.

"Hadn't you better reduce speed, sir?" suggested the Third Officer.

"Mphm. Thank you, Mr. Viccini. Better make it slow—no, dead slow." "Dead slow, sir."

The rhythmic thudding of the diesel generators was unchanged, but there was a subtle diminution of vibration as the propeller revolutions decreased. The Main Leads were still ahead, but coming abeam to starboard were the two white obelisks that were the Leads into the Swinging Basin. "Port ten degrees," ordered Grimes. Would it be enough? Then he saw the ship's head swinging easily, heard the clicking of the gyro repeater. "Midships. Steady!"

He went out to the starboard wing of the bridge, looked aft. The Swinging Basin Leads were coming into line astern nicely. "Steady as you go!" he called.

Now Sonya Winneck was creeping up the last navigable reach of the river. To starboard was the line of wharfage, and behind it the clumps of greenery, spangled with blossoms like jewels, the white-walled houses, all clean and bright in the morning sun. But Grimes had no eye for scenery; he was too new to the game. Through his binoculars he studied the quay at which he was to berth, the furthest up river. Beyond it was a mess of

dredging equipment, all part and parcel of the port expansion plan. Which side to would it be? He had still to make up his mind.

"Sir," said the Third Officer.

"Yes?"

"It doesn't look as though the eddy, the countercurrent is running, sir."

"What makes you think that, Mr. Viccini?"

The young man pointed to the small craft—a yacht, two fishing vessels—past which they were sliding. Their upstream moorings were bar taut, their downstream lines hanging in bights. "Mphm," grunted Grimes. So it was ebb all over the river. He made up his mind. "Tell the Chief and Second Officers it will be starboard side to. Tell Mr. Wilcox to have his port anchor ready."

He came to starboard, lined the ship's head up on the up river end of the wharf. With his mouth whistle he blew one short, sharp blast. The chain cable of the port anchor rattled out through the pipe, the grip of the flukes in the mud acted as a brake. Sonya Winneck was still making way, but with the ebb against her and the drag of the anchor she was almost stopped.

This, thought Grimes, is easy, as he nosed in toward his berth.

But there was an eddy after all, and as soon as the ship was well inside it she was swept upstream toward the dredges, buoys and pipelines. "Hard a-starboard!" Grimes ordered. The anchor was still holding, luckily, and it acted as a fulcrum, checking the upstream motion of the stem while the stern was free to swing. The vessel was broadside on to the line of the river now, still approaching the wharf, but head on.

"Swing her, sir," suggested Viccini. "Get a headline ashore and tell the linesmen to run it to the down river end of the berth . . ."

Yes, thought Grimes, it'll work. It'd better . . .

A heaving line snaked ashore from the fo'c'sle head, was caught by one of the waiting linesmen. He and another man ran with it to the post indicated by the Chief Officer. Then the self-tensioning winch, whining, took the weight. Belatedly Grimes thought that he had better stop the engines, had better go astern before the ship's stem crashed through the wharf stringer. But the order had been anticipated. A good lad, Viccini . . . he thought. But he'd better not make a habit of this sort of thing.

Now Sonya Winneck's bows were being pulled downriver against the countercurrent, her stern still only a few feet from the stringer, the stern swinging in easily. "Stop her," Grimes ordered. She was alongside now, with the very gentlest of impacts, and the leading hand of the mooring gang was shouting up that she was in position.

Grimes filled and lit his pipe. "Make fast fore and aft," he said. "That'll do the wheel. Finished with engines." And then, "Mr. Viccini, I appreciate your help. Don't get me wrong, I like an officer to show initiative. But I think you should try to remember there's only one Master on the bridge."

"But, sir . . ."

"That's all right, Mr. Viccini. You did the right things, and I appreciate it. I'll try to do the right things myself in future."

Probably the Third Officer would have made a full explanation to Grimes during the day, but as soon as the gangway was out the Winneck Line's local agent came aboard with the mail, and among it was a letter saying that Viccini was to be paid off to commence his annual leave and would be relieved that morning by a Mr. Denham.

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Sonya Winneck continued her steady, round-the-planet progress, rarely straying north or south of the tropics. The met. screen in the chartroom rarely showed indications of disturbed weather conditions, and when it did these were invariably hundreds of miles from the ship's track. It was, Mr. Wilcox said to Grimes, the sort of weather you sign on for. The days and the nights passed pleasantly. At sea, there was sunbathing, swimming in the ship's pool that, when inflated, occupied all the foredeck between the forward and after cranes of the main hatch, deck golf and, in the evenings, a variety of games or a wide selection of programs on the playmasters installed throughout the accommodation. In port, the day's business over, there was so much to see, so much to do. There was real swimming from sun-washed, golden beaches, and surfing; and now and again Grimes was able to hire a small sailing yacht for the day and found this sport much more enjoyable than on the lakes of Lorn, where there was wind enough but it was always bitter. There were the waterfront taverns—and both Grimes and Sonya loved seafood. The Terran lobster, prawn, oyster and herring had all done well in the Aquarian seas, and there were the local delicacies: the sand crawlers, which were something like Earth's trilobites must have been, the butterfly fish and the sea steaks.

It was, for both of them, a holiday, but for Sonya it was a holiday that palled in time. It was all right for Grimes; he had his navigation to play with, his pilotage and, when he got around to it, research to carry out on the projected history and a chapter or so of it to write. His wife, however, was becoming bored.

It was a longish run between Lynnhaven and Port Johnson, all of seven days. During it Sonya found stacks of magazines in one of the lockers in the ship's office, back numbers of the Merchant Shipping Journal, dating back for years. She brought a pile of them up to the master's day cabin. She said, "These could be useful to you, John." Grimes picked one up, leafed through it. "Mphm. All rather dry stuff. At the moment I'm trying to get the essential feel of this planet."

"But they're full of information."

"So's a dictionary."

She said, "Suppose I go through them, making notes of anything that might be useful to you . . ."

"That," he told her, "is very sweet of you, Sonya."

She made a grimace at him, then settled down with the supply of factual reading matter. Everything was there: specifications of new tonnage, sales, breakings up, wrecks, strandings, collisions, courts of inquiry. These latter were of interest to her. She could see how, time and time again, the unfortunate Master was given only seconds to decide what to do, while learned judges, counsel and marine assessors had weeks to decide what should have been done. And then, as she read on, nagging hints of some sort of pattern began to form in her mind, her trained mind. After all, she had been an intelligence officer, and a good one, in the Federation's Survey Service.

It seemed to her that the Winneck Line ships were getting into more than their fair share of trouble, with Lone Star Line running a close second. She knew little about the Lone Star Line, although she had seen their ships often enough in various ports and, with Grimes, had been a guest aboard a few of them for drinks and meals. They were well-run, well-maintained vessels. She could speak with more authority regarding the Winneck Line; Sonya Winneck was typical of their newer tonnage. There wasn't the same spit and polish as in the Lone Star, but there was a very real efficiency.

She read again the details of one of the collision cases. Olga Winneck had been bound up the Great Muddy River to Steelport, Suzanne Winneck had been outbound. The ships had passed each other—or had attempted to pass each other—in Collier's Reach, the navigable channel in that locality being both deep and wide. Suddenly Olga Winneck had taken a sheer to port and, in spite of the efforts of both Masters to avert collision, had struck Suzanne Winneck on her port quarter, holing her so badly that she was obliged to return to dock for repairs.

There was the transcription of evidence:

Mr. Younghusband (counsel for Havenmaster's Office): Can you tell me, Mr. Margolies, what orders were given by Captain Hazzard?

Mr. Margolies (Third Officer of Olga Winneck): Yes, sir. The Master ordered, "Hard a-starboard! Stop engines! Full astern!"

Mr. Younghusband: And were these orders carried out?

Mr. Margolies: Of course. I at once put the controls to full astern.

Mr. Younghusband: And what about the wheel? Quartermasters have been known to put the helm the wrong way, especially in an emergency.

Mr. Margolies: The quartermaster put the wheel hard to starboard.

Mr. Younghusband: And did you look at the rudder indicator? It has been suggested that steering gear failure was a cause of the collision.

Mr. Margolies: Yes, I looked. The pointer was hard over to starboard.

* * *

And so it went on. It was established finally that both Masters had done all the right things, although Captain Hazzard should have realized that a delay was inevitable when switching directly from full ahead to full astern.

It was thought that a tidal eddy had been responsible for the collision. The court recommended that ships passing in Collier's Reach keep each well to their own sides of the channel, also that speed be reduced.

That was one case. There were others, and Sonya made notes, drew up tables. There had been collisions in narrow channels and in the open sea. Some had been in clear weather, some in conditions of reduced visibility. The causes were various: tidal eddies, steering gear failure, radar breakdown and, inevitably, errors of judgment. And the Winneck Line and the Lone Star Line were having more than their fair share of marine casualties . . . It was odd, she thought. Odd. There was something rotten in the state of Aquarius.

She asked Grimes if she could browse through the ship's files of correspondence. He said, "Of course. They aren't top secret." She found the one labeled Damage Reports. It wasn't especially bulky. But its contents were interesting.

"Sir, (she read)

I regret to have to report that whilst berthing this morning at No.3 Inner East, Port Kantor, the stem of the vessel came into heavy contact with the starboard side of the Lone Star Line's Canopic. Damage to Sonya Winneck was superficial only—please see enclosed sketch—but that to the other ship was considerable and, I am informed by Canopic's master, will necessitate dry-docking.

I entered the harbor at 0545 hrs., standing in on the Main Leads. When clear of the breakwaters I reduced to dead slow and altered course to port, steering for the shore end of No.3 Jetty. Visibility was good, wind was ENE at about 10 knots, tidal influence, it being just after low water slack, was negligible.

When my bridge was just abeam of Canopic's stern, however, Sonya Winneck took a sudden sheer to port. I at once ordered a hard a-starboard, stopped the engines and ordered full astern. Also I signaled to the Chief Officer to let go the starboard anchor, but unfortunately it jammed in the pipe, and was released too late to have any effect. In spite of the application of full starboard rudder and full stern power, contact occurred at 0555 hrs.

It is possible that I underestimated the force of the wind while standing in to my berth, but, even so, find it hard to account for the sudden sheer to port . . ."

But Sonya Winneck was sometimes at the receiving end.

"Sir,

I have to report that this afternoon, at 1327 hrs., the vessel was struck by the Company's Elizabeth Winneck, which same was proceeding down river, bound for sea. Unfortunately, it being Saturday afternoon, with no work in progress, no officers were on deck at the time of the contact, and the Company's gangway watchman was at his place of duty, at the head of the gangway, on the inshore side of the vessel.

Damage, fortunately, was not extensive and all above the waterline. My Chief Officer's report is enclosed herewith. No doubt you will be hearing from Captain Pardoe of Elizabeth Winneck . . ."

There were several more letters, some going into great detail, others composed on the good old principle of "least said, soonest mended." With two exceptions the other ships concerned were units of either the Winneck or the Lone Star fleets. One of the exceptions was the contact with Iron Duchess. On that occasion Captain Harrell, Grimes's predecessor, had been trying to berth his ship during a howling gale. The other occasion was a collision with a ferry steamer in Carrington Harbor, with fortunately no loss of life.

So, Sonya wondered, just what was the connection between the Winneck Line and the Lone Star Line? She borrowed from the Chief Officer's office the bulky Aquarian Registry in which was listed comprehensive details of all the commercial shipping of the planet. Against the name of each ship were the lines of information: tonnage, gross, net and deadweight; propulsion; speed; length overall, length between posts, breadth . . . And builders.

She looked up her namesake first. She had been built by the Carrington State Dockyard. She looked up Canopic. Her builders were Varley's Dockyard, in Steelport. She looked up Elizabeth Winneck—another Varley's job. So it went on. The majority of the collisions had occurred between ships constructed at those two yards.

And what about the contact that her husband, Grimes, had so narrowly averted, that time coming into Newhaven? What was the name of the ship that he had almost (but not quite) hit? Orionic . . . She looked it up. Carrington State Dockyard. She murmured, "All us Carrington girls must stick together . . ."

"What was that?" demanded Grimes, looking up from his book.

"Just a thought," she told him. "Just a passing thought."

"Mphm."

"Do ships really have personalities?" she asked.

He grinned. "Spacemen and seamen like to kid themselves that they do. Look at it this way. You're bringing a ship in—a spaceship or a surface ship—and you've failed to allow for all the factors affecting her handling. Your landing or berthing isn't up to your usual standard. But you kid yourself, and your officers that it wasn't your fault. You say, 'She was a proper little bitch, wasn't she? Wouldn't do a thing right . . .' But you were the one who wasn't doing a thing right."

She said, "I've handled ships too."

"I know, my dear. I've seen you do it. Your landing technique is a little too flashy for my taste."

"Never mind that now. I'm talking about surface ships. Is there any reason to believe, John, that two ships built to the same design, but in different

yards, would have conflicting personalities?"

Grimes was starting to get annoyed with his wife. "Damn it all," he expostulated, "spacemen's superstitions are bad enough! But I'm surprised that you, of all people, should pay any heed to seamen's superstitions."

"But are they superstitions? Couldn't a machine absorb, somehow, something of the personalities of the people who built it, the people who handle it?"

"Hogwash," said Grimes.

"If that's the way you feel about it . . ." She slumped in her deep chair, struck a cigarillo on her thumbnail, put it to her mouth, looked at her husband through the wreathing smoke. "All right. Before you get back to your precious research, what do the initials P N mean?"

"In what context?"

Sonya nudged with a slim, sandaled foot the bulky Aquarian Registry, which lay open on the deck in front of her. "It's printed against the names of some of the ships, the newer ships—but only those built by the Carrington State Dockyard or Varley's."

"P . . . N . . ." muttered Grimes. "P . . . N . . . ? We can ask the Mate, I suppose . . ."

"But you don't like to," she scoffed. "You're the Captain, you know everything."

"Almost everything," he qualified smugly. The ship lurched suddenly, and Grimes knew the reason. When last he had been on the bridge he had been slightly perturbed by the chart presented in the met. screen, televised from one of the weather satellites. Ahead of Sonya Winneck was a deepening depression, almost stationary. He had considered altering course to try to avoid it—but, after all, he had a big, powerful ship under his feet, well found, stoutly constructed. And, he had thought, he would not like to be remembered on this world as a fair weather sailor. Even so, he saw in his mind's eye that chart—the crowded isobars, the wind arrows with their clockwise circulation. Now the heavy swell running outward from the center, like ripples from a pebble dropped into a pond, was beginning to make itself felt. He looked at the aneroid barometer on the bulkhead. The needle had fallen ten millibars since he had last set the pointer, two hours ago.

He said, "I fear we're in for a dirty night."

She said, "It's what you're paid for."

He grunted, got up from his chair, went up to the bridge by the inside companionway to the chartroom. He looked at the instruments over the chart table. According to the Chernikeeff Log, speed through the water had already dropped by half a knot. The barograph showed a fairly steep fall in pressure. The met. screen, set for the area through which the ship was passing, showed a chart almost identical with the one that he had last seen.

He went out to the bridge. The sky was mainly overcast now, with the larger of the two Aquarian moons, almost full, showing fitfully through ragged breaks in the cloud. There was high altitude wind, although it had yet to be felt at sea level. But the swell seemed to be increasing.

Young Mr. Denham, the Third Officer, came across from the wing of the bridge. He said, rather too cheerfully, "Looks like a blow, sir."

"We can't expect fine weather all the time," Grimes told him. He stood with his legs well apart, braced against the motion of the ship. He wondered if he would be seasick, then consoled himself with the thought that both the actual Lord Nelson and the fictional Lord Hornblower had been afflicted by this malady.

Mr. Denham—since Grimes had torn that strip off him regarding the unauthorized engine movements he had tended to overcompensate—went on chirpily, "At this time of the year, sir, the revolving storms in these waters are unpredictable. In theory the center should be traveling east, away from us, but in practice it's liable to do anything."

"Oh?"

"Yes, sir. I remember one when I was in the old Sally—Sara Winneck, that is. Captain Tregenza tried to outmaneuver it; we had a pile of deck cargo that trip, teak logs from Port Mandalay. But it was almost as though it had a brain of its own. Finally it sat right on top of us and matched speed and course, no matter which way we steered. We lost all the cargo off the foredeck, and the wheelhouse windows were smashed in . . ."

Cheerful little swine . . . thought Grimes. He stared ahead into the intermittently moonlit night, at the long swell that was coming in at an angle to the ship's course. Sonya Winneck's bows lifted then dipped, plunging into and through the moving dune of water. They lifted again, and a white cascade poured aft from the break of the fo'c'sle, spangled with jewels of luminescence. Grimes said, "Anyhow, we have no deck cargo this trip."

"No, sir."

He remained on the bridge a while longer. There was nothing that he could do, and he knew it. The ship was far from unseaworthy, capable of riding out a hurricane. There was ample sea room; the Low Grenadines were many miles to the north of her track. And yet he felt uneasy, could not shake off a nagging premonition. Something, he somehow knew, was cooking. But what, when and where?

At last he grunted, "You know where to find me if you want me. Good night, Mr. Denham."

"Good night, sir."

* * *

Back in his quarters his uneasiness persisted. He told Sonya that he would sleep on the settee in his day cabin, so as to be more readily available in

the event of any emergency. She did not argue with him; she, too, felt a growing tension in the air. It could have been that she was sensitive to his moods but, she told him, she didn't think so. She quoted, "By the pricking of my thumbs something wicked this way comes."

He laughed. "A tropical revolving storm is not wicked, my dear. Like any other manifestation of the forces of nature it is neither good nor evil."

She repeated, "Something wicked this way comes."

They said good night then, and she retired to the bedroom and he disposed himself comfortably on the settee. He was rather surprised that sleep was not long in coming.

But he did not enjoy his slumber for more than a couple of hours. A particularly violent lurch awakened him, almost pitched him off his couch. He switched on a light, looked at the aneroid barometer. The needle was down another twenty millibars. And, in spite of the well-insulated plating of the accommodation, he could hear the wind, both hear and feel the crash of the heavy water on deck. He thrust his feet into his sandals and, clad only in his shorts (Master's privilege) went up to the bridge. He found the Second Officer—it was now the middle watch—in the wheelhouse, looking ahead through the big clear view screen. Grimes joined him. When his eyes became accustomed to the semi-darkness he could see that the wind was broad on the starboard bow; he could see, too, that with each gust it was veering, working gradually around from southeast to south. Southern Hemisphere, he thought. Clockwise circulation, and the low barometer on my left hand . . . Now that he had something to work on he might as well avoid the center with its confused, heavy seas. "Bring her round to starboard easily," he told the Second Officer. "Bring wind and sea ahead."

"Wind and sea ahead, sir." The officer went to the controls of the autopilot. Grimes watched the bows swinging slowly, then said, "That should do, Mr. Andersen."

"Course one three five now, sir."

Grimes went back into the chartroom, looked down at the chart, busied himself briefly with parallel rulers and dividers. He grunted his satisfaction. This new course took him even further clear of the Low Grenadines, that chain of rocky islets that were little more than reefs. There was nothing to worry about.

He was aware that Sonya was standing behind him; there was a hint of her perfume, the awareness of her proximity. He said without turning around, "Passengers not allowed on the bridge."

She asked, "Where are we?"

He indicated with the points of the dividers the penciled cross of the position, the new course line extending from it. "I'm more or less, not quite heaving to. But she's easier on this heading, and it pulls her away from the eye of the storm."

She said, "There's a lot to be said for spaceships. They don't pitch and roll."

When you're in your virtuous couch you're not slung out of it."

"We take what comes," he told her.

"We haven't much option, have we?"

Then they went below again, and she made coffee, and they talked for awhile, and eventually Grimes settled down to another installment of his broken night's sleep.

The next time he awakened it was by the insistent buzzing of the bridge telephone, which was in his bedroom. He rolled off the settee, stumbled through the curtained doorway. Sonya, looking rather hostile, lifted the instrument off its rest, handed it to him.

"Master here," said Grimes into the mouthpiece.

"Second Officer, sir. There's a Mayday . . ."

"I'll be right up."

The Second Mate was in the chartroom, plotting positions on the chart. He straightened as Grimes came in, turned to speak to him. "It's Iron Warrior, sir. One of their big bulk carriers. She's broken down, lying in the trough, and her cargo's shifted. Zinc concentrates."

"Not good. Where is she?"

The young man stood away from the chart so that Grimes could see, indicated the other ship's position with the point of a pencil. "Here, sir. Just twenty miles south of the Low Grenadines. And she reports a southerly gale, the same as we're getting."

"Not good," said Grimes again. "Not good at all. She'll be making leeway, drifting . . ." Swiftly he measured the distance between Sonya Winneck's last recorded position—electronic navigation had its good points!—and that given by the disabled ship. One hundred and fifty nautical miles . . . And Sonya Winneck would have to turn, putting the wind right aft. With her high superstructure this should mean a marked increase of speed . . . Suppose she made twenty knots over the ground . . . Twenty into one hundred and fifty . . . Seven and a half hours . . . He looked at the chartroom clock. Oh three thirty . . .

"Put your standby man on the wheel, Mr. Andersen," he ordered. "I'm bringing her round manually."

He went out into the wheelhouse. Both moons were down, but the sky had cleared. Overhead the scattered stars were bright; and bright, too, were the living stars thrown aloft and back in the sheets of spray each time that the ship's prow crashed down to meet the racing seas. Grimes stood there, waiting, hoping for a lull, however brief. He glanced behind him, saw that the wheel was manned and that Andersen was standing beside the helmsman.

He looked ahead again. It seemed to him that the pitching of the ship was a little less pronounced, that sea and swell were a little less steep. "Port,"

he ordered. "Easily, easily . . ." He heard the clicking of the gyro-repeater as the ship's head started to come round. And then he saw it, broad on the starboard bow, a towering cliff of water, white capped, a freak sea. "Hard a-port!" Grimes shouted. "Hard over!"

She responded beautifully, and the clicking of the repeater was almost one continuous note. She responded beautifully, but not quite fast enough. The crest of the dreadful sea was overhanging the bridge now, poised to fall and smash. Still she turned, and then she heeled far over to port, flinging Grimes and the Second Officer and the helmsman into an untidy huddle on that side of the wheelhouse. She shuddered as the tons of angry water crashed down to her poop, surged forward along her decks, even onto the bridge itself. There was a banging and clattering of loose gear, cries and screams from below. But miraculously she steadied, righted herself, surging forward with only a not very violent pitching motion.

Somehow Grimes got to his feet, disentangling himself from the other two men. He staggered to the untended wheel, grasped the spokes. He looked at the repeater card. Three two oh . . . Carefully he applied starboard rudder, brought the lubber's line to the course that had been laid off on the chart, three three five. He saw that Andersen and the seaman had recovered their footing, were standing by awaiting further orders.

"Put her back on automatic," he told the Second Officer. "On this course." He relinquished the wheel as soon as this had been done. "Then take your watch with you and make rounds through the accommodation. Let me know if anybody's been hurt."

"Who the hell's rocking the bloody boat?" It was Wilcox, the Chief Officer. Then, as he saw Grimes by the binnacle, "Sorry, sir."

"It's an emergency, Mr. Wilcox. A Mayday call. Iron Warrior, broken down and drifting on to the Low Grenadines. We're going to her assistance."

"What time do you estimate that we shall reach her, Captain?"

"About eleven hundred hours."

"I'd better start getting things ready," replied the Mate.

Grimes went back into the chartroom, to the transceiver that had been switched on as soon as the auto-alarm had been actuated by the Mayday call. "Sonya Winneck to Ocean Control, Area Five," he said.

"Ocean Control to Sonya Winneck. I receive you. Pass your message."

"I am now proceeding to the assistance of Iron Warrior. Estimated time of visual contact ten thirty hours, Zone Plus Seven."

"Thank you, Sonya Winneck. Pleiadic cannot be in the vicinity until thirteen hundred hours at the earliest. Please use Channel Six when working Iron Warrior. Call me on Sixteen to keep me informed. Over."

He switched to Channel Six. "Sonya Winneck to Iron Warrior. . ."

"Iron Warrior here, Sonya Winneck." The other Captain's voice, was,

perhaps, a little too calm.

"How are things with you, Iron Warrior?"

"Bloody awful, to be frank. A twenty degree list, and my boats and rafts smashed on the weather side. Estimated rate of drift, two knots."

"I should be with you in seven hours," said Grimes. "I shall try to take you in tow."

"We'll have everything ready, Captain,"

"Good. We shall be seeing you shortly. Over and standing by."

Wilcox had come into the chartroom. He said, "Everybody's been informed, sir. The Chief reckons that he can squeeze out another half knot."

"Anybody hurt when she went over?"

"Only minor lacerations and contusions, sir."

"Such as this," announced Sonya, who had joined the others in the chartroom, putting a cautious hand up to the beginnings of a black eye. "But it's in a good cause."

* * *

Iron Warrior was not a pretty sight.

She lay wallowing in a welter of white water, like a dying sea beast. The seas broke over her rust-colored hull in great explosions of spray, but now and again, during brief lulls, the extent of the damage that she had sustained could be made out. She was a typical bulk carrier, with all the accommodation aft, with only a stumpy mast right forward and her mainmast growing out of her funnel, and no cargo gear but for one crane on the poop for ship's stores and the like. That crane, Grimes could see through his binoculars, was a twisted tangle of wreckage. That would explain why the Warrior's Captain had not used oil to minimize the effect of breaking waves; probably the entrance to the storerooms was blocked. And there must be some other reason why it had not been possible to pump diesel fuel overside—even though a mineral oil is not as effective as vegetable or animal oil it is better than nothing. The side of the bridge seemed to be stove in, and under the boat davits dangled a mess of fiberglass splinters.

Beyond her—and not far beyond her, a mere three miles—was the black, jagged spine of Devlin's Islet, dead to leeward. It seemed more alive, somehow, than the stricken ship, looked like a great, malevolent sea monster creeping nearer and ever nearer through the boiling surf toward its dying prey.

Grimes was using oil, a thin trickle of it from his scuppers, wads of waste soaked in it thrown overside to leeward. Luckily there had been plenty of it in Sonya Winneck's storerooms—fish oil for the preservation of exposed wire ropes, a heavy vegetable oil for the treatment of wooden decks and brightwork. It was beginning to have effect; the thin, glistening surface film

was a skin over the water between the two ships, an integument that contained the sea, forcing some semblance of form upon it. The swell was still there—heavy, too heavy—but the waves were no longer breaking, their violence suppressed.

Aft, Andersen and his men were standing by the rocket gun. The heavy insurance wire was already flaked out ready for running, its inboard end taken not only around both pairs of bitts—these, in a ship with self-tensioning winches, were rarely used for mooring, but there was always the possibility of a tow—but also around the poop house. The sisal messenger was coiled down handy to the line-throwing apparatus.

On the bridge, Grimes conned his ship. She was creeping along parallel to Iron Warrior now, at reduced speed. She was making too much leeway for Grimes's taste; unless he was careful there would be two wrecks instead of only one. Too, with the swell broad on the beam Sonya Winneck was rolling heavily, so much so that accurate shooting would be impossible. But the necessary maneuvers had been worked out in advance. At the right moment Grimes would come hard to port, presenting his stern to the Iron Warrior. Andersen would loose off his rocket, aiming for a point just abaft the break of the other ship's fo'c'sle head, where men were already standing by. They would grab the light, nylon rocket line, use it to pull aboard the heavier messenger, use that to drag the end of the towing wire aboard, shackling it to the port anchor cable. After that, it would be plain sailing (Grimes hoped). He would come ahead slowly, slowly, taking the weight gently, trying to avoid the imposition of overmuch strain on either vessel. Slowly but surely he would pull the wounded Warrior away from the hostile fortifications. (Come off it, Grimes, he told himself sternly. Don't be so bloody literary.)

"Hard a-port!" he ordered.

"Hard a-port, sir!" The clicking of the repeater was audible above the shrieking of the wind.

"Ease her . . . Midships . . . Steady! Steady as you go!"

Sonya Winneck hung there, her stern a bare two cables from the side of Iron Warrior. Grimes thought, I cut that ratlier too close. But at this range it'll be impossible for Andersen to miss. To the Third Officer, at the radar, he called, "Are we opening the range?"

"Slowly, sir."

It was time that Andersen got his rocket away. The ship was not pitching too badly; firing at just the right moment should not be difficult. As long as the missile passed over the target it would be a successful shot. Grimes went out to the wing of the bridge to watch. The air scoop dodger deflected the wind, throwing it up and over, so it was not too uncomfortable away from the wheelhouse.

Andersen fired—and at precisely the wrong moment the ship's head fell off heavily to starboard. The rocket streaked through the air, arcing high, a brief orange flare against the gray, ragged clouds, a streamer of white smoke, and behind it the fluorescent yellow filament of the nylon line.

Inevitably it missed, finally splashing to the sea well forward of and beyond Iron Warrior's bows.

Grimes didn't see it drop. He stormed into the wheel-house, bawled at the helmsman, "What the hell do you think you're playing at?"

"It's the wheel, sir," The man's voice was frightened. "It turned in my hands. I can't budge it!"

The ship was coming round still, turning all the time to starboard. The gale force wind and her own engines were driving her down on to the helpless Warrior. "Stop her!" ordered Grimes. "Full astern!"

Denham was still at the radar, so Wilcox jumped to the engine controls. He slammed the lever hard over to the after position. Still the ship was making headway—but, at last slowing. She stopped at last, her stern scant feet from Iron Warrior's exposed side. Grimes could see the white faces of her people as they stared at him, as they watched, in horrified disbelief, this rescuer turned assassin.

Sonya Winneck was backing away now, her stern coming up into the wind. She was backing away, but reluctantly, Wilcox shouted, "Denham, come and give me a hand! I can't keep this bloody handle down!"

Grimes dragged his attention away from the ship he had so nearly rammed to what was happening on his own bridge. Both the Chief and Third Officer—and Wilcox was a big, strong man—were having to exert all their strength to keep the metal lever in its astern position. It was jerking, forcing itself up against their hands.

Sonya—who until now had been keeping well out of the way—grabbed him by the arm. "Tell the Chief to put the engine controls on manual!" she screamed. "I know what's happening!"

"What's happening?"

"No time now to tell you. Just put her on manual, and get Lecky up here!"

Grimes went to the telephone, rang down to the engine-room. "Manual control, your end, Mr. Jones," he ordered. "Keep her on full astern until I order otherwise. And send Miss Hales up to the bridge. At once."

Thankfully, Wilcox and Denham released their painful grip on the bridge control lever. On the console the revolution indicator still showed maximum stern power. Ahead, the distance between the two ships was fast diminishing. From the VHF transceiver came a frightened voice, "What's happening, Sonya Winneck? What's happening?"

"Tell him," said Grimes to Denham, "that we're having trouble with our bridge controls. We'll get a line aboard as soon as we can."

Wilcox, watching the indicator, yelled, "She's stopped! The bitch is coming ahead again!"

Sonya said urgently, "There's only one thing to do, John. Shut off the Purcell Navigator. Iron Warrior has P N against her name in the

Registry—and she was built by Varley's." She turned to Mary Hales, who had just come onto the bridge. "Mary, switch off that bloody tin brain, or pull fuses, or something—but kill it!"

The pretty little blonde was no longer so pretty. On one side of her head the hair was charred and frizzled, and her smooth face was marred by an angry burn. "We've been trying to," she gasped. "The Chief and I. It won't let us."

"She's coming astern again," announced Wilcox. "She's . . . No, she's stopped . . ."

"Watch her, Mr. Wilcox," ordered Grimes. He ran with his wife and the Electrician to the house abaft the chartroom in which the Purcell Navigator lived. It squatted there sullenly on its four stumpy legs, the dials set around its spherical body glaring at them like eyes. From its underside ran armored cables, some thick and some thin—that one leading aft and down must be the main power supply, the ones leading into the wheelhouse and chartroom would be connected to various controls and navigational equipment. On the after bulkhead of the house was a switchboard and fuse box. Mary Hales went straight to this, put out her hand to the main switch. There was a sudden, intense violet flare, a sharp crackling, the tang of overheated metal. The girl staggered back, her blistered hands covering her eyes. "That's what happened to the engineroom switchboard!" she wailed. "It's welded itself in the On position!" Then, using language more seamanlike than ladylike, she threw herself at the fuse box. She was too late—but perhaps this was as well. Had she got the lid open she would have been blinded.

Still cursing softly, she grabbed a spanner from her belt. Her intention was obvious; she would unscrew the retaining nut holding the main supply lead firmly in its socket. But an invisible force yanked the tool out of her hand, threw it out of the open door.

Grimes watched, helpless. Then he heard Sonya snarling, "Do something. Do something, damn you!" She thrust something into his right hand. He looked down at it. It was the big fire ax from its rack in the chartroom. He got both hands about the haft, tried to swing up the head of the weapon, staggered as the magnetic fields which now were the machine's main defense tugged at it. But he lifted the ax somehow, brought it crashing down—and missed his own right foot by a millimeter. Again he raised the ax, straining with all his strength, and again struck at the thick cable. The ship lurched heavily, deflecting his aim, and, fantastically, the magnetic deflection brought the head back to its target. The armored cable writhed away from the blow, but not in time, not enough. The keen edge bit home, in a coruscation of violet sparks. And Mary Hales, with a smaller ax that she had found somewhere, was chopping away, sobbing and cursing; and Sonya was jabbing with a heavy screwdriver at the thing's "eyes"—and so, at last, it died.

* * *

And so it died, damaged beyond its built-in powers of self-regeneration. (Mary Hales made sure of that.) And so Grimes was able to get a line

aboard Iron Warrior, and the Warrior's people got the towing wire shackled onto their anchor cable, and slowly, slowly but surely, the crippled ship was dragged to safety, away from the avidly waiting fangs and talons of Devlin's Islet; the rocky teeth and claws that, when the tow finally commenced, had been less than half a mile distant.

The Purcell Navigator was dead, and its last flares of energy had destroyed or damaged much more than itself. The gyro-compass and the autopilot were inoperative (but the ship had a magnetic compass and hand steering). Loran and radar were burned out, inertial navigator and echometer were beyond repair, even the Chernikeeff Log was useless. But Grimes was not worried. He had sextant, chronometer, ephemeris and tables—and the great navigators of Earth's past had circled their globe with much less in the way of equipment. In the extremely unlikely event of his not knowing where he was he could always ask Iron Warrior for a fix—but he did not think that he would have to do so.

He did, however, urge the Warrior's Master to put his own Purcell Navigator out of commission, explaining why in some detail. Then he went to the house abaft the chartroom where, under the direction of Mary Hales, Wilcox and his men were loosening the holding down bolts, disconnecting the cables that had not already been cut. (There might still be a flicker of life in the thing, some capability of self-repair.) He watched happily as the Mate and three brawny ratings lifted the spherical casing from the deck, staggered with it out the door.

"What shall we do with it, sir?" asked the Mate.

"Give it a buoyancy test," ordered Grimes. He followed the men to the side rail of the bridge, watched as they tipped it over. It sank without a trace.

* * *

Grimes was relieved of his command in Longhaven, after the successful completion of the tow, and flown back to Steep Island, accompanied by Sonya. Neither he nor his wife felt very strong when they boarded the airship—the crews of both Sonya Winneck and Iron Warrior had united in laying on a farewell party more enthusiastic than restrained. ("You must be glad to see the back of us," Sonya had remarked at one stage of the proceedings.) Even so, old and tired as he was feeling, Grimes had insisted on seeing the airship's captain so as to be assured that the craft was not fitted with a Purcell Navigator. Then, he and his wife went to their cabin and collapsed into their bunks.

Steep Island, although not officially an airport, had a mooring mast, so a direct flight was possible. When the time came for Grimes and Sonya to disembark they were feeling better and, in fact, had been able to put the finishing touches to their report.

Captain Thornton, the Havenmaster, welcomed them warmly but was obviously anxious to hear what they had to tell him. In minutes only they were all seated in the Havenmaster's Lookout and Thornton was listening intently as they talked.

When they were finished, he smiled grimly, "This is good enough," he said.

"It's good enough even for the Council of Master Wardens. I shall issue orders that those infernal machines are to be rendered inoperative in every ship fitted with them, and that no more are to be put aboard any Aquarian vessel. Then we make arrangements to ship them all back to where they came from."

Grimes was surprised, and said so. He was used to having his recommendations adopted eventually, but in most cases there was a lot of argument first.

Thornton laughed. "What you've said is what I've been saying, John, for months. But nobody listens to me. I'm just a reactionary old shellback. But you, sir, as well as being a well-known maritime historian, have also one foot—at least—in what to us is still the future. You're a master astronaut, you hold the rank of commodore in the Space Navy of your Confederacy. They'll listen to you, when they won't listen to me."

"It's Sonya they should listen to," Grimes said. "She's a spacewoman and an intelligence officer. She tied the loose ends together."

"But it was all so obvious," she said smugly. "Two yards, and two yards only, on this planet licensed to fit the Purcell Navigator: Varley's and the Carrington State Dockyard. Two . . . sororities? Yes, two sororities of ships, the Varley Sisterhood and the Carrington Sisterhood, each hating the other. Limited intelligence, but, somehow, a strong, built-in spite, and also a strong sense of self-preservation. That much, I think, was intended by those electronic geniuses on Elektra—and possibly more, but I'll come to that later.

"Anyhow, if a Carrington sister saw a chance of taking a swipe at a Varley sister without much risk of damage to herself she'd take it. And vice versa. Hence all the collisions, and all the minor berthing accidents. Now and again, of course, the sense of self-preservation worked to everybody's benefit . . ." She smiled at her husband rather too sweetly. "I know of at least one bungled berthing where everything, almost miraculously, came right in the end . . ."

"But what's behind it all?" asked the Havenmaster. "You're the Intelligence Officer. Is it, do you think, intentional on somebody's part?"

"I don't know, Tom. I'd have to snoop around on Elektra to find out, and I doubt if the Elektrans would let me. But try this idea on for size . . . What if the Elektrans want to make Aquarius absolutely dependent upon them?"

"It could be . . ." mused Thornton. "It could be . . ." He went up, walked to the bookshelves, took out a book, opened it. It was Grimes's own Times Of Transition. The Havenmaster leafed through it to find the right place. He read aloud, " 'And so was engendered a most unseamanlike breed of navigator, competent enough technicians whose working tools were screwdrivers and voltmeters rather than sextants and chronometers. Of them it could never be said Every hair a ropeyarn, every fingernail a marlinespike, every drop of blood pure Stockholm tar. They were servants to rather than masters of their machines, and ever they were at the mercy of a single fuse . . . ' " He shut the book with a slam. He said, "It can't happen

here."

"Famous last words," scoffed Sonya, but her voice was serious.

"It mustn't happen here," said Grimes.