

Drawn by H. Reuterdahl

**"ON THE UPPER STAGING A LITTLE HOODED FIGURE ALSO STRETCHED
ARMS WIDE TOWARDS HER FATHER"**

"WITH THE NIGHT MAIL," BY RUDYARD KIPLING

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T 21 o'clock of a gusty winter night I stood on the lower stages of the G. P. O. outward mail tower. My purpose was a run to Quebec in "postal packet 162 or such other as may be appointed": and the Postmaster General himself countersigned the order. This talisman opened all doors, even those in the despatching-caisson at the foot of the tower, where they were delivering the sorted Continental mail. The bags lay packed close as herrings in the long gray underbodies which our G. P. O. still calls "coaches." Five such coaches were filled as I watched and were shot up the guides to be locked on to their waiting packets three hundred feet nearer the stars.

From the despatching-caisson I was conducted by a courteous and wonderfully learned official — Mr. L. L. Geary, Second Despatcher of the Western Route — to the Captains' Room (this wakes an echo of old romance), where the mail captains come on for their turn of duty. He introduces me to the Captain of "162" — Captain Purnall, and his relief, Captain Hodgson. The one is small and dark: the other large and red; but each has the brooding sheathed glance characteristic of eagles and aeronauts. You can see it in the pictures of our racing professionals, from L. V. Rautsch to little Ada Warleigh — that fathomless abstraction of eyes habitually turned through naked space.

On the notice-board in the Captains' Room, the pulsing arrows of some twenty indicators register, degree by geographical degree, the progress of as many homeward-bound packets. The word "Cape" rises across the face of a dial; a gong strikes:

the South African mid-weekly mail is in at the Highgate Receiving Towers. That is all. It reminds one comically of the traitorous little bell which in pigeon-fanciers' lofts notifies the return of a homer.

"Time for us to be on the move," says Captain Purnall, and we are shot up by the passenger-lift to the top of the despatch-towers. "Our coach will lock on when it is filled and the clerks are aboard." . . .

"No. 162" waits for us in Slip E of the top-most stage. The great curve of her back shines frostily under the lights, and some minute alteration of trim makes her rock a little in her holding-down clips.

Captain Purnall frowns and dives inside. Hissing softly, "162" comes to rest level as a rule. From her North Atlantic Winter nose-cap (worn bright as a diamond with boring through uncounted leagues of hail, snow and ice) to the inset of her three built-out propeller-shafts is some two hundred and forty feet. Her extreme diameter, carried well forward, is thirty-seven. Contrast this with the nine hundred by ninety-four of any crack liner and you will realize the power that must drive a hull through all weathers at more than twice the emergency-speed of the "Cyclonic" !

The eye detects no joint in her skin plating save the sweeping hair-crack of the bow-rudder — Magniac's rudder that assured us the dominion of the unstable air and left its inventor penniless and half-blind. It is calculated to Castelli's "gull-wing" curve. Raise a few feet of that all but invisible plate three-eighths of an inch and she will yaw five miles to port or starboard ere she is under control again. Give her full helm and she returns on her track like a whip-lash. Cant the whole forward — a touch on the

wheel will suffice — and she sweeps at your good direction up or down. Open the full circle and she presents to the air a mushroom head that will bring her up all standing within a half mile.

"Yes," says Captain Hodgson, answering my thought, "Castelli thought he'd discovered the secret of controlling aeroplanes when he'd only found out how to steer dirigible balloons. Magniac invented his rudder to help war-boats ram each other; and war went out of fashion and Magniac he went out of his mind because he said he couldn't serve his country any more. I wonder if any of us ever know what we're really doing."

"If you want to see the coach locked you'd better go aboard. It's due now," says Mr. Geary. I enter through the door amidships. There is nothing here for display. The inner skin of the gas-tanks comes down to within a foot or two of my head and turns over just short of the turn of the bilges. Liners and yachts disguise their tanks with decoration, but the G. P. O. serves them raw under a lick of gray official paint. The inner skin shuts off fifty feet of the bow and as much of the stern, but the bow-bulkhead is recessed for the lift-shunting apparatus as the stern is pierced for the shaft-tunnels. The engine-room lies almost amidships. Forward of it extending to the turn of the bow tanks is an aperture — a bottomless hatch at present — into which the coach will be locked. One looks down over the coamings three hundred feet to the despatching-caisson whence voices boom upward. The light below is obscured to a sound of thunder, as the coach rises on its guides. It enlarges rapidly from a postage-stamp to a playing-card : to a punt and last a pontoon. The two clerks, its crew, do not even look up as it comes into place. The Quebec letters fly under their fingers and leap into the docketed racks, while both captains and Mr. Geary satisfy themselves that the coach is locked home. A clerk passes the way-bill over the hatch-coaming. Captain Purnall thumb-marks and passes it to Mr. Geary. Receipt has been given and taken. "Pleasant run," says Mr. Geary and disappears through the door which a foot-high pneumatic compressor locks after him.

"A-ah!" sighs the compressor released. Our holding-down clips part with a tang. We are clear.

Captain Hodgson opens the great colloid underbody-porthole through which I watch million-lighted London slide eastward as the gale gets hold of us. The first of the low winter clouds cuts off the well-known view and darkens Middlesex. On the south edge of it I can see a packet's postal light plowing through the white fleece. For an instant she gleams like a star ere she drops toward the Highgate Receiving Towers. "The Bombay Mail," says Captain Hodgson, and looks at his watch. "She's forty minutes late."

"What's our level?" I ask.

"Four thousand. Aren't you coming up on the bridge?"

The bridge (let us ever bless the G. P. O. as a repository of ancientest tradition !) is represented by a view of Captain Hodgson's legs where he stands on the control platform that runs thwartships overhead. The bow colloid is unshuttered and Captain Purnall, one hand on the wheel, is feeling for a fair slant. The dial shows 4,300 feet.

"It's steep to-night," he mutters as tier on tier of cloud drops under. "We generally pick up an easterly draught below three thousand at this time o' the year. I hate slathering through fluff."

"So does Van Cutsem. Look at him huntin' for a slant," says Captain Hodgson. A fog-light breaks cloud a hundred fathoms below. The Antwerp Night Mail makes her signal and rises between two racing clouds far to port, her flanks blood-red in the glare of Sheerness Double Light. The gale will have us over the German ocean in half an hour, but Captain Purnall lets her go composedly — nosing to every point of the compass as she rises.

"Five thousand — six, six thousand eight hundred" — the dip-dial reads ere we find the easterly drift, heralded by a flurry of snow at the thousand fathom level. Captain Purnall rings up the engines and keys down the governor on the switch before him. There is no sense in urging machinery when *Æolus* himself gives you good knots for nothing. We are away in earnest now — our nose notched home on our chosen star. At this level the lower clouds are laid out all neatly combed by the dry fingers of the East. Below that there is the strong westerly blow through which we rose. Overhead, a film of southerly drifting mist draws a theatrical gauze across the firmament. The moon-light turns the lower strata to silver without

a stain except where our shadow underruns us. Bristol and Cardiff Double Lights (those stately inclined beams over Severn-mouth) are dead ahead of us; for we keep the Southern Winter Route. Coventry Central, the pivot of the English system, stabs upward once in ten seconds its spear of diamond light to the north; and a point or two off our starboard bow The Leek, the great cloud-breaker of Saint David's Head, swings its unmistakable green beam twenty-five degrees each way. There must be half a mile of fluff over it in this weather, but it does not affect The Leek.

"Our planet's overlighted if anything," says Captain Purnall at the wheel, as Cardiff-Bristol slides under. "I remember the old days of common white verticals that 'ud show two or three thousand feet up in a mist, if you knew where to look for 'em. In really fluffy weather they might as well have been under your hat. One could get lost coming home then, an' have some fun. Now, it's like driving down Piccadilly."

He points to the pillars of light where the cloud-breakers bore through the cloud-floor. We see nothing of England's outlines: only a white pavement pierced in all directions by these manholes of variously colored fire—Holy Island's white and red—St. Bee's interrupted white, and so on as far as the eye can reach. Blessed be Sargent, Ahrens, and the Dubois brothers, who invented the cloud-breakers of the world whereby we travel in security!

"Are you going to lift for The Shamrock?" asks Captain Hodgson. Cork Light (green, fixed) enlarges as we rush to it. Captain Purnall nods. There is heavy traffic hereabouts—the bank beneath us is streaked with running fissures of flame where the Atlantic boats are hurrying Londonwards just clear of the fluff. Mail-packets are supposed, under the Conference rules, to have the five-thousand-foot lanes to themselves, but the foreigner in a hurry is apt to take liberties with English air. "No. 162" lifts to a long-drawn wail of the breeze in the fore-flange of the rudder and we make Valencia (white, green, white) at a safe 7,000 feet, dipping our beam to an incoming Washington packet.

There is no cloud on the Atlantic, and faint streaks of cream round Dingle Bay show where the driven seas hammer the coast. A big S. A. T. A. liner (*Société Anonyme des Transports Aériens*) is diving and lifting

half a mile below us in search of some break in the solid west wind. Lower still lies a disabled Dane: she is telling the liner all about it in International. Our General Communication dial has caught her talk and begins to eavesdrop. Captain Hodgson makes a motion to shut it off but checks himself. "Perhaps you'd like to listen," he says.

"'Argol' of St. Thomas," the G. C. whispers. "Report owners three starboard shaft collar-bearings fused. Can make Flores as we are, but impossible further. Shall we buy spares at Fayal?"

The liner acknowledges and recommends inverting the bearings. The "Argol" answers that she has already done so without effect, and begins to relieve her mind about cheap German enamels for collar-bearings. The Frenchman assents cordially, cries "*Courage, mon ami*," and switches off.

Their lights sink under the curve of the ocean.

"That's one of Lundt & Bleamer's boats," says Captain Hodgson. "Serves 'em right for putting German compos in their thrust-blocks. *She* won't be in Fayal to-night! By the way, wouldn't you like to look round the engine-room?"

I have been waiting eagerly for this invitation and I follow Captain Hodgson from the control-platform, stooping low to avoid the bulge of the tanks. We know that Fleury's gas can lift anything, as the world-famous trials of '17 showed, but its almost indefinite powers of expansion necessitate vast tank room. Even in this thin air the lift-shunts are busy taking out one-third of its normal lift, and still "162" must be checked by an occasional downdraw of the rudder or our flight would become a climb to the stars. Captain Purnall prefers an overlifted to an underlifted ship, but no two captains trim ship alike. "When I take the bridge," says Captain Hodgson, "you'll see me shunt forty per cent of the lift out of the gas and run her on the upper rudder. With a swoop upwards instead of a swoop downwards, as you say. Either way will do. It's only habit. Watch our dip-dial! Tim fetches her down once every thirty knots as regularly as breathing."

So is it shown on the dip-dial. For five or six minutes the arrow creeps from 6,700 to 7,300. There is the faint "szgee" of the rudder, and back slides the arrow to 6,500 on a falling slant of ten or fifteen knots.

"In heavy weather you jockey her with the screws as well," says Captain Hodgson and, unclipping the jointed bar which divides the engine-room from the bare deck, he leads me onto the floor.

Here we find Fleury's Paradox of the Bulkheaded Vacuum — which we accept now without thought — literally in full blast. The three engines are H. T. & T. assisted-vacuo Fleury turbines running from 3,000 to the Limit — that is to say, up to the point when the blades make the air "bell" — cut out a vacuum for themselves precisely as do over-driven marine propellers. "162's" Limit is low on account of the small size of her nine screws, which, though handier than the old colloid Thelussons, bell sooner. The midships engine, generally used as a reinforce, is not running; so the port and starboard turbine vacuum-chambers draw direct into the return-mains.

The turbines whistle reflectively. From the low-arched expansion-tanks on either side the valves descend pillarwise to the turbine-chests, and thence the obedient gas whirls through the spirals of blades with a force that would draw the teeth out of a power-saw. Behind, is its own pressure held in leash or spurred on by the lift-shunts; before it, the vacuum where Fleury's Ray dances in violet-green bands and whirled tourbillions of flame. The jointed U-tubes of the vacuum chamber are pressure-tempered colloid (no glass would endure the strain for an instant) and a junior engineer with tinted spectacles watches the Ray intently. It is the very heart of the machine — a mystery to this day. Even Fleury who begat it and, unlike Magniac, died a multi-millionaire, could not explain how the restless little imp shuddering in the U-tube can in the fractional fraction of a second strike down the furious blast of gas into a chill grayish-green liquid that drains (you can hear it trickle) from the far end of the vacuum through the eduction-pipes and the mains back to the bilges. Here it returns to its gaseous, one had almost written sagacious, state and climbs to work afresh. Bilge-tank, upper tank, dorsal-tank, expansion-chamber, vacuum, main-return (as a liquid), and bilge-tank once more is the ordained cycle. Fleury's Ray sees to that; and the engineer with the tinted spectacles sees to Fleury's Ray. If a speck of oil; if even the natural grease of the human finger touch the hooded terminals,

Fleury's Ray will wink and disappear and must be laboriously built up again. This means half a day's work for all hands and an expense of one hundred and seventy-odd pounds to the G. P. O. for radium-salts and such trifles.

"Now look at our thrust-coWars. You won't find much German *co*mpo there. Full-jeweled, you see," says Captain Hodgson as the engineer shunts open the top of a cap. Our shaft-bearings are C. D. C. (Commercial Diamond Company) stones, ground with as much care as the lens of a telescope. They cost £37 apiece. So far we have not arrived at their term of life. These bearings came from "No. 97" which took them over from the old "Dominion of Light," which had them out of the wreck of the "Perseus" aeroplane in the years when men still flew kites over thorium engines.

They are a shining reproof to all low-grade German "ruby" enamels, so-called "boort" facings, and the dangerous and unsatisfactory alumina compounds which please dividend-hunting owners and turn skippers crazy.

The rudder-gear and the gas lift-shunt, seated side by side under the engine-room dials, are the only machines in visible motion. The former sighs from time to time as the oil plunger rises and falls half an inch. The latter, cased and guarded like the U-tube aft, exhibits another Fleury Ray but inverted and more green than violet. Its function is to shunt the lift out of the gas, and this it will do without watching. That is all! A tiny pump-rod wheezing and whining to itself beside a sputtering green lamp. A hundred and fifty feet aft down the flat-topped tunnel of the tanks a violet light, restless and irresolute. Between the two, three white-painted turbine-trunks, like eel-baskets laid on their side, accentuate the empty perspectives. You can hear the trickle of the liquefied gas flowing from the vacuum into the bilge-tanks and the soft *gluck-glock* of gas-locks closing as Captain Purnall brings "162" down by the head. The hum of the turbines and the boom of the air on our skin is no more than a cotton-wool wrapping to the universal stillness. And we are running an eighteen-second mile.

I peer from the fore end of the engine-room over the hatch-coamings into the coach. The mail-clerks are sorting the Winnipeg, Calgary, and Medicine Hat bags: but there is a pack of cards ready on the table.

Suddenly a bell thrills ; the engineers run to the turbine-valves and stand by ; but the spectacled slave of the Ray in the U-tube never lifts his head. He must watch where he is. We are hard-braked and going astern ; and there is language from the control-platform.

"Tim's sparking badly about something," says the unruffled Captain Hodgson. "Let's look."

Captain Purnall is not the man we left half an hour ago ; but the embodied authority of the G. P. O. Ahead of us floats an ancient, aluminum-patched, twin-screw tramp of the dingiest with no more right to the 5,000 foot lanes than has a horse-cart to a town. She carries an obsolete "barbette" conning-tower — a six-foot affair with railed platform forward — and our warning beam plays on the top of it as a policeman's lantern flashes on the area sneak. Like a sneak-thief, too, emerges a shock-headed navigator in his shirt-sleeves. Captain Purnall wrenches open the colloid to talk with him man to man. There are times when Science does not satisfy.

"What under the stars are you doing here, you sky-scraping chimney-sweep?" he shouts as we two drift side by side. "Do you know this is a Mail-lane? You call yourself a skipper, sir? You ain't fit to peddle toy balloons to an Esquimaux. Your name and number! Report and get down!"

"I've been blown up once," the shock-headed man cries hoarsely as a dog barking. "I don't care two flips of a contact for anything *you* can do. Postey."

"Don't you, sir? But I'll make you care. I'll have you towed stern first to Disko and broke up. You can't recover insurance if you're broke for obstruction. Do you understand *that*?"

Then the stranger bellowes : "Look at my propellers! There's been a wullie-wa down under that has knocked me into umbrella-frames! We've been blown up about forty thousand feet! We're all one conjuror's watch inside! My mate's arm's broke; my engineer's head's cut open; my Ray went out when the engines smashed; and . . . and . . . for pity's sake give me my height, Captain! We doubt we're dropping."

"Six thousand eight hundred. Can you hold it?" Captain Purnall overlooks all insults, and leans half out of the colloid, staring and snuffing. The stranger leaks pungently.

"We ought to blow back to St. John's with luck. We're trying to plug the fore-tank now, but she's simply whistling it away," her captain wails.

"She's sinkin' like a log," says Captain Purnall in an undertone. "Call up the Mark Boat, George." Our dip-dial shows that we abreast the tramp have dropped five hundred feet the last few minutes.

Captain Purnall presses a switch and our beam begins to swing through the night, twizzling spokes of light across infinity.

"That'll fetch something," he says, while Captain Hodgson watches the General Communicator. He has called up the Banks Mark Boat, a couple of hundred miles west, and is reporting the case.

"I'll stand by you," Captain Purnall roars to the lone figure on the conning-tower.

"Is it as bad as that?" comes the answer. "She is n't insured."

"Might have guessed as much," mutters Hodgson. "Owner's risk is the worst risk of all!"

"Can't I fetch St. John's — not even with this breeze?" the voice quavers.

"Stand by to abandon ship. Haven't you *any* lift in you, fore or aft?"

"Nothing but the midship tanks and they're none too tight. You see, my Ray gave out and —" he coughs in the reek of the escaping gas.

"You poor devil!" This does not reach our friend. "What does the Mark Boat say, George?"

"Wants to know if there's any danger to traffic. Says she's in a bit of weather herself and can't quit station. I've turned in a General Call, so even if they don't see our beam some one's bound to — or else we must. Shall I clear our slings? Hold on! Here we are! A Planet liner, too! She'll be up in a tick!"

"Tell her to get her slings ready," cries his brother captain. "There won't be much time to spare . . . Tie up your mate," he roars to the tramp.

"My mate's all right. It's my engineer. He's gone crazy."

"Shunt the lift out of him with a spanner. Hurry!"

"But I can make land, if I've half a chance."

"You'll make the Atlantic in twenty minutes. You're less than fifty-eight hundred now. Get your log and papers."

A Planet liner — east bound, heaves up in a superb spiral and takes the air of us humming. Her underbody colloid is open and her transporter-slings hang down like tentacles. We shut off our beam as she adjusts herself — steering to a hair — over the tramp's conning-tower. The mate comes up, his arm strapped to his side, and stumbles into the cradle. A man with a ghastly scarlet head follows, shouting that he must go back and build up his Ray. The mate assures him that he will find a nice new Ray all ready in the liner's engine-room. The bandaged head goes up wagging excitedly. A youth and a woman follow. The liner cheers hollowly above us, and we see the passengers' faces at the saloon colloid.

"That's a good girl. What's the fool waiting for now?" says Captain Purnall.

The skipper comes up, still appealing to us to stand by and see him fetch St. John's. He dives below and returns — at which we little human beings in the void cheer louder than ever — with the ship's kitten. Up fly the liner's hissing slings; her underbody crashes home and she hurtles away again. The dial shows less than 3,000 feet.

The Mark Boat signals that we must attend to the derelict, now whistling her death song, as she falls beneath us in long sick zigzags.

"Keep our beam on her and send out a general warning," says Captain Purnall, following her down.

There is no need. Not a liner in air but knows the meaning of that vertical beam and gives us and our quarry a wide berth.

"But she'll drown in the water, won't she?" I ask.

"I've known a derelict up-end and sift her engines out of herself and flicker round the Lower Lanes for three weeks on her forward tanks only. We'll run no risks. Pith her, George, and look sharp. There's weather ahead."

Captain Hodgson opens the underbody colloid, swings the heavy pithing-iron out of its rack, which in liners is generally cased as a settee, and at two hundred feet releases the catch. We hear the whir of the crescent-shaped arms opening as they descend. The derelict's forehead is punched in, starred across, and rent diagonally. She falls stern first; our beam upon her; slides like a lost soul down that pitiless ladder of light, and the Atlantic takes her.

"A filthy business," says Hodgson. "I wonder what it must have been like in the old days."

The thought had crossed my mind too. What if that wavering carcass had been filled with International-speaking men of all the Internationalities, each one of them taught (*that* is the horror of it!) that after death he would very possibly go forever to unspeakable torment?

And not half a century since, we (one knows now that we are only our fathers re-enlarged upon the earth), *we*, I say, ripped and rammed and pithed to admiration.

Here Tim, from the control-platform, shouts that we are to get into our inflators and to bring him his at once.

We hurry into the heavy rubber suits — the engineers are already dressed — and inflate at the air-pump taps. G. P. O. inflators are thrice as thick as a racing man's "heavies," and chafe abominably under the armpits. George takes the wheel until Tim has blown himself up to the extreme of rotundity. If you kicked him off the c. p. to the deck he would bounce back. But it is "162" that will do the kicking.

"The Mark Boat's mad — stark ravin' crazy," he snorts, returning to command. "She says there's a bad blow-out ahead and wants me to pull over to Greenland. I'll see her pithed first! We wasted an hour and a quarter over that dead duck down under and now I'm expected to go rubbin' my back all over the Pole. What does she think a pos-tal packet's made of? Gummed silk? Tell her we're coming on straight."

George buckles him into the Frame and switches on the Direct Control. Now under Tim's left toe lies the port engine Accelerator; under his left heel the Reverse, and so with the other foot. The lift-shunt stops stand out on the rim of the steering-wheel where the fingers of his left hand can play on them. At his right hand is the midships engine lever ready to be thrown into gear at a moment's notice. He leans forward in his belt, eyes glued to the colloid, and one ear cocked toward the General Communicator. Henceforth he is the strength and direction of "162," through whatever may befall.

The Banks Mark Boat is reeling out pages of Aerial Route Directions to the traffic at large. We are to secure all "loose objects;" hood up our Fleury Rays; and "on no account to attempt to clear snow from our conning-towers till the weather abates."



“A MAN WITH A GHASTLY SCARLET HEAD FOLLOWS, SHOUTING
THAT HE MUST GO BACK AND BUILD UP HIS RAY”

Under-powered craft, we are told, can ascend to the limit of their lift, mail-packets to look out for them accordingly; the lanes westward are pitting very badly, with frequent blow-outs, vortices, and laterals.

Still the clear dark holds up unblemished. The only warning is the electric skin-tension (I feel as though I were a lace-maker's pillow) and an irritability which the gibbering of the General Communicator increases almost to hysteria.

We have made eight thousand feet since we pithed the tramp and our turbines are giving us an honest two hundred and ten an hour.

Very far to the west an elongated blur of red, low down, shows us the Banks Mark Boat. There are specks of fire round her rising and falling — bewildered planets about an unstable sun — helpless shipping hanging on to her light for company's sake. No wonder she could not quit station.

She warns us to look out for the back-wash of the bad vortex in which (her beam shows it) she is even now reeling.

The pits of gloom about us begin to fill with very faintly luminous films — wreathing and uneasy shapes. One forms itself into a globe of pale flame that waits shivering with eagerness as we sweep by. It leaps monstrously across the blackness, alights on the precise tip of our nose, pirouettes there an instant, and swings off. Our roaring bow sinks as though that light were lead — sinks and recovers to lurch and stumble again beneath the next blow-out. Tim's fingers on the lift-shunt strike chords of numbers — $1:4.7:2:4.6:7:5:3$; and so on; for he is running by his tanks only, lifting or lowering her against the uneasy air. All three engines are at work; the sooner we have skated over this thin ice the better. Higher we dare not go. The whole upper vault is charged with pale krypton vapors, which our skin friction may excite to unholy manifestations. Between the upper and the lower levels — 5,000 and 7,000, hints the Mark Boat — we may perhaps bolt through if . . . Our bow clothes itself in blue flame and falls like a sword. No human skill can keep pace with the changing tensions. A vortex has us by the beak and we dive down a two-thousand-foot slant at an angle (the dip-dial and my bouncing body record it) of thirty-five. Our turbines scream shrilly; the propellers cannot bite on the thin air; Tim shunts the lift out of five tanks at once and

by sheer weight drives her bulletwise through the maelstrom till she cushions with a jar an up-gust, three thousand feet below.

"Now we've done it," says George in my ear. "Our skin-friction that last slide, has played Old Harry with the tensions! Look out for laterals, Tim, she'll want lifting."

"I've got her," is the answer. "Come up, old woman."

She comes up nobly, but the laterals buffet her left and right like the pinions of angry angels. She is jolted off her chosen star twenty degrees to port or starboard, and cuffed into place again, only to be swung away and dropped into a new blow-out. We are never without a corposant grinning on our bows or rolling head over heels from nose to midships, and to the crackle of electricity round and within us is added once or twice the rattle of hail — hail that will never fall on any sea. Slow we must or we may break our back, pitch-poling.

"Air's a perfectly elastic fluid," roars George above the tumult. "About as elastic as a head sea off the Fastnet."

He is less than just to the good element. If one intrudes on the heavens when they are balancing their volt-accounts; if one disturbs the High Gods' market-rates by hurling steel hulls at ninety knots across tremblingly adjusted tensions, one must not complain of any rudeness in the reception. Tim met it with an unmoved countenance, one corner of his under lip caught up on a tooth, his eyes fleeting into the blackness twenty miles ahead, and the fierce sparks flying from his knuckles at every play of the hand. Now and again he shook his head to clear the sweat trickling from his eyebrows, and it was then that George, watching his chance, would slide down the life-rail and swab his face quickly with a big red handkerchief. I never imagined that a human being could so continuously labor and so collectedly think as did Tim through that Hell's half hour when the flurry was at its worst. We were dragged hither and yon by warm or frozen suctions, belched up on the tops of wulli-was, spun down by vortices and clubbed aside by laterals under a dizzying rush of stars, in the company of a drunken moon. I heard the rushing click of the midship engine lever sliding in and out, the low growl of the lift-shunts and, louder than the yelling winds without, the scream of the bow-rudder gouging into any lull that promised hold for an instant. At last we began to

claw up on a cant, bow-rudder and port-propeller together ; only the nicest balancing of tanks saved us from spinning like the rifle-bullet of the old days.

"We've got to hitch to windward of that Mark Boat somehow," George cried.

"There's no windward," I protested feebly, where I swung shackled to a stanchion. "How can there be?"

He laughed — as we pitched into a thousand foot blow-out — that red man laughed under his inflated hood.

"Look!" he said. "We must clear those refugees with a high lift."

The Mark Boat was below and a little to the sou'west of us, fluctuating in the center of her distraught galaxy. The air was thick with moving lights at every level. I take it most of them were lying head to wind but, not being hydras, they failed. An under-tanked Moghrabi boat had risen to the limit of her lift and, finding no improvement, had dropped a couple of thousand. There she met a superb wulli-wa and was blown up spinning like a dead leaf. Instead of shutting off she braked hard and, naturally, rebounded as from a wall almost into the Mark Boat, whose language (our G. C. took it in) was humanly simple.

"If they'd only ride it out quietly it 'ud be better," said George in a calm, as we climbed like a bat above them all. "But some skippers *will* navigate without lift. What does that Tad-boat think she is doing, Tim?"

"Playin' kiss in the ring," was Tim's unmoved reply. A Trans-Asiatic Direct liner had found a smooth and butted into it full power. But there was a vortex at the tail of that smooth, and the T. A. D. was flipped out like a pea from off a fingernail braking madly as she fled down and all but over-ending.

"Now I hope she's satisfied," said Tim. I'm glad I'm not a Mark Boat . . . Do I want help?" The G. C. dial had caught his ear. "George, you may tell that gentleman with my love — love, remember, George — that I do not want help. Who is the officious sardine-tin?"

"Rimouski drogher on the lookout for a tow."

"Very kind of the Rimouski drogher. This postal packet isn't being towed at present."

"These droghers will go anywhere on a chance of salvage," George explained. "We call 'em kittiwakes."

A long-beaked, bright steel ninety-footer floated at ease for one instant within hail of us, her slings coiled ready for rescues, and a single hand in her open tower. He was smoking. Surrendered to the insurrection of the airs through which we tore our way, he lay in absolute peace. I saw the smoke of his pipe ascend untroubled ere his boat dropped like a stone in a well.

We had just cleared the Mark Boat and her disorderly refugees when the storm ended as suddenly as it had begun. A shooting-star to northward filled the sky with the green blink of a meteorite dissipating itself in our atmosphere.

Said George : "That may iron out all the tensions." Even as he spoke, the conflicting winds came to rest, the levels filled ; the laterals died out in long easy swells ; the airways were smoothed before us. In less than three minutes the covey round the Mark Boat had shipped their power-lights and whirred away upon their businesses.

"What's happened?" I gasped. The nerve-storm within and the volt-tingle without had passed ' my inflaters weighed like lead.

"God he knows!" said Captain George soberly. "That old shooting-star's skin-friction has discharged the different levels. I've seen it happen before. Phew! What a relief!"

We dropped from twelve to six thousand and got rid of our clammy suits. Tim shut off and stepped out of the Frame. The Mark Boat was coming up behind us. He opened the colloid in that heavenly stillness and mopped his face.

"Hello, Williams!" he cried. "A degree or two out o' station, ain't you?"

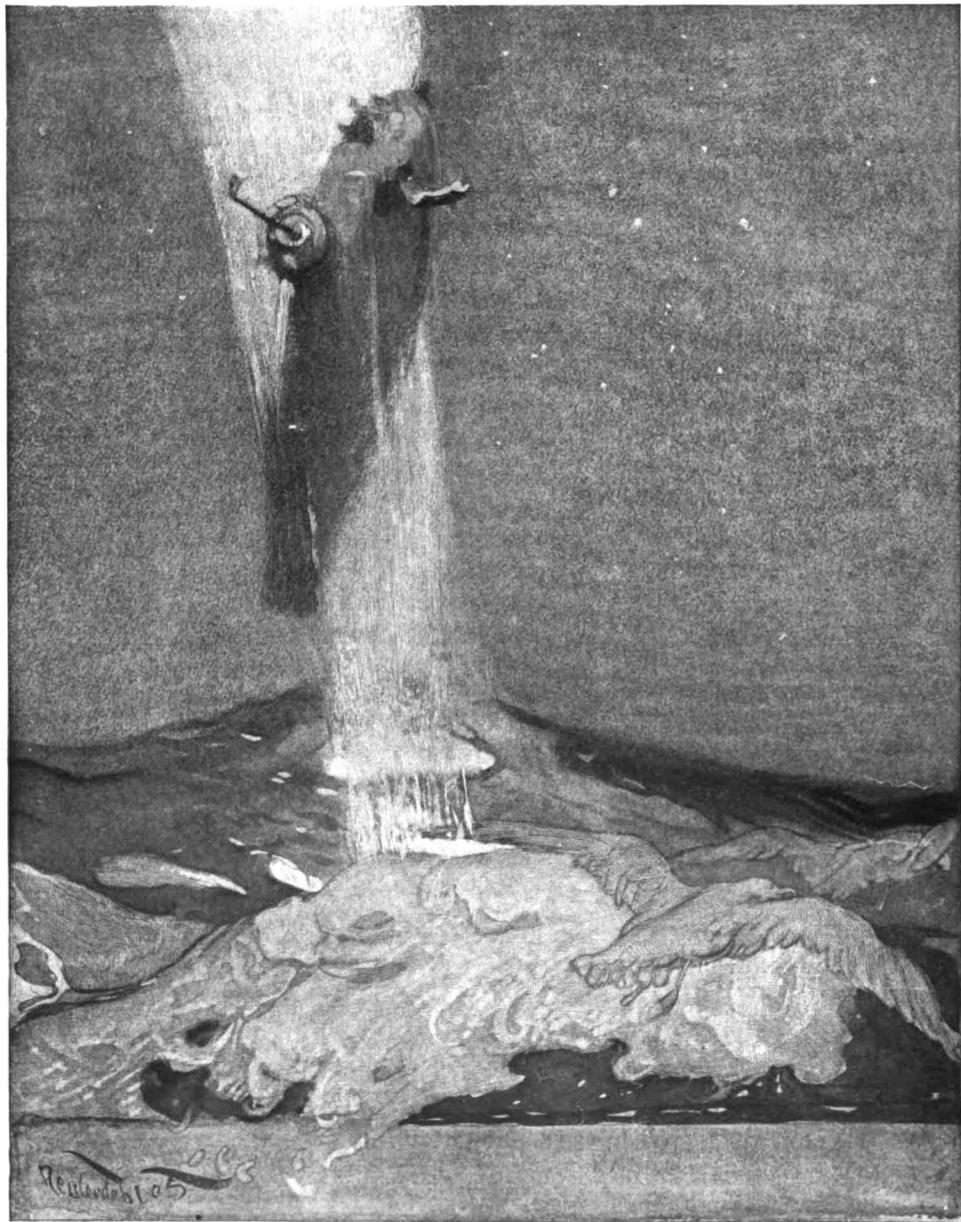
"May be," was the answer. "I've had some company this evening."

"So I noticed. Wasn't that quite a little flurry!"

"I warned you. Why didn't you pull out round by Disko? The east-bound packets have."

"Me? Not till I'm running a Polar consumptives Sanatorium boat! I was squinting through a colloid before you were out of your cradle, my son."

"I'd be the last man to deny it," the captain of the Mark Boat replies softly. "The way you handled her just now — I'm a pretty fair judge of traffic in a volt-flurry — it was a thousand revolutions beyond anything even I've ever seen."



"Slides like a lost soul down that pitiless ladder of light, and the Atlantic takes her"

Tim's back supples visibly to this oiling. Captain George on the c. p. winks and points to the portrait of a singularly attractive maiden pinned up on the telescope-bracket above the steering-wheel.

I see. Wholly and entirely do I see!

There is some talk overhead of "coming round to tea on Friday," a brief report of

the derelict's fate, and Tim volunteers as he descends: "For an A. B. C. man young Williams is less of a high-tension fool than some . . . Were you thinking of taking her on, George? Then I'll just have a look round that port thrust — seems to me it's a trifle warm — and we'll fan along."

The Mark Boat hums off joyously and

hangs herself up in her appointed eyrie. Here she will stay, a shutterless observatory; a life-boat station; a salvage tug; a court of ultimate appeal-cum-meteorological bureau for one thousand miles in all directions, till Wednesday next when her relief slides across the stars to take her buffeted place. Her black hull, double conning-tower, and ever-ready slings represent all that remains to the planet of that odd word authority. She is responsible only to the Aerial Board of Control — the A. B. C. of which Tim speaks so flippantly. But that semi-elected, semi-nominated body of a few score persons of both sexes, controls this planet. "Transportation is Civilization," our motto runs. Theoretically we do what we please so long as we do not interfere with the traffic and all it implies. Practically the A. B. C. confirms or annuls all international arrangements and, to judge from its last report, finds our tolerant, humorous, lazy little planet only too ready to lay the whole burden of private administration on its shoulder.

I discuss this with Tim, sipping maté on the c. p., while George fans her along over the white blur of the Banks in beautiful upward curves of fifty miles each. The dip-dial translates them on the tape in flowing freehand.

Tim gathers up a skein of it and surveys the last few feet, which record "162's" path through the volt-flurry.

"I haven't had a fever-chart like this to show up in five years," he says ruefully.

A postal packet's dip-dial records every yard of every run. The tapes then go to the A. B. C., which collates and makes composite photographs of them for the instruction of captains. Tim studies his irrevocable past, shaking his head.

"Hello! Here's a fifteen-hundred-foot drop at eighty-five degrees! We must have been standing on our head then, George."

"You don't say so," George answers. "I fancied I noticed it at the time."

George may not have Captain Purnall's catlike swiftness, but he is all an artist to the tips of the broad fingers that play on the shunt-stops. The delicious flight-curves come away on the tape with never a waver. The Mark Boat's vertical spindle of light lies down to eastward, setting in the face of the following stars. Westward, where no planet should rise, the triple verticals of Trinity Bay (we keep still to the Southern route) make a low-lifting haze. We seem

the only thing at rest under all the heavens; floating at ease till the earth's revolution shall turn up our landing-towers.

And minute by minute our silent clock gives us a sixteen-second mile.

"Some fine night," says Tim. "We'll be even with that clock's Master."

"He's coming now," says George. "I'm chasing the night already."

The stars ahead dim no more than if a film of mist had been drawn under unobserved, but the deep air-boom on our skin changes to a joyful shout.

"The dawn-gust," says Tim. "It'll go on to meet the Sun. Look! Look! There's the night being crammed back over our bow! Come to the aft colloid. I'll show you something."

The engine-room is hot and stuffy; the clerks in the coach are asleep, and the Slave of the Ray is near to follow them. Tim slides open the aft colloid and reveals the curve of the world — the ocean's, deepest purple — edged with fuming and intolerable gold. Then the Sun rises and through the colloid strikes out our lamps. Tim scowls in his face.

"Squirrels in a cage," he mutters. "That's all we are. Squirrels in a cage! He's going twice as fast as us. Just you wait a few years, my shining friend, and we'll take steps that will amaze you. We'll Joshua you!"

Yes, that is our dream: to turn all earth into the Vale of Ajalon at our pleasure. So far, we can drag out the dawn to twice its normal length in these latitudes. But some day — even on the Equator — we shall hold the Sun level in his full stride.

Now we look down on a sea thronged with heavy traffic. A big submersible breaks water suddenly. Another and another follow with a swash and a suck and a savage bubbling of relieved pressures. The deep-sea freighters are rising to lung up after the long night, and the leisurely ocean is all patterned with peacock's eyes of foam.

"We'll lung up, too," says Tim, and when we return to the c. p. George shunts off, the colloids are opened, and the fresh air sweeps her out. There is no hurry. The old contracts (they will be revised at the end of the year) allow twelve hours for a run which any packet can put behind her in ten. So we breakfast in the arms of an easterly slant which pushes us along at a languid twenty.

To enjoy life, and tobacco, begin both on a sunny morning half a mile or so above the

dappled Atlantic cloud-belts and after a volt-flurry which has cleared and tempered your nerves. While we discussed the thickening traffic with the superiority that comes of having a high level to ourselves, we heard (and I for the first time) the morning hymn on a Hospital boat.

"She was cloaked by a skein of raveled fluff beneath us and we caught the chant before she rose into the sunlight. *"Oh, ye Winds of God,"* sang the unseen voices : *"bless ye the Lord! Praise Him and magnify Him for ever!"*

We slid off our caps and joined in. When our shadow fell across her great open platforms they looked up and stretched out their hands neighborly while they sang. We could see the doctors and the nurses and the white-button-like faces of the cot-patients. She passed slowly beneath us, heading northward, her hull, wet with the dews of the night, all ablaze in the sunshine. So took she the shadow of a cloud and vanished, her song continuing up. *"Oh, ye holy and humble men of heart, bless ye the Lord! Praise Him and magnify Him for ever."*

"She's a public lunger or she would n't have been singing the *Benedicite*, and she's a Greenlander or she wouldn't have snow-blinds over her colloids," said George at last. "She'll be bound for Frederikshavn or one of the Glacier sanatoriums for a month. If she was an accident ward she'd be hung up at the eight-thousand-foot level. Yes—consumptives."

"Funny how the new things are the old things. I've read in books," Tim answered, "that savages used to haul their sick and wounded up to the tops of hills because microbes were fewer there. We hoist 'em into sterilized air for a while. Same idea."

How much do the doctors say we've added to the average life of a man?"

"Thirty years," says George with a twinkle in his eye. "Are you going to spend 'em all up here?"

"Flap along, then. Flap along. Who's hindering?" the senior captain laughed, as we went in.

We held a good lift to clear the coastwise and Continental shipping and we had need of it. Though our route is in no sense a populated one, there is a steady trickle of traffic this way along. We met Hudson Bay furriers out of the Great Preserve hurrying to make their departures from Bonavista with sable and black fox for the insatiable markets. We over-crossed Keewatin liners, small and

cramped, but their captains, who see no land between Trepassey and Blanco, know what gold they bring back from West Africa. Trans-Asiatic Directs, we met, soberly ringing the world round the Fiftieth Meridian at an honest seventy knots; and white-painted Ackroyd & Hunt fruiters out of the south fled beneath us, their ventilated hulls whistling like Chinese kites. Their market is in the North among the northern sanatoria where you can smell their grapefruit and bananas across the cold snows. Argentine beef boats we sighted too, of enormous capacity and unlovely outline. They, too, feed the northern health stations in ice-bound ports where submersibles dare not rise.

Yellow-bellied ore-slats and Ungava petrol-tanks punted down leisurely out of the north like strings of unfrightened wild duck. It does not pay to "fly" minerals and oil a mile further than is necessary; but the risks of transhipping to submersibles in the ice-pack off Nain or Hebron are so great that these heavy freighters fly down to Halifax direct and scent the air as they go. They are the biggest tramps aloft except the Athabasca grain tubs. But these last, now that the wheat is moved, are busy over the world's shoulder, timber-lifting in Siberia.

We held to the St. Lawrence (it is astonishing how the old water-ways still pull us children of the air) and followed his broad line of black between its drifting ice blocks, all down the Park that the wisdom of our fathers—but every one knows the Quebec run.

We dropped to the Heights Receiving Towers twenty minutes ahead of time and there hung at ease till the Yokohama Intermediate Packet could pull out and give us our proper slip. It was curious to watch the action of the holding-down clips all along the frosty river front as the boats cleared or came to rest. A big Hamburger was leaving Pont Levis and the crew, unshipping the platform railings, began to sing "Elsinore"—the oldest of our chantneys. You know it of course :

*Mother Rugen's tea-house on the Baltic—
Forty couple waltzing on the floor!
And you can watch my Ray,
For I must go away
And dance with Ella Sweyn at Elsinore!*

Then while they sweated home the covering-plate :

*Nor-Nor-Nor-Nor-
West from Sourabaya to the Baltic !
Ninety knot an hour to the Skaw !
Mother Rugen's tea-house on the Baltic
And a dance with Ella Sweyn at Elsinore !*

The clips parted with a gesture of indignant dismissal, as though Quebec, glittering under her snows, were casting out these light and unworthy lovers. Our signal came from the Heights. Tim turned and floated up, but surely then it was with passionate appeal that the great arms flung open from our tower — or did I think so be-

cause on the upper staging a little hooded figure also stretched arms wide towards her father ?

In ten seconds the coach with the clerks clashed down to the receiving-caisson ; the hostlers displaced the engineers at the idle turbines, and Tim, prouder of this than all, introduced me to the maiden of the photograph on the shelf. "And by the way," said he to her, stepping forth in sunshine under the hat of civil life, "I saw young Williams in the Mark Boat. I've asked him to tea on Friday."