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GADGETS

BY

PATRICK VALIX

AUTHOR OF "SEA-SALT AND CORDITE," "SEA-PATROLS," ETC.

"Gadgets? What are gadgets? Anything, everything—parts of mechanism—and so on. Anything whatever, we call gadgets. We're gadgets, too. Parts of the Naval Machine. That's what we all are. Just gadgets!"—Lieutenant (E).

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HODDER AND STOUGHTON

LONDON NEW YORK TORONTO

MCMXVII

1917

CHECKED

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The Hour is Struck

The Hour is Struck

THE Ship that night was quiet, oddly enough, though for some days previous, ever since her course had been diverted, a buzz of interest and subdued excitement had pervaded the Ward-room and Lower-deck alike. And, yet, just that day, her Gunnery Officer, and Gunner, and certain other trustworthy Warrant Officers of onerous rank, had been busily occupied in divers and specific ways.

"Oh, just lookin' around again," quoth 'Gunnery Jack,' carelessly smiling his bland smile; "aren't we havin' some dirty weather, ye know!"

The S.E. wind had veered to the south-west again, still squally and heavy with rain. But the Cruiser was holding onward, her great hull lifting a little to the seas, as if nothing in all the world mattered save her momentous errand, and, inasmuch as she was concerned she was correct

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On deck, the gusty rain was driving against the men on the bridge, and joining with the spray roaring up from under the forefoot almost to the forecastle guns. But in her Ward-room and on her Lower-deck, where hammocks had just been piped down, there was peace and contentment.

"No, I know nothing," curtly replied the sore-tried Commander, who fork in hand was toying in suspicion with the *hors-d'œuvre* on his plate ; "no good trying to pump me ! Not a bit do I know. No ! Nothing communicated to me, at all. Ask 'Gunnery Jack,' there—ask him again. What the devil is this compost we're supposed to eat ? "

"Glue, tinned salmon, and the pepper-pot!" the Marine Officer promptly replied, "and calculated to raise both heat and thirst. Why can't some one hint at the truth, or give us a clue ? The Skipper is as much the son of the Sphinx as ever. We know there's a bit of a bubbub over this murder in Bosnia. But——"

It was just then a messenger appeared at the Commander's elbow. "From the Captain, sir."

A stifled exclamation broke from the 'Bloke' as he read the few words on the slip

The Hour is Struck

from the Wireless Cabin. He jumped to his feet.

The bugle call and hoarse cries of the Boat-swain's Mates aroused the Ship from their last minute of peace. For that, then, this Cruiser of His Britannic Majesty's Navy had swerved from her aforetime appointed course, and passed under the ecliptic of the Sign of Capricornus. The Seas of the World in this hour were being girdled with that fateful call. Already thousands of miles away, that which was to be known to all time as the Grand Fleet of England was moving check-mate in the North Sea, and submarines were even then within the fastnesses of Germany's home waters.

Instantly on board the Cruiser her decks were a running, whirling, mass of officers and men, and all was seeming confusion, yet all in perfect order, for each man knows his post at the summons "General Quarters." Everywhere men were scurrying with hammocks, gunsights, lanterns, cordite, shells, and all the things which go to make the vessel of enormous strength. On the face of each one was gladness and deadly earnestness, intermingled with

intense desire to get his portion effected instantly.

" It's great, eh," the Gunnery Lieutenant shot out as he and the First Lieutenant hurried past each other; "into it we are. Ought to have something ahead, soon."

" What a rag !" Jimmy the One exclaimed, lapsing in his joy into Gun-room vernacular. And, ordinarily, the First was a great precisian in speech as well as in all other things.

Very shortly the G.O.'s voice was to be heard raised in coaxing, cursing, and beseeching gun-crews; for gun-ports, despite the Carpenter's investigations, soon get stiff with caking brine, and instruments, for all the Gunner's care, may not be where they were left. But soon to sharp orders the quickfirers were leering forth, their muzzles immediately wet with spray.

Below the airnoured deck the Gunner and his men, stripped to trousers and singlet, smartly opened up the magazines and shell-rooms. And there, deep beneath the gun-positions, the shells rolled quickly yet gently from their bays into the little cradles running on rails that carry them to the foot of the

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armoured hoists going straight up into the gun-positions.

On the boat-deck the light quickfirers were soon ready, and a certain number of rounds placed in the rear of each gun for instant use.

With greater ardour than ever before, agile hands prepared decks against the very possible and most dread contingency of fires, hoses being rigged to hydrants, and water turned on to wet the decks. Everywhere, too, bucket-fuls of water were placed for drinking purposes and also to quench flames. And, below, where the Heart of the Cruiser beats, all the Engine-room were rife in activities. Dynamos were galvanised into life, running motors, serving torpedo tubes, and the searchlights of enormous consumption of power. Telephones and telegraphs were tested and retested, and machinery started and tried. The Surgeon and sickbay staff rapidly and methodically prepared for the accommodation and treatment of wounded, transferring the stores and equipment from the light and airy sickbay placed at one side of the ship above the armoured deck to the war-station beneath it. Here,

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with the platform and everything provided, he and his staff set themselves in array for their duties in that time when they hear the booming of the guns and the fumes of the exploding charges creep down to them.

On deck the Gunnery Lieutenant appeared to be everywhere as if spirited about by the bangs of guns cleared away, firing primer to test their electrical arrangements. As he ran toward the fore-bridge his hawk-eye noted a small obscure group fumbling at one of the boat-deck guns, and hither he scurried. Its night sight, that faintly illuminated electric cross one inch long, would not burn. For not man only but his machine as well—his finely devised mechanism—may have nerves. In this case, however, even as the Officer reached the piece, two armourers had with cunning adjustments satisfied and cajoled forth the all-necessary 'glim.'

Up on the high, broad fore-bridge the Head of the Ship remained motionless, taking in the bustle, and keenly alert to all things, yet taciturn even on this the penultimate occasion of naval being.

Mayhap as he stood there—a four-square

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figure obscure in the driving gloom, with hands thrust in the side pockets of his coat, the wind whisking his waterproof about, and the rain beating upon him—he was realising the fruit of his lifelong training was now about to be gathered in grim reality. Yet when "Quarters cleared away, sir" rang in his ear, his brusque voice in reply was as lacking in timbre as his comment and orders, for such is of the aloofness of the Navy. And so, with certain gun-crews at the 'close-up,' and ready for instant action, the final work went on of preparation of war.

All useless woodwork was either thrown overboard or sent down to the stokehold fires. Derricks were lashed up, and protected with mantlets of rope. Cat davits, which handle the great anchors, and boat davits, were laid on their sides, so as not to mask the lire of the guns. The fighting stays for the masts and funnels were got up, and secured. Below, all furnishings, save those absolutely necessary, were gutted, and heaved overboard, or sent down to the boiler-room. Most of the boats were roped with junk, and filled with water to lessen any chance of splinters and fire.

And thus, hour-long, the ruthless work went on, perfecting the vessel, within and without, below and above deck, toward the achievement of the entire end of her existence. Ere the morning watch came, her sullen gun had voiced the far-flung might of England in that occidental sea. But the armed merchantmen—would-be *Moeves*—had not issued from their neutral ports, to harry the English food-carriers along that sea-lane.

The Teuton is wary to the extreme in war upon the waters.

Arid so, ever since, two long years and more, the world-seas have witnessed the ceaseless vigilance of Britain. For to Her it has been so given that upon 'the Navy . . . under the good Providence of God, the wealth, safety, and strength of the kingdom chiefly depend/

When Bunkers are Filling

When Bunkers are Filling

CLEAN, neat and spruce is the ship the night before, and immaculate her crew ; for war-time cannot hinder in the Royal Navy that incessant strife distinguishing it for smartness in appearance, as well as all other features ; and only in the torpedo craft, whose coaling is nigh incessant, may griminess encroach. But drab and dirty is the ship the night following, if the coaling has been protracted through unforeseen causes, and the hose, scrubbers, and soap, so energetically used by the men, have not yet brought the vilified vessel back to the semblance of old self. For bunkering is the dirtiest — yet jolliest—work in 'Andrew.'

It is work which in the old 'spit-and-polish' times caused tears in some Commanders' eyes—to see the world of gleaming brass and creamy paintwork, and all beautiful cleanliness deflowered by the Arch-Fierid of the pits—coal-dust. It penetrates everywhere like an epidemic.

Well it is for the Isles that the British Navy leads the world's records for rapidity in coaling ship. For that is one of the paramount factors towards supremacy in naval war. And of two other paramount factors, which, translated into common tongue, are to strike harder than the enemy, and to steam faster, it of coaling is the co-relative base ; for that which co-ordinates all, the supreme intelligence directing and executing naval strategics and tactics, goes amiss if its instruments want in alacrity. Vessels which coal but slowly because of their men's tardiness indicate not only inefficiency, but may permit the enemy to escape, and, on occasion may suffer defeat and capture.

When a British Cruiser or Battleship makes ready to coal, working parties see to the great fenders that are to be hung between the ship and the collier; put large canvas screens and coverings to protect as much as is possible of the paintwork; and swathe the guns also against the blight of coal-dust; and get up hundreds of coal-bags from store-rooms below. Others bring forth shovels innumerable out of places smelling of oil and steam; and others, again, produce the iron-barrows from another

When Bunkers are Filling

store. Derricks are rigged and topped, and whips roved, and the deck brushed over with a mixture of sand and lime to prevent the coal-dust from settling in.

On board the collier an Officer of His Majesty's ship has inspected and tested to twice the weight of the usual hoist the coaling and hoisting gear belonging to the collier, to make certain no unserviceable derrick, whips, slings, beackets of coal-sacks, and so on, are made use of to the danger of the Bluejackets. For gear has been known to break—say, a whip to part—and cause catastrophe and death.

When the Boatswain's Mates pipe lustily, "Clear lower-deck. Hands fall in for coaling ship," both officers and men tumble up merrily, for that which in time of peace, arid then, say, once a month, was the cause of grumblings is now but as a jocund sport or game breaking the monotony of waiting and searching for the enemy. But then the philosophy of the Navy is non-isometric, and thereby differs from that of international jurists and politicians.

Now look the Officers and men like a crew of mountebanks. Some of the Bluejackets are

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dressed in marines' tunics, some in old clothes tied up with string ; others indulge in football jerseys and ancient slacks; some have boots, and some have not; others have lashed strips of canvas or other fabric round their feet for protection. The Officers are all in their oldest clothes, and wearing white cap-covers pulled close over their brows. When bunkers are to be filled every man is permitted to wear what he likes; and, as the Bluejacket yearns for something bizarre on such an occasion, in less than half-an-hour the scene has a semblance to a gigantic and grotesque Christy Minstrel party possessed of coaling fever.

Every one, with but the few exceptions of certain Officers and men, have to fall in for bunkering operations; and certain supernumeries, who are not granted a working-suit allowance, are allowed a shilling a day of ten hours in compensation of the extra wear and tear of their clothes ; but, lest they win rich upon it, their payments must not exceed the total amount of ten shillings in the year.

By now a line has been heaved on board the nearing collier, and soon the Foretop-men make the hawsers fast, and the incoming vessel

When Bunkers are Filling

is held surely against the complaining cork fenders. Derricks are swung out, and forthwith the "Commence" is sounded. Then do Bluejackets and Boys, Marines, Midshipmen and other Officers, pour over into the collier helter-skelter, and vanish into her holds: the Forecastle-men, Foretop-men, Maintop-men and Quarterdeck-men with their Lieutenants and Midshipmen. And, a minute or two later, so briskly do Officers and men ply their shovels, away comes the first hoist—ten bags, each containing two hundredweight of coal. Two men hold bags for their gang to fill, and, as soon as they have their tally made up, the bags are secured by strops, and a hook on a wire rope attached. Instantly the whip hoists them into the air, and drops them on the deck of the warship.

As they arrive there parties of artisan ratings and others fling themselves upon them, tear the strops off the hook, and in a twinkling of your eye are running off, each with a bag, to place it on the trolley or barrow. And as instantly the Marine charges away with his barrow-load toward one of the various bunker openings in the deck, and two grimy tippers shoot the coal

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below, where the Stokers are trimming it into the bunkers. Carefully they stow the fuel into the corners and pockets of the wings, lowers, triangular spaces and other inmost parts making up the bunkering of the great vessel. And it is, at times, something after the nature of a Chinese puzzle, and anathema to all zealous and well-deserving Stokers. There are, too, ships such as need be cockered for stability, and this with all dextrous cunning as the coal-bunkers demand.

Up in the open the collier's steam winches are shrieking and groaning as the Artificers drive them at top speed, taking necessarily the risk of a heated bearing, and consequent smash-up. There is a bang and a whirl, and two Seamen and a Midshipman are sent sprawling in the hold, while a thoughtful Signalman on the deck overhead drops a clutch of empty coal-bags upon them.

In the hold there must be no shortage of the empties, or voices arise in urgent and ominous expostulation.

Everywhere there is work which seems a frenzied bustle, yet withal it is orderly, as exacted by the Commander who has charge

When Bunkers are Filling

of the operations, the First Lieutenant supervising in the collier. The flags at the yardarm or the figures on the blackboard indicate that 1,800 tons have to be bunkered. But, an hour later, it is shown 280 have already been shipped ; or, as the case may be, 300 tons of coal may have rattled and bumped down the shoots.

By now the bugle has sounded "Cooks," and the grimy cooks of the messes have left to get the dinners. Coal-dust helps the appetite, and dinner is quickly over. Pipes have just been set agoing, when the "Commence" sounds again, and all race back to their work, at whips, winches, and other posts. And so hour by hour the bunkers are gradually becoming fuller.

Down there, where all is 'holes and corners,' the stokers sweat and puff, as they labour at their herculean task of keeping the shoots free ; for, if they slacken, be it ever so little, these shafts become choked with coal; and delay incurred in clearance spells delay to the vessel, too. Every minute is conserved in hard labour.

But the devil may enter into the coal, and suddenly a shoot jams, and then the language of the Sub-Lieutenant of the Engine-room—

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who in his duties from bunker to bunker is as Jack-in-the-Box, so instant and sedulous is he—becomes demonic and lurid. Into the clean ammunition passage below he goes, and opens the 'escape' there, an immense cloud of coal-dust griming the spotless white paintwork ; and, together with a satellite trimmer, he shuts himself within the bunker of the recalcitrant shoot. In a few minutes it is cleared, and the Officer springs out on deck by means of a rope's-end, so black and filthy that even his own mother might not recognise him.

So through the afternoon, let it rain, hail, snow, lightning and thunder, the strenuous work goes on, till the pipe to "Stand easy" comes at 5.30. It is growing dark now, and men are fixing reflectors holding groups of four or five electric bulbs, so that the men everywhere may be able to work as if by broad daylight.

And so the work goes on.

"Whip up," roars a husky voice from out the dense dust in the collier's hold. "Whip up," roars the blackamoor of an Officer by the hatchway, giving directions to the man at the winch. The Artificer gives the small wheel of

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the steam-valve a twist, the winch screams clinkety-clink; and the Officer sees a mass of black and bulging bags strapped securely together flash past a light into the night overhead, and swing as if by magic into the glare of an electric illumining the dumping-ground. "High enough," bellows a voice out of the darkness, and the winch ceases. "Let go," and with a whirring and a bang the coal-bags fall in a heap. Black demons hurl themselves upon them, rend them asunder, and in a few seconds their contents are scurrying down the gaping shoots.

Men are singing, men are grunting, some are swearing softly. Noise and dirt, coal-dust and steam, men and ropes, coals and bags, and the hungry bunkers unsatisfied. As the collier hold is emptied, she floats lighter and higher—and the warship sinks deeper—and so the hoists are shorter and quicker in delivery. Which is well and good, for human thews do tire.

And so the work goes on.

At last to a welcome cheer the bugle sounds "Cease firing"—to knock off coaling. The men swarm up and on board their ship, laughing and

joking. The Lieutenant (E.) makes certain of his bags and shovels, wrangling ferociously over the missing, and rejoicing exceedingly on their recovery; or, otherwise, a report must be made out on a certain specified form, giving full particulars as to time, place, and manner of coaling, description and number of the articles lost, and forwarded by the Captain to the Commander-in-Chief or Senior Officer. No manner of thing—to neither nut nor screw—is to be lost without fullest details afforded upon the exact and specified form to the satisfaction of The Power That Is.

Now the men, black as the coals they have been working among, energetically begin un-rigging the gear, and lowering the warship's derricks. Soap and scrubbers and hoses, together with 'elbow-grease' infinite, come into play, for the ship, themselves, and their clothes must be cleansed of coal-dust. And it lies everywhere, and on everything—Lower-deck and Ward-room alike—in cabin and pantry, in nook and cranny.

And it may be that, even now, the vessel receives instruction to proceed immediately to reinforce her consorts at sea. With her bunkers

When Bunkers are Filling

re-fuelled, she is again a fit and essential war-machine.

In smartness of coaling ship may lie, under certain circumstances, just that difference which brings victory, not defeat or an inconclusive action in the North or any other Sea.

The Man Behind the Boilers

The Man Behind the Boilers

“**A** MUCKO! That's what I am, my friend," quoth the wiry, spare individual, in Bluejacket's uniform but bearing on his right sleeve the badge of a propeller, "jist a mucko ! But, I tell 'e, mate, us uns are Steam, just the same as her gun-crews are Cordite—Powder—call it what ye like. Yes, us uns are Steam!" The man behind the gun inevitably takes the interest and imagination of the public. But the man behind the boiler, to him also are interest and imagination in fief, for his work is equally dangerous and essential. Without his efficient co-operation the Bluejacket would be helpless.

In times of peace we but too seldom keep in mind the miracles of heroism done by the Stoker ; of comrades rescued from the inferno of scalding water and steam caused by a water-tube giving way in one of the boilers; or when a steam-feed splits asunder, or suffoca-

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ting gas generates in some innermost bunker, or fire breaks out there. Now, in times of war, the Stoker is getting some recognition of his services. Years ago Lord Charles Beresford referred in prophecy to * a page of fame which will illustrate the all-important position the boilers, engines, and those who control them, must have in determining the result of an action and a campaign.' Admiral Jellicoe and Vice-Admiral Beatty have set forth in certain of their despatches the opening paragraphs of that page.

All the 'black squad' of the Mid-Nineteenth Century has developed into a splendid hierarchy of Steam.

While his shipmate above, in casemate or barbette, has the sight and the excitement of the fight to sustain him, and take attention off sudden catastrophe and death, the Stoker three decks below, deep under the waterline and thick protection deck, has but discipline and courage reinforcing him; he courts terrible risks; and these risks are his not only in action, and with mines floating about, but also in times of peace.

Every hour he works, in peace or in war,

The Man Behind the Boilers

he carries his life in his hand, and that with a sangfroid approaching carelessness. For fire and water and steel are three most terrible and most treacherous conspirators. Yet, on the whole, the life of the Stoker is popular among the masses from which he is mainly recruited. If it is one of the hardest, bringing rheumatism and consumption in its train, it brings, too, very good pay, and has certain other advantages also.

On enlisting the Stoker recruit is drafted to Portsmouth or Chatham, where he is instructed in the mysteries of life on board ship, is given part of his kit, and is initiated into squad drill and field exercises, cutlass drill, and the use of the rifle and pistol, in which as regards the former a good knowledge of rifle exercises is one of the qualifications later on for advancement to Stoker 1st class. Physical drill and gymnastics are also given him.

After three months of such training, and being able to read and write fairly, he becomes a full-fledged Stoker 2nd class, and is put in possession of a full kit. He is then told off to join the working parties of the different vessels, and is thereby taught the elements of his

stokehold work. He has to get the knack of sweeping tubes, and cleaning the furnaces and boilers, bunkering coal, and other duties, including how to stoke properly. For three months again he imbibes this instruction, then he is drafted off to sea, and at last becomes a man behind the boiler—and in the bunker, too.

He now works where beneath him lie the bilges, double-bottom, and deep sea. Far above his head are daylight and fresh air, and strait and narrow the steel ladders taking him to the open spaces of the ship.

He works where the furnace doors may glow in white heat, and the row of great high boilers overtopping him hold within them ten thousand steam-devils always tearing at the joints to the sound of low thunder, or, rather, to the rumblings of a thousand empty motor-waggon trailing over a hollow road. Here, when the airlock is on the stokehold, and the fires are under forced draught, the great circular fans silently revolving high up behind wire caging, and every hole closed so that no air may pass except through the fires, and the coal-dust is flying in clouds, then the temperature mounts so high that it is nigh impossible to handle

The Man Behind the Boilers

metal with the naked hands. And to grasp a handrail a piece of canvas must be used.

Where great flares gutter their streams of heavy smoke in a fog of coal-dust, behind strong steel doors, hung in grooves, admitting to the intricacies of bunkerdome, the Stoker 2nd class works in a world black as Hades, to keep the furies of the boiler-room supplied with fuel. In the intervals his training is further put to the test; and under the sharp uncompromising eye of a Leading Stoker or a Stoker 1st class he acquires cunning in maintaining a level fire. When he has mastered this, and can competently clean fires of ash and clinker, striking down and slicing through, he is entrusted with all the fires in one boiler.

If he then prove efficient as a fireman when the boiler is working full power, and can handle the principal tools in use in the Engine-room, attend and oil bearings, and has a fair general knowledge of all which is requisite of him, the Chief Stoker P.O. of his watch recommends him to the Engineer Officer for the rating of Stoker 1st class. If he pass the short examination, the rating is given him by the Captain, and his pay goes up fivepence a day.

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After a time of responsibility for a boiler's fires, the Stoker 1st class finds himself in the Engine-room, lubricating and giving care to the machinery. When he is an adept and promising, the Engineer Officer selects him for attending in turn all classes of the auxiliary engines in the Ship. And if intelligent and satisfactory in the auxiliary machinery course, his upward career, after three years, to Leading Stoker and then to Stoker P.O., is assured, with substantial increase of wages.

Unlike his shipmate, the Bluejacket, who works in the free open spaces overhead, in the breath of the winds and the light of the sun, he that serves below in the dark places—where all is grim as the steel and coal surrounding him, and the hot air of the stokehold is as of the sirocco—gets eight hours off for each four hours on duty. But, so it is, that all these eight hours he does not aye get for leisure.

He may be in the 4-8 a.m. or morning watch. A few minutes before four o'clock he is brought back from slumber to the realities of existence. He turns out of his hammock, and betakes himself to the stokers' bathroom

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on the middle deck. Here he puts on his ⁶ 'fearnought' trousers and flannel vest, which with clogs and cap, complete the working rig, and at the first stroke of the bell he is below, fetching up for his ten-foot iron rake or other implement in the great rack that overhangs the fires. Four hours of stiff incessant labours in a temperature often far beyond a hundred degrees bring a black and sweating face and tired thews. Work in the engine-room, clean, well-lighted, and lofty (for battle-ships and heavy cruisers) is a terrestrial delight compared with that in the boiler-room. As regards the bunkers, it is Paradise. However, when eight bells sounds again the Stoker's work for that watch below is done.

His grimy appearance, that is his real service uniform, he reserves exclusively for working hours in the stokehold, and he must not appear in it at other times and places. Speedily the Stoker, then, rids himself of it in the bathroom, returning his boiler-room rig to his own numbered locker there, shifts into presentable clothing, and makes for his 'house'—the mess, and for breakfast. After the meal he changes into the 'rig of the day,' as announced by the

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Boatswain's Mates, and goes to 'divisions' along with the rest of his shipmates for inspection by the officers. The Stoker must attend drills, too, and fire quarters and evolutions calling for all hands.

After prayers are read, then follow drills or exercises, which usually last till 10.30, when the men are dismissed. Then the Stoker has leisure to employ himself in divers ways till dinner-time at mid-day, when the men of the oncoming watch below relieve their mates at 0.30. p.m. And not till 4 p.m. does the Stoker of the 4-8 a.m. watch relieve them : himself and mates to be relieved at 0 p.m., and coming on again from midnight until 4 a.m.

Yet, though the Stoker labour as a giant, where stand as if in endless succession, on either side of the narrow free space of the tire-room deck-plating, great rows of shuttered furnaces, within which huge white-flamed tongues leap high among the spaced-out water-tubes, or belch along within cylindrical boilers—though he labour, tearing his heart out to keep *all steam,' or tearing his heart out to keep it low, too—he, off his watch, is as

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fit and dynamic, clean, neat, and trim as the Bluejacket.

Like him, he has also to help clean parts of the vessel, scrub his hammock, clothes, mess, etc. In the afternoon, too, a squad of Stokers may fall in on the Quarter-deck for physical drill, and go through all the mysteries of long and short arm balance and sundry other gymnastic feats, and doubling round the deck.

"Kangaroo's work, I calls it!" grunted "Steam."

But he knows the chances of promotion are good.

The Stoker can attain in time the warrant rank of Artificer Engineer, and maybe, if Providence and himself are conspicuous in their duties, obtain the rank of Engineer Lieutenant, ultimately, for 'long and zealous service.' Which service, however, the war may have very considerably expedited.

'Clinker-knotter,' they of the upper-deck work and pure fresh air fondly call the Stoker. They know many a splendid story of his splendid achievements and self-sacrifice for England and the Empire.

The Bluejackets Diversions

The Bluejackets' Diversions

ARE not the good spirits of the British Bluejackets indomitable as they are inexhaustible? And their Officers', too?

Can ever a more superb instance be recorded of their insolence of gaiety toward death than that related by Commander Damreuther, one of the six survivors of H.M.S. *Invincible*. When the great ship was burst in twain by the force of the explosion he was shot into the sea as if from a catapult, and went down some thirty feet. On coming up he found himself hard by a raft, and clambered on to it. Shortly after, he marked a broad, black, smiling face, covered with grease and oil and soot, appear at the side of the raft. "I bet that's Sanford," exclaimed the Commander to this survivor, "only an Irishman's sure to smile after an experience like this!" "An' sure you're right," replied Lieutenant C. S. Sanford, still smiling as he hitched himself up on to the raft.

And, again, that historic instance after the

Fight of Jutland on the 31st of May, 1916, when London was so gloomy, so perplexed and troubled, at the Admiralty's first cautious intimation, and many folks there and elsewhere, who ought to have known better, were talking openly of disaster, if not of defeat. It was during this black hour, then, there came into Victoria Station, the first batch of Bluejackets, who had taken part in the great engagement, and now were going home on leave. The croakers beheld them, and barked : they held their breath in wonder, and were all amazed. The Seamen were bubbling over with happiness and high spirits. Daunted ?—or, even at all concerned ?—not a jot. Their high spirits were contagious. And, it is not too much to say that as they continued to come up from their different bases, breezy and full of the battle, the atmosphere of doubt and nervousness lifted, and the plain and stark truth of the fight was realised.

Already that great naval base Wilhelmshafen had been barred and bolted against all and sundry in Germany for the period of three months, in the Marine-Amt's effective endeavour to hide the truth from their cozened nation.

The Bluejackets Diversions

Certain it is this blithe disposition which the British Naval Seamen usually own is much needed on board ship, where, indeed, a Dismal Jimmy is not often encountered, though there are those whose nature does vent itself in a 'grouch.' The conditions of their life at sea make amusements of some sort almost a necessity. And in the hostilities the long, uneventful watches while waiting for the Enemy to issue forth, together with the equally tedious days and nights spent at remote North Sea and other bases, throw the men upon their own ingenuity in providing recreation and fun and frolic.

Not for them is the bicycle and the cinema palace, nor for them are any of the solaces of any club with games of draughts, dominoes, chess, backgammon, and others, such as are available at times for them at the main bases. The Bluejackets *afar off* have to depend on themselves. In many instances, now, the Ship has a portable cinematograph, sometimes in the Padre's care, and equipped with popular and topical reels. Through the men's own initiative, and that of friends, the monotony may be broken with many a sparring bout,

and with concertina-playing and jews-harping, dominoes, chess, and other games. Lectures there are for such as may care to attend. And in divers of the vessels a weekly or a monthly is published, price twopence or more as may be, and in quip, humour, and extravaganza it contributes to the general gaiety of the Ship, and, sometimes to the embarrassment of some, for the editor and contributors can wield pens even as disconcerting as diverting without infringing the unwritten code of good taste in His Majesty's Senior Service.

There is one diversion, however, which the Bluejacket has with him at all times, and it is an unailing one.

They in the cramped little mess beneath the small round hole before the funnels of the torpedo-boat, or they in the forecastle of the destroyer, or on the large and airy mess-deck of the great vessels, may all and with the same ease partake in it. It is argument. And there are many of the Lower-deck who argue with the craft and enticing discretion of the ancient Greeks, and in the wise marshalling of their facts and counter-parries can put Caxton Hall to bitter shame, aye, and trained debaters,

The Bluejackets' Diversions

when they argue on matters which come within their ken. Politics are eschewed, for the Royal Navy has none of them, but other leading topics in the newspapers, and especially a popular law-suit, are thoroughly discussed.

It is then, on the mess-deck during any leisure minutes the men have in the dog-watches, or in the first before 'Hammocks' is piped, that the music and songs so industriously given forth by the 'juice-box' or gramophone loses its attraction, for the Bluejackets dearly love an argument. So much so that the Ship's company may become divided into sides, and a species of wordy civil war may exist till some episode or other momentous topic comes along to attract attention.

An astonishing memory have Bluejackets for figures and dates, and places ; and recollections are frequently challenged. Never tired are they of hearing of each other's last ship ; and her record making for coaling, time to prepare net defence against torpedoes, clear ship for action, or get a landing party away to the shore, occasion altercation and reminiscence, aye, and many a tall yarn.

She is an indifferent vessel, no matter where

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stationed, that does not have a cricket team, and a football team as well. And the team is ready to play all comers in the ports visited, regardless of climate, situation, or any other condition. So, where turf is unknown, or the ground is very hard, the Bluejacket and his Officer readily make shift with a pitch composed of matting. Nothing may stop their ardour. On board ship a screen is rigged on the upper-deck, and a game of cricket is then carried on heartily.

One of the most popular playing-grounds in the world, is it not that which is laid out at Whale Island, the greatest gunnery establishment of the world's greatest Navy. And here, as also at others laid out at Hong Kong, Bombay, Malta, and other bases, the Officers and men hold the sports that keep them in touch with terra firma and certain of our national characteristics.

But that which arouses the keenest and most popular interest on board is the regatta, which is held on all stations where ships come together.

Only theatricals, including every manner of stage performance, from the negro minstrel

The Bluejackets' Diversions

party to recitations and farces, together with the inevitable topical allusion 'artiste/ be as popular among the Lower-deck. The second arouses their sense of general gaiety; but, the first, it touches directly and keenly upon that which is ever hard upon them. It touches upon their sense of competition, of strenuous rivalry, of winning against great odds. And insistence upon the last is ever dominant in the British Navy, and acted upon. The first part of the victory off Jutland declares it.

At these regattas, then, there are all manners of races. Sailing races and pulling races, races for cutters, races for launches and gigs, for copper punts—these small flat boats used when the ship's side is being cleaned—and for all of them together. Fancy rig is then the order of the day, both boat and crew—from the full-rigged three-master to the outrigger of the South Sea Islands and war junks propelled by shovels. Their crews may dress themselves as clowns, cooks, niggers, pierrots, and freaks of all kinds, taking full liberty of the occasion to indulge in that delight of the British ' Matloe '—grotesque and striking attire that is as far removed from the clothes

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of the naval trade as is possible. Yet, none the less because of their amusing antics do the men abate their intention of winning the races set before them—and the prizes, certain of which make the winning craft the most enviable of all to be envied.

The pulling races beget most interest among the men, for every boat, and nigh every man in each of them, is personally known to a certain proportion of the spectators. Each ship has her representative in the race, backed by the entire company of the vessel. Long hours of careful training have been spent, and when the small craft returns after a race victorious the company's joy is something worth witnessing. Never a Derby Winner evokes such spontaneous and delirious joy. For the Ship is the crew, and the Crew are the ship. So afterwards, as greatly daring because of her success, the small craft is matched against all and sundry at whatever port on that station.

With the keenest wholehearted delight does the Bluejacket carry on ashore with such events as the sack, three-legged, egg-and-spoon, obstacle and other races. And those of their

The Bluejackets' Diversions

messmates that are regarded as humorous 'birds' keep the spectators amused between the items on the programme. But, above all, is tilting at the bucket the most favourite diversion ; for does it not necessitate a quick eye, a quick arm, and some degree of discomfort ?

Smartly does Jack wheel a messmate, in a barrow, under the bucket, and his 'raggie' seeks to thrust the pole he carries through the hole in the board nailed to the bucket. Success brings a prize for the accuracy of aim—and, it brings a thorough drenching, too.

As Heard in 'Andrew'

As Heard in ' Andrew '

IF, as has been said, dialect denotes an aloofness of the speakers from intercourse with everyday life and the King's English, then the men in the Royal Navy are among the most aloof, for they have a dialect, or, better, jargon which is not within the comprehension of the civilian, or "shore-loafer," as a Bluejacket may call him. Were he suddenly transported into the Lower-deck or among the Officers, especially the younger ones, he would most probably find himself in a state of bewildered ignorance for some days, till in time the meanings of their words came to him like, as they might say, "having everything on a split yarn"; that is, ready to start at once.

But the sailorman's speech is something which no mere civilian can ever hope to master fully, for it is a thing of the Senior Service, and has been built up these hundred years, aye, and far more. The mast-and-yards talk of the times of Howe and Nelson is reinforced with terms derived from the Navy of to-day. A

seaman or other may be told by a blunt-tongued messmate that he is "clucking like an ash-hoist" because he is "two ends and the bight of a fool" (the bight of a rope—the loop lying between its ends). With this one hears the modern Navy with its mechanical contraption for clearing the ash from the boiler-rooms of the stokehold, and the Navy that fought and won in the Battle of the Nile, and others, in the days of floured hair and pig-tails.

The Army has nothing to show like this for continuity. The jargon of the soldier—"gabby," or "swaddy," as the Bluejacket calls him—is continually being altered by his change of surroundings, and towns in which he is quartered. With the exception of the historical nicknames attached to certain regiments, it is very doubtful if a single example of the dialect spoken by the soldiers of the Peninsular War is used by the Army of to-day. But the Bluejacket, and Officer, on the other hand, whether on a foreign station or at home, is always under the influence of the Navy and its perpetuated traditions.

There is much good-natured chaff under-

lying certain of the sobriquets he uses daily, as when he terms the Carpenter " Chips," Carpenter's Mate and his men the " Wood-spoilers," and the Stokers as " Clinker-knotters." Married shipmates he designates as " Bundle Men," though it is not clear whether the "bundle" refers to the wife or the little " bundle " she may be nursing. Also in another of the sailorman's allegorical expressions it means a collection of good things—" What's your bundle, matey ?" Again, with singular aptness he names the Signalmen " Bunting Tossers"; "Old Blue Lights" indicates the Gunner, and " Atmospherics," " Sparks," or "Juicey," the Wireless Operator or Telegraphist, who is also called an " Angel" on account of the wings and forked lightning of the distinguishing badges. " Bullocks " or " Leathernecks " is the Seaman's fond appellation for the men of the Royal Marines, though sometimes one who has been on the Mediterranean station refers to them as " Port Mahon Sodgers," and thereby maintains historical continuity beginning from the late days of the eighteenth century, when the Marines garrisoned Port Mahon in the Island of Minorca.

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Just as the Bluejacket calls his shipmates "Matloes" (derived from the French word), or "Flatfoots," so he has a series of nicknames for his Officers. The Commander-in-Chief is the "Ral," and the Officer commanding the vessel to which he is rated the "Owner" or the "Skipper"; while the Commander who deals out lighter punishments is the "Bloke," though the defaulter may find himself consigned for a weightier matter to the "rattle" or cells.

Colloquially the First Lieutenant is known for'a'd and aft as "Jimmy the One" or "Number One," and his rank as a "two-and-half-striper" from his badge, the two thick rings and one thin of gold lace on his cuff. The Gunnery Officer is "Gunnery Jack," and the Navigating Lieutenant "Maps and Soundings," or the "Navigator," while his assistant midshipman is the "Tankey" to his messmates in the Gun-room.

The Ward-room and Gun-room—especially the latter, where the "Warts" or junior Midshipmen and other "Snotties" (derived from the primitive method of wiping one's nose on one's sleeve) have unerring accuracy of epithet—also make use of peculiarly figurative language,

from the "messman's horror" applied to a shipmate, whose appetite is so great that it threatens to eat up the messman's gains, to one of the most modern, coined apparently in this war, that of a "mouldy" for a torpedo.

One of the most ironical of their terms is "a one-gun salute" meaning a court-martial, and obtaining from the practice of the vessel, in which the court-martial is to be held, firing one gun at 8 a.m. on the day of the trial. Another charged with sarcasm is that of the "Hungry Hundred" applied to the first batch of supplementary Lieutenants who entered direct from the Merchant Marine; just as, with the same light-hearted jocularly, they nicknamed the ordinary seamen entering the Navy for five years only, when Lord Selborne was First Lord of the Admiralty, as "Selborne's Light Horse" or "C.I.V.s." Whether he is serving in a "bug-trap" (gun-boat), or in "the Trade" (Submarine Service), or on board the C.I.C.'s Flagship, the young Officer's tongue is equally nimble; be it that of the "Indiarubber Man" (Officer giving gymnastic instruction), or "Salt-horse" (ordinary,

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watch-keeping Officer who has not specialised), or any other.

Just as mordant is the Bluejacket in ironic humour.

" Kissin' the Gunner's daughter " indicates an uncomfortable posture many a seaman has had to take across the breech of a gun to receive the cat-o'-nine-tails. Perhaps the phrase " Buyin' white horses " is best significant of his pungency of epithet. " White horses " is a very old nautical term for the endless waves curling over and breaking into masses of foaming water. When a messmate wastes his money or "quiff" on shore in wanton extravagance, he is told significantly that he has been " buying white horses."

Nowadays, and especially during the war, the Ship's Police or the " Jaunty " and his men, the " Crushers " or " Body-snatchers " have an easy time when the Bluejacket returns from " gens " or leave ; for, thoroughly as he enjoys himself, the British naval seaman is not addicted now to becoming " tin-hatted " or " shot away," or " up in the riggin' cheering ship " (holding a very heated argument), through too much stimulant. Yet, as regards hospitality, he is

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neither "dead west" nor "pieso," as he terms closefistedness.

A man in the Navy does not grumble, he "does a tap," or, if he gets angry, is "under the truck" or "climbin' the riggin'." In the mess, which he may call "the house" or "the cottage," he may have for dinner a "pheasant" or a "straight bake," or a "burnt offering," which means a joint of meat baked by itself. As occasion arises there is "schooner on the rocks," "Lundy Island," or "high and dry"—meat baked with potatoes round it. Pudding he dismisses as "duff" or "spotted dog," but plum-pudding to him is "figgy duff."

Food as a whole he may refer to as "mungey," and when he buys a tin of sardines at the canteen he may ask for a "coffin o' sharks" together with the "pang"—bread.

On the Lower-deck if you are a Clark, it is the traditional surname of "Nobby" that you get—if Green, "Shiner"—Martin, "Pincher"—Miller, "Dusty"—Wright or White, "Shiner" or "Shiney"—Bennet, "Wiggy"—Harris, "Chats"—and so on through a great number of surnames. With vessels, too, the Lower-deck mint nicknames freely, from

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the *Agincourt* as the "Gin Palace," the *Agamemnon* and *Lord Nelson* as the "Aggie" and "Nellie," *Bellerophon* "Billy Ruffian," *Ariadne* "Hairy Annie," and others down to the latest battleships, the prototype of which, the "Dreadnought," the Bluejacket promptly christened the "Dread-O."

The Ward-room shows some wordy respect when they call the Chaplain the "Padre," but forward he is known as the "Devil Dodger" or "Holy Joe," or again, and with more becomingness, as the "Sky Pilot."

To them the sea is the "ditch" and the beach is the "shore" as often as not, though going on land for an hour or two means "takin' the beach"—a lordly trophe for brief leisure there, and no "caulk" or sleep, but an opportunity for indulging in "gubbins" (a synonym for "mungey") of a sort not served out on board, and, possibly, if the untoward ensues, of having to respond to the "angel's whisper" or the defaulters' bugle call next morning; when the Commander or the Captain accepts "no Ordinary Seaman's excuses"—specious and inadequate pleas in mitigation.

Bluejackets who are intimate friends are "raggies," and, when it happens they fall

out, and the friendship ends, they "part brass-rags." In every ship a certain time of the forenoon is occupied in cleaning brass and woodwork, and, as there is work usually for two on one brass or other, friends generally share the work between them, and give each other the free use of their polishing paste, emery paper, and rags. They share the same bag for these "cleaning tricks," and, consequently, when the intimacy is broken up, and the "tricks" separated, they "part brass-rags."

Of all the numberless words of the British naval personnel's dialect and expressive phrases—such as a "face like a scrubbed hammick" or "mick," or, its analogue, a "face like a sea-boot" (the summum of facial lugubriousness)—there is one which has crept ashore, and into the Army also. It is one that has been used in the Navy from the first days of the use of signals, when they were taken down on a slate, and, after having been read and acknowledged, were rubbed off the slate with a damp rag. "Wash-out!" cried the signalman then to the signal-boy. "Wash-out!" he cries to-day, too. Hence the phrase "It's a proper wash-out"—complete finish—complete failure, also, and of no good.

Concerning (S)

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I

OF all the maritime craft which man has built to the hazard of his life none is so wonderful as the Submarine. She belongs to legerdemain.

With her all the difference betwixt life and death is ever a mere hair's-breadth, as it were, for she is a box of tricks and gadgets. Juggling with the equipoise of her stability is nigh ever hard upon the border-line of danger. Yet, in the hands of her crew the underwater boat sinks, and soars, and goes upon her way, seemingly with as much ease and freedom as any dolphin.

Now this is the principle on which the Diving Submarine, thus distinguishing her from the Submersible, is given existence, and it is worked on calculations of the greatest nicety, or disaster waits upon her and her men.

Into her ballast-tanks is pumped water compressing the air therein, and holding it ready to exhaust the tanks anew, till the entire

weight of the boat plus that of the water now within her tanks is very nearly the total of the displacement of the craft; and that is the tonnage of water she displaces when afloat. If, then, with ballast-tanks so filled, she displaces too much, or, again, too little, her powers of floating in safety are imperilled.

This difference between the two weights upon which her safety depends is termed reserve buoyancy, and in certain classes of craft it has been the very narrow margin of about three and a half pounds to the ton.

The Submarine is then well down in the water — 'awash.' When she is floating upon her entire buoyancy, and this may mean that no more than two-thirds of the length of her steel hull is visible, she is in 'light trim.'

Now when awash she is driven by her electric motors at a speed of at least five to six knots. Her compensating tanks are filled with water, and the horizontal diving rudders each side of the hull are put up. As she surges forward the inevitable pull of her diving rudders tips up her stern, and the Submarine runs down to lower depths.

As soon as the pressure gauge indicates that

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the depth desired has been reached, the inclination of the diving rudders is lessened till she attains even keel. Yet the rudders cannot, with regard to the safety of her, be brought horizontal again: they have still to be maintained in action. For they must be operated just enough, and no more, to obtain a downward pull counteracting the tendency of the craft's reserve buoyancy, which, together with the driving power of her propellers, will otherwise bring her up to the surface.

Hands exceeding expert, and so steady, manipulate the highly-sensitive gear of the Submarine's rudders. To blunder in but an infinitesimal measure with them brings dreadful catastrophe, nay, possibly, death to all. A dip of but ten degrees can send the vessel down to a depth of 180 feet in little more than one minute. And so she may thrust her stem irretrievably into the soft mud, or crash against a hard bottom, and find death for all within.

When it is desired to bring her to the surface again, either her motors are shut off, and then her reserve buoyancy lifts her upward, or the position of her diving rudders is altered, ceasing to check the tendency of her to soar for the

open, or even increasing it. Again, the Submarine may see the sun a-shining once more through pumping out her ballast-tanks, or expelling the water by means of the compressed air.

Yet, however, certain of the diving craft are so delicately poised when under water that finely adjusted so-called pocket-tanks have had to be brought into play in order to avert uncontrolled plunges which may arise through shifting great weights or through stores diminishing. Even the gasoline tanks call for their burden of water when emptied, to compensate for the weight of fuel used.

The Submersible, on the other hand, does not dive beneath the surface. She sinks on even keel, but in no wise with the rapidity of the Submarine That Dives; for she is forced under in a different way.

The Submersible's long and higher superstructure is filled with water, and also the interior ballast-tanks, till her tall conning-tower is awash, then the hydroplanes—these four steel vanes, two attached on each beam amidships—are set at the deflection necessary. The combination of these rudders and the

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pressure of the water against them force the Submersible to sink, and to rise, on even keel. And to this there is the advantage that she can discharge a torpedo in doing so, and this is ^not so with the underwater boat that glides rapidly beneath bows first.

Hence certain episodes in the Great War, and also, because of the U-crafts' slowness in submerging, certain other episodes—not in their favour.

Nothing on the naval side of the hostilities has given rise to greater and more surprising developments than the underwater craft. Not only has the building of larger types of between 2,000 and 2,500 tons extended the radius of operations from 300 miles in the first months of hostilities to over 4,000 miles now, without renewal of stores and provisions, but the structural design of the craft has been bettered; and this not only on the east side of the North Sea. Nature gives no monopoly in brains.

In the earlier days of the war, collision between surface vessel and underwater craft as often as not resulted in the sinking of the latter with her crew, for in those far-off days

the underwater craft had but one shell. To-day, like the great warships and liners she seeks to destroy, she has a cellular hull—an outer and an inner skin. And thus, when the naval patrol rammed U 18, the flow of water into the cellular space between U 18's two skins being slow enabled her Officer to obtain time in which to blow out his ballast-tanks and obtain as much buoyancy as was practicable. And so, on rising to the surface, he and his men were saved by H.B.M.S. *Garry*.

At this day, too, the underwater craft is reinforced with a mine-evading contraption of steel guards and horns projecting to a meeting-point beyond the bows and curving well down, even as a cow-catcher on the American locomotive does it act. And with divers other strange things is she equipped.

Some have it that a certain class of U-boat not only mounteth the disappearing Q.F.s, but wireless tackle of such a power as may call up stations in Prussianised North and South Americas; and can outvie in appearance a full-rigged three-master, when the occasion demands. But then, the habitats of Fleet Street must know everything, even

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to the gasoline tanks cached deep under the water, whence the ubiquitous Michael sucks sustenance while the Grand Fleet ranges hopelessly overhead.

II

With a curious thrashing sound the Submarine is surging onward. Her short wake streams white astern. Little showers of spray spurt up her bulging cigar-shaped hull, and wet the long narrow deck of her superstructure, from the ends of which the shell of her tapers away rapidly,

Standing on the slippery deck, that is fended off from the gurgling waters by a life-line rove through a row of steel staunchions, are several of her crew.

Clad they are like their Officers, in white woollen sweaters and trousers and sea-boots. One of the Engine-room, relieved from his watch where machinery roars dully along each side of a middle gangway, sits on the brass lid of the compass box but a little way astern of the conning-tower, and smokes a cigarette shielded in the curve of his right hand, for the breeze blows gustily.

Above him, the Lieutenant-Commander takes the glasses from his eyes, and speaks to the Quartermaster at the wheel alongside him on the conning-tower; and the craft swings a point or two to eastward.

"All hands below, and down deck."

The men swiftly mount the conning-tower, that stands some eight feet or more high, a little forward of amidships, a circle of clear thick glass scuttles round its upper rim ; and vanish below past the two watertight hatches. The last Bluejacket strikes the collapsible little bridge giving four or five feet elevation abaft, and follows his shipmates.

For a few seconds the Officer looks about him, considers the weather again, and the vessels in sight, then also drops down the brass ladder. The hatches shut with a metallic thud, and rasping screws seal them invincibly against the waters.

Already the petrol engines have been shut off, for very speedily would they exhaust all the interior air, and the electric motors are now in clutch on the propeller shaft. And they may drive the craft underwater along at eleven knots, and a little more at a pinch, yet

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that is four to five knots less than the petrol engines accomplish when she is on the surface. Lighting and heating, aye, and cooking too are effected by means of the same magic and mysterious power.

As the C.O. steps off the ladder he throws a swift look around the Submarine's nerve centre, for it is here—in this spotlessly white and clean compartment, almost semi-circular at the sides and looking forward and aft—that the craft is controlled and navigated.

Abaft the accommodation ladder a little way sits the 'wheel,' on an iron pedestal removable at will, and he steers by the lighted card fixed at the level of his eye, for upon this card is cast the reflection of the compass insulated in its brass box on the deck overhead, on account of the deflection caused by the steel and electric motors were it contained within the hull. At hand, for there is none too much room even in the very latest and greatest of the underwater ships, stand the men at the wheels directing the diving rudders and at the electric switches, while others are at the regulators of valves admitting water to the tanks. There is a nest of speaking-tubes, and dials

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and gauges, together with pipes and valves innumerable, line the bulkheads of the compartment ; the cramped space of which in the great boats is also taken up by the dynamo for the gyroscopic compass. The entire vessel is a closely packed box of most delicate mechanism.

" Keep her as she goes," the Officer orders the wheel, after having cast a glance at the clinometer.

Then the Lieutenant-Commander gives certain other orders, for, though there is a Second-in-Command, the **C.O.** is the vessel's voice as well as brain.

The valves of the trimming-tanks are opened, and keenly observant eyes gaze upon the gauges just above. The crew feel the hull deaden as it were beneath their feet. Outside, the waters are stealing up its curving sides, and white plumes of spray may be bursting from the trunks of curved pipe forming the vents, through which the air may now be forced by flooding the tanks. Inch by inch the Submarine is sinking deeper, and the sea creeps swiftly up the French-grey walls of the conning-tower.

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In the control chamber all attention is concentrated on the gauge indicating when the craft reaches the vanishing point of her buoyancy, and, also, all attention on the clinometer to see that she sinks on even keel. If she dip a little forward a greater weight of water is pumped into the trimming-tank aft, or, on the other hand, more water is pumped forward to correct the depression aft.

Suddenly it is announced that the craft has sunk to her diving trim, which means that she has now the minimum degree of buoyancy for hovering awash on the face of the waters.

Her Commanding Officer issues other orders. The Petty Officer, standing by one of the brass wheels regulating the hydroplanes, makes a tentative movement of it. The underwater boat dips by the bows correspondingly. Already to a flash as of lightning at the switches, he there had started the electric motors, and, as their purring greatens in the silence and continues, the needle on the dial in front of the hydroplane operator slowly rises, indicating the depth as the Submarine forges onward and downward.

The light of day slanting in through the

scuttles of the conning-tower disappears into a greenish blankness. Therewith the **C.O.** grasping the steel handles of the brass eyepiece, attached to the broad steel tube of the periscope, rising some fifteen feet above the conning-tower, slews it round, and gazes in upon the small mirror at the foot of the sighting-piece ; and this reflector is cunningly plotted with fine lines to indicate the position exactly. Of a sudden the tiny, facsimile picture of sea, sky, and distant ships outlined by the periscope vanishes into a dull, blank grey, which becomes an utter void when the top of the optical tube sinks farther from the surface of the waters.

To another order from the Officer, now attentively observing the clinometer and the speed dial, a slight twist of the diving planes soon brings the craft on even keel, and she surges along sweetly and in comfort eight fathoms deep. Maybe, too, many more, for she can go down fifty fathoms, aye, and more, with safety to all. Were she seven fathoms or so under, and a ship within a hundred yards or less, only the looming shadow of the hull under water would be observed by the look-out, who is now peer-

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ing through the scuttles of the conning-tower. And, at less than ten fathoms from the surface, on the usual sunshiny day all is a baffling dim green to the eye of the Submarine.

Her men feel no personal discomfort at any depth: no dizziness, nor headache and sickliness, as wiseacres predicted once upon a time.

The tremendous pressure is borne by the hull of the craft, and in nowise touches the men, the endurance of whom lasts as long as there is fresh air to be breathed. At this day the vital air is stored at a very high pressure in cylinders or other reservoirs, and, when the Submarine cannot rise to breathe, it is freed gradually, the foul air being pumped out, to form a trail of bubbles upon the face of the sea. Yet in the ocean-going craft the air suffices for from fifteen to twenty hours, with a generous margin of safety thereto. The constant spraying of the compressed air charges the atmosphere with a distinct feeling of freshness, and, though it is cool within the underwater boat, there is no chilliness there.

With her periscope under the water, however, she is blind.

So it comes the Commanding Officer orders the ballast-tanks to be blown out. In an instant or so there is the sensation of being taken upward as in a most smooth-gliding lift. Lighter and lighter grows the dull greyness upon the mirror of the optical tube, or the periscope table as it was in the oldest craft, that have been so far outclassed since that night British Submarines first penetrated the fastnesses of German waters. Then, more rapid than any twinkling of the human eye, sea and sky appear in miniature, cast down the optical tube by its prismatic adjustment. The ocean lies flat upon the mirror of the eyepiece, divided by the fine lines drawn there, and the shadow of the near wire stays protecting the periscope from the drag-lines of mines and sweeping craft.

The Lieut.-Commander, peering strongly upon the small glass, turns the periscope right and left, searching the near sea for the vessels thereon.

To the dull and monotonous thrum of the electric motors drawing their vital current from the accumulators the Submarine cleaves onward, invisible except for the mere tip of

Concerning (S)

her periscope and the faintest eddy on the waters overhead. Such vestiges the eyes of ordinary men—when near enough, too—are apt to overlook. But there are those who are trained to pick them up from afar.

The U-boats know it to their cost.

As the Fleet is at Sea

As the Feet is at Sea

THERE is no spectacle more splendid, nor more dreadful, than the Fleet at Sea.

Grim and watchful—slow because of their tremendous weight of might, which may occasion a cataclysm laying a proud and puissant nation low, and make nigh countless thousands mourn—the Battle Squadrons march onward spaced together, with their attendant vessels feeling for danger all around. Yet, to the majority of folks, a Fleet at sea is but a gathering of Battleships, Cruisers, and Torpedo-Boat Destroyers: sailing, maybe, as a great nation's Fleet sailed some twelve years ago or more, higgley-piggley to its doom in an Eastern Sea.

To witness the Fleet at Sea, when the air is sunny, the horizon far-lifting, and signal flags flash bright, is to realise the splendour of strength. To glimpse it under a lowering grey sky of a December afternoon, with the smur of fog in the biting nor'-easter, the horizon fast closing in with night approaching

and the long-drawn lines vanishing under the murk as if into space, is to realise the dread menace of its awful strength—a menace that holds the most powerful military nation to the shore. For the Fleet is the most wonderful and most dangerous machine of war. It moves, too, with a mathematical exactness and certainty, which are for all the world like the movements of a clock, carrying the hour and the minute hands round until the time appointed in which it is to strike.

In organisation a perfected Fleet is hard to parallel. The Battleships, the Cruisers, the Destroyers and other craft, move as if they are mere pieces on a chessboard: and move only to the will of the Master Player. His inflexible will is in all, even as it is above all in his Fleet.

Whether in peace or in war a Fleet in being at sea conforms to certain recognised formations, even as its units, and each vessel is a unit, conform to the regulated exercises, patient instruction, and judicious organisation, which are the foundation of efficiency. The Battleships in the centre, always in either single column line ahead, which is usually

As the Fleet is at Sea

adopted in a Fleet making passage at sea—or in column of divisions, that is in parallel divisions—with the Cruisers thrown out afar on the bow, beam, and quarter and the Destroyers shielding all around, the Commander-in-Chief or the Senior Officer present, at the head of the line to port, leading and setting the course—these are the two usually accepted formations for cruising. Though there are others, among them the bow-and-quarter line, which is a diagonal disposition, each ship bearing on the quarter of her next ahead.

Yet, whatever the formation, all is within touch and constant communication by means of signals and wireless telegraphy with the Senior Flagship.

To a speck of colour at her main, the great lines of battleships form and reform in steady, silent swings, turning and twisting, as she directs, one division threading through another in the most precise order, the distance ship from ship never changing. While the far-away fan of cruisers, and the other craft, may also contract, expand, traverse, and perform all sorts of stupefying movements. They twirl and twist soundless over the sea, like steel

phantasmas dancing a rigadoon. On the fore-bridges of the great ships two Midshipmen stand for four hours at a time at each end of the lofty structure with sextants at their eyes, and theirs it is to report at once any alterations in the distance between the next ahead.

Though, however, the three formations described, together with that of line abreast, are the principal ones on which all variant dispositions, movements, and tactics are based, no man can know of that which may be assumed for battle. In the days of the eighteenth century it was known, and adherence to it cost Admiral Byng his head. But, as to how a Fleet would be disposed to go into action, depends in the British Navy on the formation and the strength of the enemy, and, too, on such opportunities as daring tactics may afford.

When a Fleet is steaming at sea it is organised into two or more divisions, according to its strength, the Flagship of the C.I.C. leading the principal division, composed of the lowest fleet numbers—each vessel having her distinguishing number for use in evolutions—and the Second-in-Command, the van ship of

As the Fleet is at Sea

the second division, and, according, if there be others. Each division again has a sub-division or sub-divisions led by a Junior Flag Officer or a Senior Captain. Thus it comes that, when the Fleet is disposed in single column ahead, the Commander-in-Chiefs Flagship leads, the Second-in-Command following immediately on the C.I.C.'s division. When, however, steaming in columns of divisions, each Flag leads her line respectively, the Senior Flagship in the van of her line to port. Thus, the technical phrase, 'Column of divisions, disposed abeam to starboard.'

Fleet formations in hostilities, to-day, are based on the effort to bring the greatest number of guns to bear by means of concentration and position, so that the greatest weight of projectiles hit a particular section of the enemy's forces, in order that his units be disposed of in detail; and, also, while retaining such full crushing power, to win the position where his guns can have the least effect.

Such is the sole end of battle formations. And, so, a Fleet, be it the Grand Fleet or another, achieves the potency of its tremendous might.

That opponent is to be gravely respected, though not necessarily feared, who through his adroitness compels his adversary into an untoward position.

On May 31st 191G, was the victory of the Battle of Jutland.

Under the Red Flag

Under the Red Flag

GREY morning is enveloping the shoreward waters in a grey background of haze, but seaward they sparkle in the sunshine as the light breeze takes them. Up toward the base, black smudges indicate the serried rows of battleships waiting to be unleashed. Over against the south lies a great cruiser, and at a distance from her there gently rocks a small boat.

In the bows of her she has hoisted upon a pole a big red flag.

Under this ominous flag there work men than whom the Royal Navy has no braver, nor any whose undertakings are more lonely and hazardous. Yet none of these men figure in public ken, and only very occasionally is their existence revealed. Theirs is a section of naval personnel to whose war service little attention is paid. And their extra rating pay is reckoned in pence only, and at highest is sixpence a day. But, they are indispensable.

They are the Divers of His Majesty's Senior Service.

At times they achieve feats, feats that are not even dreamt of for the 'movies,' even these in which, for a prosaic public, most hairbrained and dizzying adventures are sought to be portrayed.

In the small craft with the red flag, the Officer sits on the gunwale, and gazes at the bubbles rising some way off as he talks to the Gunner in charge of the diving party. The two hands at the air-pump monotonously heave round their wheels. The seaman by the ladder over the stern blinks anxiously, for it is only the third time he has been on this duty; and through his hand as Diver's Attendant pass life and safety, aye, or death, too, to the submarine man below; and for this, he is at most paid sixpence an hour, or by gratuity or bonus as the case may be.

Controlled mines, always fired electrically from the shore—that is to say "ground mines"—are in position in the deep-water way they are to protect. But something amiss has come to one of them, and only now, after a search on the bottom of the sea, is the Diver

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replacing the mine in its exact station in the minefield, and re-adjusting its cable. None but he and his mates under the Sign of the Red Flag may repair the slightest mishap to the delicate yet monstrous contraptions, which form an all-important part of the defence of this base. Only he and his mates, aided by their electricians, may weigh and handle the mines on the gloomy floor of the waters.

Every first-rate fighting ship has her divers' crew of from two to six men, and they, chosen from the Mechanic, Seaman, or Stoker ratings, are most carefully equipped, most carefully, exactly, trained, under the direct responsibility of the Officer Commanding. The Gunner or the Torpedo Gunner—or specially selected Warrant or Chief Petty Officer, if the vessel does not carry either of them—must always be in charge of the diving party; and, moreover, so insistent is their safety kept in mind that the operations must be carried out under the supervision of either the Gunnery or the Torpedo Officer, or some other of the commissioned executive. Physically, men of powerful build and muscular development, mentally, the divers have to be equipped with

brains keen and full of initiative. For even in times of peace their work is most dangerous. Immediately before they are called to work or exercises under the water, the Surgeon has to examine them carefully, and report upon their physical fitness to the Captain. And, if a time comes when a Diver is unwilling to go down into the sea, he may be deprived of his Diver rating and retaining pay for that quarter.

On this may hang a tale or two.

But at any rate the Underwater Man is given every convenient chance of practising his wayward tasks deep under, and of increasing his efficiency. When actually at work he, if not paid otherwise, may draw from four shillings to fifteen for an hour, according to his rating, but with lesser emolument after the first hour, and graded to the depth of water and duration of time he is at his task.

To him beneath the boat with the red flag to re-lay the mine is but infant's play. Not so long ago did not he and his party go overboard to the rescue of their mighty vessel, and patch a ragged fissure away forward underwater, caused by a mine. As the 16,000-ton mass

Under the Red Flag

of steel rolled and dipped above them, and the waters sucked and clawed against them, they cold-riveted the sheeting, re-covering the irregular patch. Then held they their lives in their hands, as supported by the twisting rope-ladder they plied their craft under the water, the huge vessel towering over them with her heavy broadside in the lift of the waters. And, again, only a few days before that, did not her diver crew effect temporary repair on the great rudder-head, while in a heavy sea-way, when the merest slip or miscalculation would have brought upon them death.

The Diver's work while in anchorage or base, when a survey may be made of hull plates, stern frame, and so on, is arduous, but to him of an easy nature. What he deems indeed worthy of his craft and endurance is to be sent overboard in a rising gale, dragging the thick hemp collision-mat, to place it featly over the vessel's wound, arid so, to the cluck and plunge and swish of her pumps enable her to stagger homeward and into safety.

Now in the small craft flying the red flag the Officer eyes his wristlet watch, and, bethinking himself of breakfast, pulls a wry mouth. Work

in the Royal Navy begins early, peace time and war.

The Seaman holding life-line and air-pipe has every few minutes been giving a slight jerk on the life-line, to be answered forthwith by a jerk from the Diver that all is right. Once or twice he has received two jerks, and at his hail to the pump for "More air" the hands there hasten their pace.

But now, even as the Officer takes his eyes from his watch three jerks are given on the life-line, and are answered immediately by three from the watchful Attendant. "Comin' hup, sir," he reports, and the Officer nods in reply, turning to speak to the Warrant Officer in charge. Then slowly the line and white rubber air-pipe gradually are taken in and coiled down in the bottom of the boat.

After a few minutes of waiting the water around the two lines darkens mysteriously, and air-bubbles boil about them unceasingly. A large globular helmet rises up out of the deep with a gurgle and a splashing heave, and white, bloodless, and swollen hands grip the ladder. On the rungs of it enormous boots, eighteen inches long, topped with strong

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leather, and weighted with lead, are now resting. After an upward step or two, the Diver's shoulders and trunk appear, clad in stout india-rubber, and burdened on his back and front with great weights of flat lead that are kept securely in place by means of lashings.

Behind the round thick glass openings in the helmet appear the features of the Diver. And quick hands almost instantly unscrew his face-plate, and the air-pump only then ceases its work.

"No, sir," the Underwater Man replies to the Officer, "easy work, this time. She brought up with the tide against another mine hard by her."

The Diver slowly, cautiously, lumbers over the stern into the boat: the burden of his trappings, which were light as bubbles in the water, now weighs upon him exceedingly. Carefully yet heavily he sits down in the sternsheets, and the others begin to undress him. Soon the human man of him appears.

The use of the floating dock in every important naval base has lessened the work of the Naval Diver. But still he remains of immense importance. Again and again in the

course of a Squadron's cruise, some unit of it has had to call on her diving men— say, to clear the screws of wreckage or other waterlogged timber lodged on their guards, or to clear the mouth of some outlet or inlet pipe, or other and more onerous operation.

Many are the great deeds done by them.

One of their historic feats was concerned with the *Camperdown* of dread catastrophe. On a certain occasion one of her anchors required to be cleared, and the Diver sent down became so entangled that he was unable to budge. That night, too, the wind got up and the sea arose, and those on the life-line felt but a dead weight at the end of it, and thought the man was dead ; but yet pumping was continued, for none knew. In the morning early another of the diving crew went down. He found the doomed man wound around by his own life-line, like as by a watery boa-constrictor, and it was caught in the great stock of the anchor, some underwater eddy having twirled both Diver and life-line round and round.

The Diver was cut clear, on his air valves having been shut, and sadly was he brought

Under the Red Flag

to the surface. His face-plate was unscrewed reverently, for none thought him alive.

"Morning, mates, here be I again," quoth he inconsequently, 'tis blooming cold down there!" And having drunk some steaming cocoa, the Diver got him to his business—went down, and finished the work. Which is the way of His Majesty's Navy.

Come life, come death—either is as nothing, for thoroughness must be achieved.

Fodder of the Guns

Fodder of the Guns

GREY clouds driving in low from the North Sea with wisps of white cirrus scudding under them, grey waters, and a great grey ship riding at her buoys moored in a solitary reach of the naval base.

In the ruled column of her log-book the state of the weather is given as O.Q., that is, overcast and squally, and the smoke from the chimneys of the comfortable-looking houses on the near side of the broad estuary twirls and streams against the leaden sky. But here the great elbow of the coastline thwarts the strength of the flood-tide and the tumbling little white-capped seas. Only occasionally is there a soft swing perceptible on the busy decks of the vessel.

Yet the barges secured along her massive steel sides tug and strain too often, and the sight of their fretting causes the Gunner Officer a touch of anxiety. For the vessel is taking in the fodder of her insatiable cannon. Hurriedly but methodically she is replenishing her

magazines against the recrudescence of 'certain liveliness' that has lowered her stores of ammunition.

As the grey of early dawn was clearing for a little, close upon sunrise, and when most folks on shore were still snug and easy a-bed, she had come in, and up to the buoys, and moored. Even as the Bluejackets had finished their cocoa, a few minutes before 5.35, the stumpy, broad-bellied craft wearing a scarlet flag, crown-emblazoned, had crawled alongside, burdened with cargoes of cordite, guncotton, shells, and other dreadfully potential munitions. Since their tarpaulins had been removed the winches had been busy at work.

Squads of Bluejackets now man the barges, each of which has her own designated station alongside. The great projectiles for the turret guns are whipped up one at a time. But the others go up in bunches of twos and threes, with astonishing rapidity, and are landed safely on deck. Smartly the men there despatch them below, and those in the magazines, setting the missiles in their bays and racks, and elsewhere, have to be active, or the supplies become choked in transit.

Fodder of the Guns

The crew handle all, the dangerous and the non-dangerous alike, with equal unconcern. Yet great and intimate is the caution observed, and all fires save those in the stokehold, the galleys, the sickbay, officers' cabins, and mess places, have been extinguished, and smoking is anathema while the work goes on ; though it may be otherwise at meal-times, yet not in the neighbourhood of the ammunition.

Here, the men are trucking to a hatch, giving to a shell-room deep below, loads of common shell—black with distinctive red and white stripe or band by the pointed end—and the armour-piercer, which means that this explosive smashes its way through twelve-inch Krupp steel, to burst within and spread devastation to that ship. These shells are ready for instant use, yet the thud of many tons can alone explode them.

There, other men to starboard are busy with the wooden cases, in which the warheads of the torpedoes are ensconced charged with ready explosive, and the red steel casings containing most dangerous and sensitive detonators. Further along the deck, cordite charges are being rapidly winched in, and as their elongated

drab-coloured metal cases—which are covered with stencillings to indicate their place of manufacture, their date of making and issue, and size and weight—come up from the munitions barge they are piled in heaps. Energetically the barefooted men heap their barrows or trolleys, then trundle off to the hatches.

Another gang in another section of the dumping-ground handle the shells and cartridges for the lighter and the anti-aircraft guns, and the ammunition, it may be, for the small arms. Again, in another place the long, yellow lyddite shells are being stacked on deck as fast as they come from the slings. But the trolleys keep pace with the winching.

Shipping magazine and shell-room stores is as arduous work as coaling, and not till late in the afternoon are the barges emptied.

Even as the gear is being stowed away again, and the deck tidied on board the huge vessel, a hoist spins up the signal halliards, and, afar off, lynx-eyed signalmen read it as asking permission to proceed in execution of previous orders. Instant in her readiness, and again terrible in her renewed might of destruction and death, the huge ship strains a little on her

Fodder of the Guns

moorings as the grip of the ebb takes her—strains as she were responding to the call of duty where the murk and the blustering wind foretell a night of storm.

Yet, below, the work of the Gunner continues, as he is responsible under the supervision of the Gunnery Officer for not only the fitting and working of the guns, sights, and mountings but also for the magazines and all therein.

Upon him rests the stowage of all the ammunition, and his the responsibility that all is secured safely in place. He is the man upon whom the grave onus rests for gun fodder when the vessel is in action.

Yet to the man in the street he is something of a misnomer, for to the M.I.T.S. the rank of Gunner implies, erroneously enough, the man behind the gun. The gunlayer P.O., A.B. or L.S., it is who is the crucial brain of the gun. In the high tension of battle he and his gun crew may unconsciously be fortified by a visual and physical relief. But, it is otherwise with those working in the magazines and shell-rooms below.

Shut off from fresh air and all daylight,

Gadgets

even from sight of disaster till it engulfs them in instant terrible cataclysm, the Gunner and his men have courage of the highest and most insistent order.

Stokers, though few in number, may escape from the devastated boiler-room; and engineers from their wrecked compartment. But, where lies the most guarded places in the ship—when the projectile smashes home on underwater parts of the hull exposed in the heavy seaway, or the torpedo thuds there—aye, or the worst of all, even that which reports say sank the *Queen Mary* and others, occurs—then death comes to one and all in the ten-thousandth part of a second. For down there, where Marines keep sentry, is the store of 800 projectiles for the great guns away overhead, together with thousands for the other pieces, and cordite and cartridges innumerable.

When the vessel goes into action the men in the magazines know that theirs may be either the whirlwind of death, or the sweet light of the sun again. To them, deep down beneath turret or barbette, it is all or nothing.

To reach their posts, it is necessary to go

Fodder of the Guns

from the upper deck, as all watertight doors are shut fast, then, overhead, the heavy armoured door in the massive steel deck is shut down. Hardly a sound can they hear as the ship steams onward. Already the mighty projectiles, each of which six men can hardly carry—and the cordite charges in bags of cream-coloured silk, with red ends indicative of the igniters—have been propelled by hydraulic power up the thickly armoured shaft leading to the working-chamber, and, it may be, to the breech of the guns in the barbette or turret. Swiftly, and by means of most cunningly devised gear, they are gently transferred to the loading tray, and passed thence into the monster cannon by means of the hydraulic rammer.

Suddenly, in the magazine, everything including the stout deck on which the men are standing shakes most violently to the dull overwhelming crash, as the starboard gun gouts forth overhead. Another voluminous report rends the air, on the port gun following almost simultaneously. The concussions drive down the armoured casing of the hoist; and through the magazine tears a flurry of wind reeking with acrid cordite fumes. Then ensue

Gadgets

a continual crashing and quivering, continual deafening clamour and clatter overpowering the sucking hiss of the hydraulic hoist, and deadening the voices of those shouting orders from the working-chamber of the pair of thundering guns.

Like swiftly-moving automatons the Gunner and his men carry on, the cordite charges going up from one place, and the missiles from another. The shells are seldom man-handled, even in the case of the smaller calibres. Projectile after projectile is quickly but softly rolled out of their bay into the cradles running on rails, that convey them to the foot of the hoist. Into it each missile is gently tipped from cradle to cage, and thence up the trunk giving overhead.

There may come an abrupt, dull rumbling, followed by a rocking of the huge hull to the explosion. But they in the magazines cannot tell whether their vessel has been damaged, or if it all was a salvo of her ordnance fired together. When, however, they feel that she is seeking to twist about like a dumb thing gone mad, then no one mistakes the sinister and significant meanings of her movements,

Fodder of the Guns

gyrations to evade torpedo or, maybe, aerial attack.

Of how the fight goes they know not, save from any such fragmentary reports as may be shouted down the telephone or voice-tube. Except for these casual scraps of information the crew working in the munition rooms are just as much aware of defeat or victory, coming annihilation or survival, as the Hottentots that very same hour, thousands of miles away.

Dashing the wet out of their eyes, and gulping down mouthfuls of oatmeal water to quench thirst, the Gunner and his men work on, their half-naked bodies glistening in the light of the electrics with trickling perspiration. For as much on them as on the gun crews overhead depends the rapidity of gun fire: and a 13'5-inch cannon can fire two 1,250-pounder projectiles a minute. But, alas, there may come a moment when a well-aimed, nay, a chance shell blows off the top of the gun-chamber overhead, and then a hurricane blast of fire flashes down through the working-chamber into the armoured trunk leading from below. There is a terrific detonation—a vast upheaval of water, steam, and wreckage. The

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ship goes down, burst asunder by the blowing up of the magazine.

And this danger the most cunning and adroitly wrought contraptions ever fitted within warship cannot cast aside.

There are, however, certain notable instances in which the courage of man facing this dread extremity prevailed to the good fortunes of the ship. One of them finds its parallel in that which nigh ended the U.S.A. battleship *Missouri*, while she was engaged in target practice off Pensacola.

Three rounds had been fired from her starboard after-turret 12-inch gun, and the bursting charge for the fourth round was being rammed into the chamber when it ignited, consequent on some burning fragments being left in the gun after the previous discharge. It exploded with terrific force, firing two more bags of powder on the deck of the turret, and the flame driving down the ammunition trunk ignited 1,600 pounds of powder in the ammunition-room, wrecking everything. Yet, so instant and steady may men be, a Chief Gunner's Mate and a Seaman saved the ship.

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Both had snatched four bags of powder lying in their cage outside the door of the magazine, and dragged them within. One then closed the door from the inside, while his shipmate, the Seaman, fastened it outside, thus hindering the fire from reaching the interior of the magazine.

The Seaman then, though terribly burned, managed to reach the deck, and make his report ere he died. Already 'Fire Quarters' had been sounded, and streams of water were playing on the flames in the ammunition-room, yet so fierce the heat that the brass-work outside the magazine ran like lead.

Within, where were half the store of heavy explosives carried by the *Missouri*, flooding valves having been opened to prevent explosion, the C.G.'s Mate in time was found standing mouth-deep, and but barely breathing.

As a Flagship Talks

As a Flagship Talks

THE sun is not yet risen, but in the chilly grey light of early morning it can be marked that there are signs of activity among the vessels of the Squadron, which put into port yesterday to fill bunkers and ship stores. It is about to sail again, rejoining the Grand Fleet somewhere in the North Sea. There the supreme Commander-in-Chief keeps the Home Isles safe from invasion, and holds the so-called Imperial High Seas Fleet within the confines of its most amply mined home-waters. For It may seek no deliberate challenge for supremacy upon the sea.

On board a vessel of the Squadron, lying up to windward, there flies a white flag with the red St. George's Cross thereon, together with one red ball in the upper canton of the flag next the staff. Red upon white, and framed against the livid clouds of morning, it tells of the Vice-Admiral in command.

Just behind it is the Flagship's main, which

soon will be wreathed in signal bunting. For, notwithstanding the dirty weather and the greatening gale, which tosses the auxiliaries like mere cockleshells, the Squadron puts to sea at its appointed time. Already steam is on the capstan engine, and unmooring will soon begin, and then the great warships move out like splendidly moving parts of a splendidly moving and titanic machine, invincible against the gale and the sweeping rain.

On the upper bridge, which may be only ten feet or so in breadth, and runs across the entire width of the ship supported by strong steel pillars, higher than all other places on board, and from fifty to sixty feet above the green waters, there is a small group of Officers.

To starboard stands the Captain, putting on the waterproof which his steward has just brought up. Hard by and talking to him is the Commander, tall and broad-shouldered, even as his Officer is short and spare of body but in face as keen as a hawk. As the Commander talks his quick black eyes rove everywhere: now at the huge

As a Flagship Talks

forecastle just below, now on the spar-deck where the Bluejackets will soon be falling in, now to seaward, but aye coming back to the Flagship. And out on the extreme and windy edge of the upper bridge a small Signal-Midshipman, with cap tightly drawn down upon his brows, and telescope laid steadfast, also keeps eye on the Flagship lying almost two miles away.

On the lower bridge below there is much activity.

The Officer of the Watch is exchanging conversation with the First Lieutenant as the latter delays a second or two before walking to the bows. On the small wooden grating at the wheel stands the helmsman, an Ordinary Seaman, now eyeing the great compass three feet away from him, and now the spectacle to windward. Near him is the Chief Quartermaster, close to the bell-mouth of one of the large voice-pipes leading from the upper bridge, for he is responsible for the steering. On either side are the Bluejackets at the telegraphs that transmit orders to the Engine-room deep below. Signalmen are busy. Some are rolling back the canvas covers in front of the flag lockers,

and some casting loose the innumerable halliards leading down from the towering mast and its yardarms overhead. The Chief Yeoman, he with the peaked cap and brass-buttoned coat that bears cross signal flags on the collar, is gazing intently through his glass across the ordered lines to where, up-wind, streams the Cross of St. George.

The Signal-Midshipman, the Chief Yeoman, and all the Signalmen are keenly on the alert. For the smartness of the Ship—and in the Royal Navy smartness connotes high efficiency—is demonstrated to the naval world at hand by the smartness of her Signal Bridge. And, with It, work must be done on the instant, though a mistake may plunge a thousand families in mourning.

Of a sudden, now, above the Flagship's bridge, three small dots break into colour. The signal flags stand on the wind stiff as boards, the ends only of which are visible. But already lynx eyes have read the bunting.

The Signal-Midshipman leaps across the upper bridge. "Shorten in to two shackles, sir," he says, and the Commanding Officer nods. Even as he does, the Midshipman out

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of the corner of his eye notes the answering pennant already spinning up, to fly out at the mast-head.

He, and the Chief Yeoman, who has done likewise, and all their men, know too well there is an eagle vision on board the Flagship—that of the Signal-Boatswain—and he is the very eye of the Vice-Admiral. What he does not record the great Flag Officer does not see. But, when the Signal-Boatswain does take note, then the entire Squadron must see, for the eyes of all Signal Officers and men and many many others' are glued to his distant bridge.

Already on board the Battleship her First Lieutenant has made smartly for the bows. Almost the next instant, however, the Flagship's hoist shoots down to her signal bridge, and the Signal-Midshipman cries, "Down, sir," and then the work of getting under weigh begins.

The Battleship's answering pennant breaks immediately in reply. "Shorten in," says the Captain. "Shorten in to two shackles," peals the Commander stepping to the bridge-rail, and speaking to the forecastle below.

The First Lieutenant gives a motion of his hand to the Cable-Midshipman, standing on the top rung of the forecastle ladder, and to the Midshipman's motion a Chief Stoker starts the capstan engine in its flat below, his mouth at the voice-tube ready to send down orders to the Engine-room Artificer who stands there with ear to the voice-tube, and hand on the small brass wheel of the steam valve. Stokers attend very assiduously to the bearings of the engine, for, of all engines, this of the capstan is the most capricious, being so often strained to the utmost of its speed and strength.

Then as the links of the cable come through the gaping hawse-hole, screeching and groaning with the weight of their burden, and crawl along the deck to go down to the cable locker, the hose, fed by the fire-engine below, plays upon them, dashing *off* the esturial mud, and the men with brooms make them clean and shiny again. Each length of the shackles is numbered upward from the anchor, and a Signalmen leaning over the great bow is watching each length as it comes in-board. As each appears he holds up a flag showing its number. When, then, the 'two flag' goes

As a Flagship Talks

above his head, the First Lieutenant nods, the Cable-Midshipman waves his hand, and the capstan engine stops. The cable is reported to have been shortened in. Forthwith the bright pennant breaks at the high yardarm in intimation to the Flagship. And, a few seconds later, every one of the Squadron likewise shows the same bright pennant at her fore yardarm.

Almost the next moment, so it seems, there appears another sudden hoist of two flags at the Flagship's main.

The Signal-Midshipman reports it, and the Commander's voice rings out. The Boatswain pipes, hoarse voices of his mates repeat the order, and within eighty moments every Officer and man is at his post, and the Battleship's answering pennant whips the howling wind.

The Flagship's hoist of flags comes down.

"Weigh, sir," says the Signal-Midshipman, who is dripping wet, for the rain drives heavily down the gale.

"Carry on," orders the Captain, wiping the drip off his cap-rim.

"Up anchor," says the Commander, leaning out over the forecastle.

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And again, two decks beneath, the capstan engine starts grinding, so the great vessel moves forward on her cable, even as all her consorts are now doing.

The green anchor-buoy, that aye floats just above the great 'killick' swirls in under the bows. "Up and down, sir," cries the First Lieutenant. "Anchor away," he adds, as it is reft from the bottom like a paperweight, and appears above the water. Already a seaman has slipped over the bow, and as the anchor arrives at the cat-davit he makes fast the chains round its muddy bulk, then leaps in-board again. The cat-davit turns, the staying tackle steadies the great anchor. "Let go," is the order, and the anchor drops on to its bed, and the irresistible hose speedily washes the mud off the flukes and stock.

In a minute and less all the tackle is stowed away again, the mud and the water are cleared off the white deck, the Bluejackets disappear, the cable hatch is shut down, the Cable-Midshipman and the First Lieutenant vanish ; the latter to report to the Captain that the anchor is secured. "Break," orders the C.O., and again another pennant at the long yardarm

As a Flagship Talks

overhead tells the Flagship her order has been carried out. And in a minute the same pennant is flying also at the fore lower yardarm of every unit in that Squadron.

Then bunting suddenly drapes the Flagship's main, and again, and again ; and the answering pennants of the Squadron rise and fall on the wind like automatons.

"To repeat the signal, sir," reports the Signal-Midshipman, taking the glass from his eye even as he reads the last of the next far-away hoist, and then, going to the bridge-rail, he watches the Signal Staff below spurred on by the cold hawk-like gaze of the Chief Yeoman clip together the flags of the repeat, swift-handed and decisive, to whip them aloft. "Signal's down, sir," he cries, as the hoist bulging in the high wind flutters down. The Flagship moves slowly out of her in-shore station in the rear, and gathering speed, passes on toward the open sea to take her lineal right, first in the van, and, as each ship is passed, she in turn moves and swings into station behind her leader, for the column is being inverted.

Snatches of bugle calls echo along the busy

decks, and the guard of marines double to the quarter-deck, halt, fix bayonets, and stand at attention for the "Present." The bugle sounds "Still," then the "Admiral's salute" as the huge battleship passes: her formation, speed and helm signals flying, and her semaphores talking with three consorts at once. As she rushes past every hand is raised in salute, Bridge salutes Bridge, and the Flag Officer, supreme, very gravely salutes each Ship in turn.

So in the gale of wind and rain, and with a swirl of flying steam, the smoke from his furnace fires blowing down, flattening over the cresting seas, the Commander-in-Chief of the Squadron takes his vessels out to sea, to high fortune or awful death, in the exact and most certain order, like beads strung on a piece of twine.

They are of the being of Britain's terrible might.

And as the last ship but one surges past, the Captain of our Battleship gets him to his work, as he turns from his salute on his streaming wet bridge.

"Slow ahead both," he orders, speaking into the lower bridge voice-tube.

As a Flagship Talks

Then each Midshipman or Bluejacket, as the case may be, at the Engine-room telegraphs, one on each side of the wheel, drives his lever over, repeating the order ; as he notes, the tell-tale his side of the funnel casings begins its grinding as its main engines get under weigh.

Then are further orders ; the wheel is turned, and the huge vessel answers; even as do her engines again. And so each vessel falls into her station in her appointed line.

Against a streaming and bellowing sky, against a heavy sea, and the heightening gale, aye, through most terrible tempest and sudden death, the Squadron sets sail for the Grand Fleet.

And It. It keeps the heart of the British Empire inviolate.

When ' Church is Rigged'

When ' Church is Rigged'

IT has been stated that the custom of family worship every morning is fast dying out in the British Isles. If this is so, then the people of religious sympathies ought to take the Royal Navy, that gives them security for their meat and drink, homes and fortunes, as the exemplar in quickening toward daily acknowledgment and worship of the Creator. For in the Navy there is religious observance not only of the Sabbath, but on the morning of every day in the week: and this is laid down succinctly and plainly in ' The King's Regulations and Admiralty Instructions/ so that no man may read, if he be inclined, and may not understand.

On board every British warship, save torpedo boats and destroyers and other small craft, the weekday begins with prayers. It is the custom immemorial, and a good one at that, for there are other things in this world than the things of the world. So immediately after the usual morning muster of the ship's company ' Prayers ' is held.

When the Bluejackets, Marines, Artisan and Stoker ratings of the various divisions lined up along both sides of the ship, in the waist and on the forecastle, have been inspected for tidiness, cleanliness, etc., and the Commanding Officer is satisfied with the reports of the Officers of Divisions, the tolling of a bell followed by a bugle call, intimates that the hour is come for devotions.

Therewith, the Roman Catholics fall out, and the other men march to the quarter-deck, for here is not only the fit and seemly place but likewise the traditional one for 'Church.'

Here in the dim far-off centuries, as when the Battle of Sluys was won, and others, and up to the days of Queen Mary, was kept the ship's shrine or crucifix under the break of the castellated poop. And, to-day, in the custom of always saluting the quarter-deck the devotional obeisance remains. For the Royal Navy is warped throughout with traditions. Though no mere traditional Service, as enemies know.

On the quarter-deck, then, the men halt, and, taking off their caps to the Commander's or First Lieutenant's order, stand easy, and give

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ear while, as directed, 'short prayers' are read by the Chaplain or, if the vessel does not carry a 'Padre' by the Commanding Officer. The prayers are to be read by landsmen, also, in the Book of Common Prayer of the Church of England, and ending with one of the most beautiful of all Collects. It all takes but a few minutes, and, then, their religious duties accomplished, the Bluejackets' routine drills or exercises begin.

But, on Sunday, 'Church is rigged.' Though none but absolutely necessary work is done on the Seventh Day on board our men-of-war.

The men turn out at 5.30 in the morning, one hour after the cooks, and sup their thick delicious cocoa, and wash. Then at 6 o'clock they fall-to, and scrub the upper and mess decks as usual. At 7.20 comes the pipe to clean the guns, and at 8 a.m. the welcome summons to breakfast. When 9 o'clock or two bells is struck bugles shrill, and the men form in divisions for inspection as on the weekdays. But, on this the Sabbath, they are clad in their 'number one rig,' the best clothes they have, and have attended to their personal

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appearance with even more than the usual scrupulous care.

While the Officers of Divisions scrutinise their men, the C.O. as minutely examines all things below as he goes the rounds, accompanied by various Officers, messengers and buglers. At length he steps up through the after-hatchway on to the after-deck, and the Quarter-deck Division simultaneously uncap to their Lieutenant's order, and he salutes the Captain. Acknowledging the salute in turn, the C.O. with eagle eye inspects that Division, each man from top to toe, and through to the back of his head. In time, when the Head of the Ship is satisfied that his crew have so far honoured the Sabbath Day with best clothes, and extra 'spit an' polish' on themselves, the * Disperse' is sounded off, and the Divisions step forward, turn outward, and scatter.

But * Church' has yet to be 'rigged.'

So it comes that this call is sounded off at 10.40, when for some minutes all is orderly bustle on the quarter-deck. Benches are quickly improvised out of broad planks, laid on capstan bars that rest on buckets. A lectern makes its appearance, draped with a white flag,

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and a small harmonium, at which the Naval Schoolmaster or other presides, reinforced by a musical instrument—a violin, flute, or possibly the vessel's band. Chairs for the Officers are placed aft, fronting the benches, the Captain's being somewhat advanced. And then punctually at 11 a.m. the bell begins tolling, and at this a flag is hoisted at the peak, indicating Divine worship is about to begin.

Quickly the Bluejackets and others stream aft, and occupy the benches. On the last man taking his seat the Master-at-Arms reports to the Executive Officer that all are present, and the Captain steps to his chair, the Officers already in their places behind him.

With this the Chaplain appears from the after-hatchway, his surplice fluttering in the wind, and * Church ' has commenced. After a solemn pause of a few seconds he gives out the hymn. The opening bars of it are played over by the harmoniumist and other musicians, the crew rise to their feet, and all sing heartily.

After the opening hymn, which is sure to be a well-known and popular one, the Captain crosses to the lectern, and reads the Lesson for the day. Another hymn follows, and then

ensues the sermon. Neither long-winded nor vague is the Priest's discourse; for he knows intimately not only the nature of his congregation, but has usually to meet sharp and destructive criticism from messmates if he ever shows a tendency to length of discourse, or 'high-falutin,' or, indeed, to give of any other than the full and simple meats of the Gospels, which do nourish the least intelligent and most intelligent of men. And in a modern battleship are, necessarily, some of the keenest-brained men of the keen-brained twentieth century.

Father and brother of all in his spiritual charge, the Naval Chaplain speaks in his sermon of things spoken in a service for men only. But, most—for the British Bluejacket is of the directness of the Sea—his dread Mistress—the 'Padre' speaks to the hearts of his congregation, and that temperately and quietly. And they that go down in the ships—though many of them may be indifferent, as we may think, to religion in its outward forms—best realise Him Who governs all things by His Wisdom even as He creates them by His Power.

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A short hymn may follow, and then the benediction. There comes a pause of a second or two, Officers and men remain standing, and then all join in the National Anthem.

As their voices die away the Captain raises his hand, or nods, to the Executive Officer, and the order is given to 'pipe down.' In the twinkling of an eye the men are streaming away forward, and a working party smartly unrigs 'Church,' while 'boys' return the books.

* Church ' on the Lord's Day is over.

Sometimes, however, it is held, as occasion demands, on the mess-deck below. Here 'Church' may be rigged, and the service conducted with equal impressiveness.

Though, as time goes on, the Chaplain has yet to hear not only all such young Officers as the Captain puts under his care, but all the boys in the ship read, and to explain to them the Scriptures and the Church of England catechism. 'Church' and Sunday observance, of course, are subject to the C.I.C. directions, ship's duties and weather permitting. There is such an untoward order from the Flag as that 'Next Saturday shall be Sunday,' when

the enemy and other circumstances have to be dealt with. Again, on a busy Sunday, parade service is not held, 'Stand-up Prayers' being substituted, a term that explains itself.

Toleration is the keynote of religion in the Royal Navy, though all on board who are riot on duty have to attend prayers and service, unless permission of absence on the grounds of religious scruples has been formally requested and granted. Full liberty to absent themselves is given to any who have such scruples, and every opportunity is afforded them of attending their own services, and for this every facility is granted.

The allowance authorised by the Admiralty include payments for spiritual attendance to ministers of the following religions :—* Roman Catholic, Presbyterian, Protestant other than the Church of England,' and from the very first month in the war every effort has been made by the Admiralty so that the personnel is administered to by Chaplains of their respective persuasions, as and when occasion permits.

So carefully is liberty of conscience provided for, that, though the * Padre' is enjoined to

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give men and boys who may voluntarily attend religious instructions at such times on Sunday afternoon as the Captain may set apart, he also is strictly forbidden to enforce the teachings of his Church on any, who being of a different religious persuasion, might find it objectionable to him.

And so in things religious as in things world-politic the British Navy maintains the dominant note of freedom.

The Naval Chaplain holds no naval rank. Yet in a certain sense he is one of the most confidentially trusted Officers, for, especially in a 'happy ship,' he is father and brother to the Officers and men. One hour he is sitting in the cells, deep in the bowels of the vessel, tactfully cheering up a defaulter guilty of serious misdemeanour, helping him, too, to pick the necessary quantum of oakum, and, the next, he may be with the Captain advising him on matters personal, or other, that come within his duties.

The 'Sky Pilot,' or 'Holy Joe,' 'Devil Dodger,' too, among the Lower-deck, is an essential feature in the carefully shielded life of the Navy. Its human welfare, mental,

moral, physical, and religious, is nurtured as laid down so explicitly in one of the wisest and most comprehensive books to be read in the English tongue—'The King's Regulations and Admiralty Instructions': and, all to the end that It can concentrate Itself on the one supreme object, for which the maintenance of It is upheld. Into this atmosphere of detachment, then, the Naval Chaplain brings a whiff of the non-official, red-tape world as well as of the realisation of religion.

When he carries out his duties in spirit and the letter he has no small task to perform.

Not only may he be Naval Instructor to the young Officers of the Gun-room in their 'School,' six days a week, but, moreover, he is responsible for the work of the Naval School-master in the Ship's 'School,' where the boys of the Lower-deck are also carefully educated at certain hours of the day; and he has to report quarterly on their progress to his Commanding Officer. He visits, too, the cells and the sickbay, and assists the Medical Officer during an engagement, and may have other duties to fulfil. As the Naval Instructor, the genial Priest in his mortarboard often spends

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much time in the dog-watches—between 4 and 8 p.m.—in flannels on the forecastle, instructing a section of his flock, boxing-gloves on his hands, in the useful art of pugilism. And, for the most, the 'Padre' is heart and soul of the pastimes on board.

The position of Naval Chaplain, when held by one who knows, and sees, how to turn it to good account, is one of great influence and importance among the Ship's company.

When he is gifted with tact, geniality, kindness, common sense, manliness, and keen interest in his work, the * Bishop,' as he is sometimes called, accomplishes immeasurable good. Far more than the Military Chaplain is he in intimate contact from morn to night, and night to morn, with the Officers and men of his charge: leading the same life, and in the same atmosphere.

It is noteworthy that of all men in the Navy the Chaplain does not wear a uniform, though he must adhere to the use of clerical dress. In times of peace, when at mess, he dons, as according to the articles inscribed for his guidance in the Regulations and Instructions, a be-frogged 'court coat,' black silk cassock, black

cloth knee-breeches, and patent-leather shoes with plated or silver buckles. And thus attired the 'Padre' strikes a grave and antiquarian note as he sits at the Ward-room dinner-table amid the dark blue and gold lace and white linen of his naval messmates' uniforms, brightened here and there along the table by the vivid red of the mess-jackets of the Marine Officers.

All in all the 'Sky-Pilot' occupies a very necessary and important niche in the hierarchy of the Royal Navy. Though, at present, it has to be stated, he on occasion may stir up wrath and maledictions by reason of his ruthless excisions, when acting Censor on the contents of the Ship's mail-bag.

' The Evilest Thing in the Navy'

' The Evilest Thing in the Navy'

" **J**UST a dog's life, in the evilest thing in the Navy!"

" Altogether, it's just the thing—and ripping!"

In these two statements there is something more than mere disparity of opinion. They are influenced by the difference in the individual Officers' temperaments as well as their years; and years do not add exuberance, as they pass, neither to the frame nor the temperament of even the most zealous of Officers.

Well it is that the Destroyer is the all-in-all of the Sub-lieutenant and Midshipmen. She is the craft for ardent young heads that take all risks. The crews of His Britannic Majesty's Destroyers need, too, have constitutions of steel, and no such things as nerves save only the nerve to do, to accomplish, at all costs and terrible hazards.

Life in a sinister war-shell—whose hull may be but little thicker than the eight pages of your morning paper put together—that covers

a mile in one minute thirty seconds, that turns at right angles with a terrific lurch to a touch of your finger on her wheel, that rolls till the funnels of her dip in the water—is no joyous existence, at any time. But, that is life on board a Destroyer; though it has varying degrees of discomfort according to her class.

Vessels of the latest classes, of 1,350 tons and more, do afford their crews something of a palatial existence in comparison with those of earlier and smaller build : they that are of the 'evilest thing in the Navy.' In them, sleep is only possible to the hardiest and most seasoned; life is a nightmare, as concerns personal comfort; and eating save in a dead calm, the sea asleep like a mill pond in June, is a matter of dexterous jugglery with one's mug and plate. For no vessel has such a diabolical cunning for diabolical motion as a Torpedo-Boat Destroyer.

Yet in the Navy of Great Britain service in the destroyer flotillas is keenly sought, and this by not only the younger personnel. Popular it is, because of the zest of 'doing,' and because, too, of conditions which have their very opposite in the torpedo boats of

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Germany, and in that Navy 'torpedo boat' comprehends all classes of such craft up to 1,500 tons.

With the British Bluejacket the rigorous bands of discipline are loose in the destroyer flotillas so long as work is done efficiently, and the First Lieutenant or other Officer who is responsible for such executive duties keeps no sleeping eye thereon. And, too, the men of the British Destroyer are allowed to enjoy themselves, if and when enjoyment be possible, at hours when in other British warships routine keeps them engaged. With Michael-am-Meer in his torpedo boat it is vastly different, unless conditions are now altered. A cat-o'-ninetail's discipline is wielded, and there is no cessation of drill and general routine. For, without the trammels of discipline, and the grooves of constant practice, the Teuton falls to pieces. He lacks in the essential instinct of seamanship and for the Sea.

Life on board the British Destroyer has a spice of adventure and the zest of a freer life which the great ships cannot afford. It is, too, at times infinitely harassing and more perilous for long spells together.

" Been summat like real sarvice, an' no standin' by for them Kiel bargees," remarked a Bluejacket contentedly, on his craft coming into port to stand-off for a few days.

Then it is during this off-spell that the crew, Officers and men, come back to the luxuries of well-cooked and decently served meals, and plenty washing of body and clothes, and, above all, sweet sound sleep. When the vessel is at sea the food as often as not is atrocious, for in anything like a tumble of sea it is as nigh impossible to cook as it is to eat a meal in any comfort, except on board the latest and larger craft. In the galley the 'cook,' as likely as not, may find his pots and pans carry away as the vessel jerkily heaves and rolls. Sometimes the fire jumps clean out of its place on to the iron deck, or the contents of the copper land at the cook's feet. And on mess-deck and in Ward-room the violent motions bring about a confused medley of arms and legs and a deluge of plates and eatables.

Though the spendid craft of later times give room and modicum of comfort to their crews, many are there on service in the North

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Sea, and elsewhere, in which the space below deck is cramped and confined—broiling hot in summer, and freezing cold in winter. For their plating is of the thinnest, and conducts heat or cold most perfectly, notwithstanding a special coating on the deck. Then those who seek sleep lay them down, clad in their thick 'lammy suits'; and yet do they feel chilly.

Class succeeding class, the Destroyer has gradually grown larger till now her crew may number up to one hundred souls all told—her Officers, a Lieutenant-Commander, Lieutenant, Sub-Lieutenant, Gunner, and Engineer-Lieutenant or Lieutenant (E)—maybe, a Mate (E)—together with the Surgeon-Probationer. She can keep at sea now for a long spell, and through the roughest weather, sheeted, it may be, always in spray, and with her deck feet deep in green sea ; but still invincible.

So rigorous are the conditions of life on board the Destroyer that the men receive the sum of sixpence a day additional pay to compensate for their hardships. And, termed 'hard-lying money,' it is. Work on deck is hard. But harder is it below, in engine-room

and stokehold, when the vessel is steaming through rough weather.

She tosses and lurches with a sickening sidling motion that begets a seemingly circular-motion feeling in the pit of the stomach. A summit of frothing, falling sea passes under her, lifts up her stern, and thrusts her forward into the trough at express speed. Her screws whirl at an alarming velocity, threatening to snap the shafts from their sockets. Her men below are thrown this way and that, and in the engine-room only the guard-rails save them from terrible injury. Her reeking funnels are suddenly tilted down to the crest of a wave as the craft heels steep to starboard; and the Engineer Officer on his narrow grating clings hard to wheel and valve, or, if creeping cautiously along where stand the cased cylinders and madly twirling machinery, grabs at the guard-rail, and strains every thw to keep his balance ; while his pale and vigilant men as instantly secure themselves.

Hatches having been battened down, the heat and the smell are almost insupportable. As the vessel rolls the water fetches her ventilating cowls, and an icy flood strikes some

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unwary one below in the nape of his neck like a blow from a sledge-hammer. The deck overhead is swept by the seas. They crash upon the tall forecastle, or, as it may be, upon the sloping turtleback bows, bubbling among the cables and slips, and eddying deep round the capstan in frothing swirls. The Destroyer's knife-like stem slices through the mounting waters instead of rising to their lift. Though there are these, with tall bows, that override the sea like a gannet or skua.

Every one is in oilskins, and, on occasion, most of the Bluejackets live in their 'lammy suits,' the weather cold and wet. Cut with a lavish hand out of a material of thick brown wool, fireproof, waterproof, and as soft and cosy as a blanket, the lammy suit you can put on over uniform or other dress, and in it you durst defy the elements. Clad in it, with sea-boots of black, well-greased leather up to the knee and soles three-quarters of an inch thick, with sou'wester reaching well down the nape of the neck and almost to the eyes in front, and, to protect the eyes, goggles of thick, transparent glass set in wire side-nettings fixed round the back of the head with strong elastic

bands, the Destroyer's-Man has a rig in which he can resist all bad weather. Only, when a slap of ice-cold water does trickle down one's neck or front, then it must swill about inside the lammy suit till your clothing does absorb it.

In war-time grime and coal-dust are prevailing features in the Destroyer's crew, and coaling is the dominant labour.

To keep even tolerably clean then, when everything is thickly and odiously besmudged with the spumings of the funnels, together with the grime of coaling, and, therewith, two or three inches of water are swilling about in the fore-castle and in the Ward-room—as the long, low-lying, clean-designed craft breasts the North Sea weather—bespeaks a continual warfare with soap and hot water—the which is impossible in the circumstances.

No one in a Torpedo-Boat Destroyer enters upon 'dobeying' until cleansed clothing is an absolute necessity. For, not only is there no convenience for drying clothes, but there is a continual rushing about of the men on deck, on duties infinite. When their clothes are clean, Fate as likely as not so brings it forth

' The Evilest Thing in the Navy'

that within a few minutes there is a spurt in ' strafing' a submarine, or in patrolling, and high speed in the Destroyer means funnels vomiting smutty smoke and small coal and clinker, which turn everything within a few minutes as black as does the filth from any coaling. Yet, and such is fortune, there are boats which go alongside their 'tanker,' pass the hoses in, and forthwith store the oil fuel. But, even with these easily-fed craft, there are advantages, contingent, and, accordingly objectionable, as those obtaining on board any ' coaled' craft.

There is in the Destroyer an absence of 'Navy' as it is known in the larger vessels. ' Divisions,' that inevitable muster and inspection on board them, and 'Evening quarters,' are omitted on board most Destroyers, for the men are busy on other duties infinite in number. Yet, however, when the weather and other conditions allow, the craft in port take part in various evolutions, such as 'General drill,' * Exercise action,' ' Out bow anchor,' 'Abandon ship,' and others, even as do their mighty consorts at their own designated times,

When, however, the T.B.D. or her flotilla is leaving on a night cruise, fifteen minutes or so after she has slipped her moorings and nosed her way outside, 'Exercise action' sends her Bluejackets to their posts, to make certain all is in exact order and instant readiness. Then all lights are extinguished, and the deadlights slipped over the scuttles, and the men disposed for night-cruising. The forward or forecastle gun is cleared away, and its charge laid on the loading tray, and the gun-crew closes up, standing by on the alert for action. The men of the other guns turn in, the after piece's crew 'catching the bird' on the floor of the Ward-room. After every two hours the gun-crews are changed in turn, till 4 a.m., when ordinary routine is resumed, and all on deck turn in, except the Bridge, and the signalman, and the look-outs, until 7 a.m., when the work begins for the day.

Yet the Officer commanding the Destroyer knows, when at sea and going upon his appointed tasks in the great war, but very little of the meanest comforts of existence. Save when he is in harbour the Ward-room is but seldom seen by him. Not for him its cushioned

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settees, comfortable armchair, and snug if occasionally perverse stove. For he sleeps, and eats, and lives, either in the confined diminutive chart-room just beneath the bridge, or, as in certain Destroyers, in a cramped bunk in the open at the end of the narrow structure that is for ever swaying and toppling, for ever smitten by the wind and deluged by the sea, as his craft slices onward.

Day and night, winter, spring, summer, and autumn, he remains here for weeks at a time, instant for the business on hand. He dare not leave, lest the Great Occasion suddenly comes red-fanged and howling upon his command. His food is brought to him from the galley, and he eats it as best he can, for many is the slip 'twixt the cup or the plate and his lips. His eyes become bloodshot through lack of sleep, and his neck and wrists grow calloused where his oilskins chafe the skin. Dirty and unshaven, he like his fellow Officers presents a nondescript figure in great sea-boots, old coat, and muffler that as likely as not is blacker than that of any sweep. For on board the Destroyers grime, and grit, and coal-dust are prevailing features during war-time.

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Even when in port the Destroyers have no rest. The innumerable small craft aye moving about at sea maintain incessant watch, and any of these makes it common to all consorts in the vicinity when she has suspicions, or descries aught out of the usual. The sea-hawks may have just come back from many days' patrolling, or escort duty, and are busily refilling bunkers. But, at the signalled message, the sweaty, grimy job is forthwith suspended, and the craft speed forth on their expedition, for on them lies the responsibility of obtaining explanation, or effecting reprisal. Frequently it thus is theirs to devote many ;weary hours to hunting for fresh-laid mines, or for the tip of a periscope, and all with but the vaguest notion of the position.

When, however, something of importance is expected, such as a raid on the lines of communications, or on the fishing fleet, or on shipping, or material work is to be effected as in a 'certain liveliness in the North Sea/ then jt is that the torpedo tubes are released from the chains staying them fore-and-aft. Then are fire-hoses trailed along the deck in readiness to put out conflagration, and all the

< *The Evilest Thing in the Navy* >

gun-crews close up. While, below, where all hours in the four-and-twenty are alike save for the vagaries of wind and sea upon the vessel, attention is doubled and redoubled upon the engines and furnaces, the dials and gauge glasses, and the auxiliary engines. For any moment might be big with emergency.

Destroyers have various and crafty formations for attack. And in the British and German Navies the triangular formation was, among others, practised before the hostilities for an offensive against ships of the line and other great vessels.

Like swiftly moving automatons the six Destroyers take up their triangular disposition, the three leaders forming the base of the triangle.

The waters around them are brilliant as liquid silver in the rays of the enemy's searchlights, and churned all frothy by her projectiles. As the leaders dash through this zone of death, two crumple up and sink to the bottom, or perforce have to turn away, and the third unsuccessfully looses off her torpedoes before disappearing in a cloud of steam. The second line of the triangular

disposition fling itself onward. But already the apex and sixth craft has swerved at right angles from her course, and vanished into the cloak of night, away from the zone of destruction and the arc of the searchlights.

Suddenly the second line veer sharp away, pursued by the heavy fire and the relentless beams. It is then the apex swings to attack, as consorts twist and turn to occupy the light and the thundering guns.

When in its flight through the night for safety behind Heligoland the German Fleet experienced perhaps what was one of its most harassing times, notwithstanding the gallantry of certain of its torpedo craft, it is quite clear that the assailing craft, on their part did not attack always in flotillas, but singly as well. For in the medley ensuing during the retreat Officers commanding British Destroyers were of necessity left to their own ever-keen initiative to combat the enemy's resourcefulness—wariness, too.

It was then in those most fearful hours that 'the evilest thing in the Navy' did that, the full details and dreadful consequences of which the dead only know.

The Midshipman

The Midshipman

THE third last time one remembers seeing him was hardly five years ago, when he was just a slip of a brown-cheeked, knickerbockered boy, and crying so bitterly over his old pony, which had died that summer morning in the green paddock behind the riding-stable.

The second last time, two years or so later, it was on the railway platform as he was leaving for his concluding term at Osborne College. Already the droop was gone from his mouth, and his dark eyes looked older, and wiser upon things. Already he carried his shoulders and head like a man. And never a smarter figure in cadet uniform.

The last time of all was a year and more ago, and on the East Cxoast.

A heavy sea was running, the squalls were sharp and charged with blinding sleet and rain that obscured the dying twilight already rendering distances deceptive.

" By Jimminy, sir, she's like to pile herself

up on the quay steps! " exclaimed the Chief Boatman-in-Charge, jerking his thumb toward the flying picket-boat of a great ship lying afar off* beyond the shallows; " she'll crumple up for'a'd like a paper-bag ! It's the race o' the tide behind her, she don't reckon with. W'y don't that young Hofficer think ?"

For with her sharp bows set dead for the quay steps the picket-boat came flaring onward, nigh certain as a train.

She swished into the calmer waters of the little port, her engines suddenly stopped, her tiny grey forecastle flashed into the shadow of the steps, and the two boatmen shot forward their boathooks, one toward the steps to bear her off, the other into a great ring set in the beam overhead. Still, with the momentum of her speed she was moving too fast, and her stem was like to crash against the granite. Just that very moment the sou'wester capping a small figure by her wheel tilted over a voice-tube. Engines forthwith went astern, then stopped. To a nicety, and, aye, sweetly as a swan, the steamboat fetched the quay steps.

As her passenger stepped ashore her young Officer in command saluted, with face a little

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upturned. There could be no mistaking him. He who but these very few years before had sobbed his boy's heart out, in the green paddock.

There came a word or two in his shrill, firm voice, and the picket-boat moved like a thing instinctive for the open, and he vanished as quickly as he had come. Standing beside the coxswain at the wheel, her Captain took her homeward straight through the smother of night and swamping seas and spray. And so he went all too soon from view, with the rain pelting, and the squall screaming, and the troubled waters buffeting his craft.

It was the last glimpse. The North Sea was to claim him.

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In this, the first epochal war of the Twentieth Century, there has been no harder nor braver work done than that which the British Midshipman has done in the execution of his duties.

So long as the renown of the Gallipoli Venture is recalled by future generations, even so long there will be remembered the gallantry of the British Midshipman in helping so ably

during the terrible landing of the troops on the shores of that Peninsula. Throughout the Turks' murderous fire, which raked the lip of shore where the soldiery were being reaped down even as they gained the land, the Midshipmen in command of the steam cutters and other craft, showed just that hereditary coolness and intrepidity which their forbears displayed so signally in many a daring cutting-out expedition in wars. Arid, yet, in many an instance these junior Officers of His Majesty's Navy were no older than the Seventh Form at many a Public School.

Theirs is the hardest school in all the world, the school of the hardest experience in all the world, where failure is not coaxed and cockered into success, but means dismissal as unfit and unworthy. It is a school, too, where a single error of judgment—nay, a moment's hesitation, a slight miscalculation, or a wrong motion of the hand to obedient, watching eyes—may bring not a sharp, curt, and heart-searing reprimand but the loss of human lives.

At an age when other schoolboys see their education more than half-way to its end the Midshipman has to begin all over again as a

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Naval Cadet of the College of Osborne. Here his messmates number between four and five hundred, and are chosen on the advice of an interviewing Committee at as early an age as thirteen. There is no examination, the object of the Committee being to discover the intelligence and suitability of the lads.

Here, then, proud in brass buttons and his peaked cap, the Naval Cadet remains for two years, taking in instruction, and so, if successful, passes for another two years—though the war has caused many a Cadet to be sent earlier to sea—to that most splendid Training College at Dartmouth, that replaces the *Britannia*. In which famous training-ship of the 'old' Navy nigh every existing executive R.N. Officer above the rank of lieutenant has received his training.

During the four years which in peace-time the Cadet spends on shore, he is under strict naval discipline, and breathes the naval atmosphere. His course of instruction is somewhat like that of the 'modern side' of a Public School. But it includes a great deal of scientific and practical engineering. Also, he is given a certain amount of theoretical and

practical navigation, steam and sailing craft being attached to the College for this end. But, in especial, the education of the Cadet is in subjects which bear directly and indirectly upon engineering.

He studies mathematics and trigonometry, heat, electricity, mechanics, theoretically, experimentally, and practically, in a singularly complete manner.

The Cadet is taught not only how to drive an engine or turbine but also how to build it—not only the knack of stoking but the actual job itself. He must, too, muster a full and accurate knowledge of English and English literature, of composition, history, naval and general, geography, a fairly comprehensive amount of astronomy, and be proficient in French and German.

There is no sounder and more practical equipment for healthy boys than that in which the British Midshipman has to qualify.

On leaving Dartmouth after the four years of shore training, in times of peace, for his life's work, and ranking according to the sea time put in, the Cadet goes to sea as a Midshipman, and is drafted to a training cruiser. But the outburst of hostilities altered con-

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ditions, and even the *First Termers' at Dartmouth found themselves soon at sea, doing their duties as Junior Officers on board the great vessels ; and many of them, not older than fifteen, looked straightway upon the dreadful face of War and Death, and many of them passed so tragically with the *Aboukir*, the *Cressy*^ and the *Hoguc*, and other sunken vessels. Speedily, too, during the hostilities the Cadet exchanged his distinguishing mark of rank, that of a worked buttonhole, for the Midshipman's white patch on the collar of his jacket.

Now at sea, then, he still continues his training, and his work includes special instructional studies in navigation, seamanship, and engineering, together with acquiring the general duties of a young Officer: such as those of mustering the watch, taking charge of a boat, and all the nigh endless minor duties for which the Midshipman is held responsible. Duly he passes out and is rated Midshipman. And now he is a fully qualified, though junior member of the Gun-room, and an Officer of due responsibility in His Majesty's Navy.

Of a truth, the most critical years of the

Midshipman's life are passed in the Gun-room and the Gun-room Flat. Here he lives in such intimacy, naked and merciless, as obtains nowhere else in all the world. Here, the traditions and customs of the Senior Service, running back to generations forgotten—for it is the oldest Sea Service in Europe—soak into him; and, moulding him according to his temperament, render him a faithful and self-abnegating servant of the Empire, or one living only to grosser and selfish ends, and using the Navy but as the tallow-chandler his shop. Here, his messmates, barbarians in manners and as often as not in speech, too, snub and chaff' him into maturity as one knowing himself to be a man in authority though a stripling in years. Here, he is likely to suffer countless indignities and personal chastisement—for the Gun-room is yet an authority unto Itself in certain things, even as in the old days—until he has proved his Midshipmanhood, and ability of self-initiative wisely and potently wielded in defence. Here, also, he is taught what government and governing mean. For the strong, unshaking grip of discipline is upon him now; discipline which

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neither spares the weak, nor fears the strong. In the Gun-room the Officer of the coming years is made—or, is marred as an individual.

Inside, behind its own door, the Gun-room Mess is private. It has been compared to a hornets' nest, when any of its traditions and privileges have been abraded. No one, nay, not even the Head of the Ship himself, dreams of coming within, unless first knocking, and taking his cap off

Round the foot of the flat upon which the Gun-room opens stand the sea-chests of the Midshipmen, disposed in the order in which they came on board: that belonging to him who was lately but a Cadet, the very last. Hard by lie slings his hammock, among his comrades, up to the steel beams ; and in the flat he performs all the most private and delicate operations in full view of every eye. For this flat is part of the ordinary open spaces of the ship, and public to all upon their occasions there. Until he becomes a Lieutenant the Midshipman knows not any privacy.

For the most the Gun-room, where live the juniors of the Executive, including Assistant-Paymasters until of four years' seniority, and

the junior Officers of the Engine-room, is a small place, maybe eighteen feet long by nine wide, and so low that one can touch the deck overhead by stretching up a hand. Three ports with small red curtains let in a quantum of daylight as they overhang the sea by some three feet. Beneath these ports a long cushioned seat runs along the entire length of the mess, and alongside it, with merely squeezing-room betwixt it and the seat, stands a thick mahogany table. At the end of the table is a narrow sideboard, with a small hatch sliding up and down in the bulkhead, and giving access to the pantry, where live the mess steward and his two boy servants; and through this hatch not only everything passes that is served, but, also, at times, much obliquity and objurgation cast upon the steward, when 'eggs is not eggs,' and other things fall out awry, or the haste and hunger of coaling-day or night supervene.

A piano strapped to the bulkhead, an easy-chair the perquisite of the Senior Sub-Lieutenant—ruler and president of the Gun-room Mess, and zealous as to his responsibilities, vide a certain section of * The King's Regulations and Admiralty Instructions '—arms-racks by the

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door, a rack full of dirks and belts when their wearers are off duty, and two strong mahogany benches complete the furniture of the place. Only on guest nights, and on Sundays when the O.C. inspects, is the general raffle of its occupants carefully sorted, and put together, and the locker doors as carefully secured, each one. Overhead are racks of golf-clubs and cricket-bats, racquets, and hockey sticks. By the stove hang letter-racks, a baize-covered noticeboard ; and a medley of pictures adorn the rivet-studded white walls. But, on the coming of war, the Gun-room like the rest of the ship is stripped of piano and other amenities of existence.

Here, then, the Midshipman lives, and moves, and has his being for the brief years of his training before passing for Acting Sub-Lieutenant ; and here, also, he is quartered till he wins promotion to Lieutenant; and then will add one ring to that with the curl of executive already upon his cuffs, and gets a cabin.

The Midshipman is part and parcel of His Majesty's Navy.

He has his routine duties to do as an Officer

of the watch and of divisions : is put in command of one of the small craft, and is responsible for her and her crew when afloat. His duties are manifold.

But still his instructions go on, for he must obtain a practical knowledge of seamanship, gunnery, navigation, torpedo, and engineering in order to fit him in due time to perform the duties of a Lieutenant. For the first twelve months, then, after joining the Midshipman, officially termed a 'Junior Midshipman,' absorbs such systematic instruction, and it takes precedence over other work, and is comprised in drill, lectures, and practical work. In the other hours they take part in the work of the ship. During the second term of twelve months, he is termed a 'Senior Midshipman' and has an active part in the general work of the ship, instruction being brought down to a minimum, for his duties as an Officer of the vessel take precedence. And thus he puts to good use the knowledge he has gained during the first twelve months.

A Lieutenant specially born for instructional duties fathers him in the naval sense, while the specialist Officers are responsible for

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his training in each of their respective subjects. To him, accordingly, the Lieutenant (G) and the Lieutenant (T) devote attention, and the Engineer Officers also have the Midshipman in charge for about one-third of the time. He has to keep regular watch with his own watch of Stokers, and take part in the routine of engine-room and stokehold. The duties of Stoker Petty Officer of the stokehold and engine-room are his ; and, when he is efficient in these duties, into his charge is given the engine-room, and, finally, the boiler-rooms. And so a certain Midshipman won promotion, early in the war. For on the artificer of the patrol craft being severely wounded, and incapacitated, the young Officer took charge of her engines—and brought his craft into safety with signal success.

In time, then, the Midshipman passes for Acting Sub-Lieutenant, the examination of which includes much practical engineering.

On winning promotion to Sub-Lieutenant the youthful Officer's way now lies open to attain the two gold rings on his cuff with the executive curl, either as a watch-keeping Lieutenant, or Lieutenant (G), or (T), or,

again, (E) or (N). For at this stage in his career the selection is made for a specific branch of the Navy, every Officer of which must now be a specialist yet withal capable of achieving all duties which he may be called upon to carry out.

Arid so, as never men were trained before—and, trained to the acme of achievement—are trained these Officers who in time become responsible for the British Navy's victory or defeat—responsible for the destinies of the Empire when weighed in the balance of War.

The Long, Long Watch

" It is a long, long watch, my son, and to some, the breaking watch, too, poor devils," said the Lieutenant, leaning down to tap out his briar against the near fire-dog.

" It's then that three to four in the morning can seem longer 'n your life. Just listen to that drive of sleet against the windows, and freezing as it falls, I reckon. Jolly glad there's Blanket Bay, and a roaring fire upstairs for me, I can tell you, and no Middle Watch."

The Long, Long Watch

THE Battleship sways onward with a slow and steady undulation as if seeking to lull her crew in their slumbers. It is long past since * Hammocks' was piped on the lower-deck; and now even the smoke-room is deserted, Officers having become tired of waiting for the Poldhu wireless news, and others having left to make inspection of the particular department for which they have to answer. But, in a certain cabin, the occupant of it awakes with a start, and marking the electric has been switched on he concludes he has been called by the Corporal of Marines but must have dropped off to sleep again. With an exclamation of chagrin he jumps out of his bunk, and begins to dress very quickly.

He slips on two or three layers of ordinary clothes, including his thick pilot-cloth trousers, and two sweaters. Then come the roomy jacket and trousers of 'lammy,' and the stout sea-boots and a thick woollen comforter round his throat and * oilers ' over all. Eight bells strike as he reaches the upper-deck, and here he tucks

his chin into the neck of his duffle coat and the coils of comforter, for the wind cuts like a knife, so icy it is. Hastily he makes along the boat-deck, that is slippery with frozen sleet, and climbs the ladder to the bridge. Here he forges into the obscured chart-house with its screened light, and scrutinises the sheet with pencilled line showing the course of the Squadron. Then he hastens up the bridge.

"Black as the wolf's throat, but everything all right," remarks the Officer he is relieving. "Absolutely rotten weather, though, ever since four bells."

The Officer 'going off'⁰ talks of the course and speed, ship's station, gun-crews, and other matters concerning the great vessel and the Squadron that is steaming in columns of divisions. Cheerfully he says "Good-night," and disappears to initial an entry in the signal and wireless logs to the effect that these have been mustered by him, and found correct, signs the deck log-book, too, properly made up, with his initials, then hurries down the ladder into warmth and a semblance of comfort below.

The Officer of the Middle Watch grunts in disgust as a shower of hail drives in on

The Long, Long Watch

his face, and he tugs his sou'wester further down. Then he proceeds to check bearings and station from the visionary phantom, but little blacker than the night, that indicates the Next Ahead. Astern, he sees a little easier the vague shadowy bows of the huge hull of a sister ship, yet, after all, a mere blur in the smur of flying night. The intervening distance, ahead and astern, looks appallingly short. But the young O.O.W. turns unconcernedly away, for it has been his to know it familiarly from boyhood. Yet he keeps vigilant, for the slightest mistake may end in a catastrophe ringing loud all round the world, and one hailed with glee by the enemy.

But for the half-dozen or so men about him, and the Junior Officer of the Watch, all the world might be dead, and the noble Squadron blundering through black void. Round about the bridge is darkness, and overhead and on all sides darkness, for no lights are being shown.

The O.O.W. casts a look forward at the great sweeping forecastle below where the sleet arid the spray are freezing, as morning light will show, in icicles on the cat-davits and hawse-holes, and sheeting with ice the deck.

The top of the barbette stands out vaguely in the unaided eye, with the canted muzzles of its 12-inch guns.

Near by, on the bridge, loom the figures of the Quartermaster and the Bluejacket at the wheel. Between them and the men at the telegraphs, the slim figure of the Midshipman, Junior O.O.W., is dimly silhouetted. A signalman hovers like a spectral figure in 'oilers' about the voice-tubes. Out on either end of the bridge the reinforced look-outs strain their eyeballs. And, below, certain gun-crews close up in rotation. All is ceaseless and strenuous vigilance.

After throwing another look ahead and astern the O.O.W. turns his face for a few seconds to leeward, for the rushing wind seems to flay the skin off his face, toughened though it is to the North Sea's rasp.

" Hey, Mr. Braystock," he calls out as the Midshipman passes, " what have ye got to-night ?"

" Lemco, sir, not cocoa," the Junior Officer replies promptly, it being as a recognised ordinance of the unwritten regulations of the Navy that the Midshipman of the Middle Watch brings up with him that which will sustain

The Long, Long Watch

and warm both himself and his Senior, be it cocoa or other.

And on this occasion the O.O.W. of the long, long watch grunts approval, for cocoa in over-plenty is like porridge to a Welshman—not a fond thing.

Now astern the 15,000-ton consort reels forward like a black mountain through the waters. As her bows rise on a ridge of sea, and the whole bulk of her swoops onward, utter and sudden destruction seems to loom but a few inches away. Not that this dismays the Lieutenant with the dripping waterproofs and ice-cold hands and face. It all has been his for years now.

Anathematising her and the weather the O.O.W. turns and stares at the other shadowy mass ahead of his bows. By his hand is the telegraphs that ring down to the engine-room, where men control the steam which sweating men make, and the youthful Lieutenant overhead has at his command. But, not yet, come his minutes of anxiety and suspense—suspense that may bleach an ordinary man's hair grey.

On the bridge for a long while there is nothing of account—nothing but the overwhelming, freezing night, and the swish-swish

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of broken waters, and the patter and slither of the spray and gouts of sleet. Occasionally a heavy running sea buffets the Battleship, and sprits of water rend on high to fall upon the superstructure, and form more ice.

Yet, however, the routine is being carried out, systematic and rigorous. For the Officer has many duties to perform.

His it is to muster the watch, and the lifeboat's crew, and he has to see to it that the lifeboats are ready for lowering, and that the Gunner has fulfilled his duty in providing them with Very's lights, and a lantern, and compass are in each of them. He has to satisfy himself, too, that all subordinate Officers are at their posts, and attentive to their duties: that also the flashing apparatus, lanterns and all other things necessary for signalling, including the signal guns, are ready for instant, effectual, use. His, too, is the responsibility that the signal books of the wireless and other signals are correct for his watch.

During the hours of the night watch the Officer has to be careful, also, that the Police of the Watch go the rounds, and attentively visit each part of the ship every half-hour to see no unauthorised light is burning, and no

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unauthorised smoking or other irregularities take place. His it is, also, to take care a Sub-Lieutenant, or Mate, or Midshipman of the Watch go the rounds often.

Accompanied by a Marine with a lantern the Junior Officer traverses the lower-deck, stepping cautiously between the bodies of sleeping men, who lie on their backs with their mouths wide open and their hairy chests bare. Hammocks, slung so close that each one touches the next, hang in endless rows. Only the sleeping faces of the Seamen show above the coarse canvas of the hammocks. Crouching almost to the knee the Officer and the Marine thread their way around. Now and again the head of one of them bumps into a sleeper's back, and he grunts. On and down, among another group of slumberers, down past the hot breath of the engine-room, on and down to the lowest deck, and along the narrow white ammunition passages they pass, and then up out of the close warmth into the blinding black night, up to the bridge to report.

The Officer of the Watch, who now feels chilled to the very marrow, and stiff in every member, despite his many coverings, has

ceased to beat the ice off his oilskins, and slapping his mittened hands vigorously together listens to the report.

"Thanks," he says laconically, the next moment to give vent to an exclamation in a different tone. The wind has chopped into the north-northeast, and a thick flitter of snow swirls down.

Suddenly a faint pin-point of light starts twinkling long and short away in the blustering night to port. There, a mile or so distant, the Senior Flagship leads the Division having the lowest fleet numbers in the Squadron, for every ship has for distinguishing purposes her fleet number. Now Flagship is speaking to Flagship on a matter of routine.

"What the devil is the good of bustling at this wretched hour in the morning?" grunts the disgusted O.O.W. to the Junior Officer; "but old 'Ironsides' never can sleep like the rest of us." For such is the irreverence of youth toward wakeful and ever-working Omnipotence.

The next instant or two, on clearing the sleet and snow out of his aching eyes, the Officer of the Watch shoots forward to the telegraphs.

The Long, Long Watch

In one glance he has gathered that the Next Astern has badly over-run her station, and is coming up close a-starboard, and the sinister bulk of her seems to swoop down but a few feet away, intent on utter destruction. That, too, the Next Ahead has fallen behind in her station, and to port. And collision with one or t'other appears certain.

Already the silent Quartermaster at the wheel has shifted his feet, and heaved up one big shoulder. Blinded, also, by the wintry darkness, and steaming at fourteen knots, the O.O.W. has to decide instantly. And a wrong order may bring about dreadful disaster and a ruined career. Almost without a thought, nay, through instinct of seamanship, the Officer gives his orders. The Battleship falls away to port, and her engines increase their revolutions, but cautiously; for, over there, lies danger of the port column; and, too, the Senior Flagship, for all the night be the blackest on the sea, hath an eye which ever penetrates.

As the erring consorts, that are skilfully evaded, slink into their stations, and the Battleship as stealthily resumes her own, it may be that the relief of her O.O.W. is sadly

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dashed at the sound of the Commander's curt voice just behind him. Then the Officer of the Watch delivers himself a little later as, sheltered by the lee of the chart-house from the piercing snow-thick blast, he solaces himself with the last steaming basinful of meat extract.

"No! no!" he breathes gustily, "don't you, Dogsboddy, or me, or any one else ever think of getting to wind'ard of him, or the 'Skipper'! Thank God, we straightened out before this filthy snow thickened,"

And so four hours crawl on till the sharp stroke of 'little one bell' rings through the darkness. Fifteen minutes later, eight bells go, and the Officer heaves a sigh of gladness, for his relief appears, then duly he turns over to him the charge of the ship. 'The long, long watch' with its loneliness, its sudden dangers, and tremendous responsibilities lying so lightly on young, broad shoulders, moulding all, and breaking some, is once more at an end.

Aesculapius in the Navy

Aesculapius in the Navy

AESCULAPIUS is the most silent Officer in the Navy. He may at times write, as all good Medical Men do, to his favourite professional journal or monthly: but, as for the civilians who read, he goes mutely on his way, keeping his eye steadfast upon Number Twelve of *The King's Regulations and Admiralty Instructions.'

To this silence of his there are exceptions, yet they are not many, and when he does write for the public to peruse in pastime he rarely touches upon the human aspects of his own work. So it comes there are many landsmen who associate the Naval M.O. with 'Sawbones' of old days, when the knife and the saw were his favourite instruments, and laudanum his anodyne.

In witness of his silence, is it not that our literature holds Naval Officers from Midshipman to Admiral, but that, excepting the

immortal Welshman of Smollet, the Naval Surgeon of Jane Austen and one or two others, the Naval Medical Officer remains in obscurity. Mayhap, however, the great and saving works he has wrought in the hostilities of the War of the Emancipation eventually bring forth the literary genius that will immortalize him.

During the Battle of Jutland and other fights many of our Surgeons died at their posts. For duty is the supreme call, and the Naval Medical Officer obeys it gladly and wholehearted, with no thought as to its difficulties and dangers. And what they may be in a modern fleet engagement Tsu-shima first revealed:

The mess deck was full of wounded. They were standing, sitting, lying—some on mattresses put ready beforehand—some on hastily spread tarpaulins—some on stretchers—some just anyhow. The dreadful noise of deep sighs and half-stifled groans was audible in the close damp air, which smelt of something sour and disgustingly sickly. The electric light seemed hardly able to penetrate this stench. Ahead somewhere, in white

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coats stained with red splashes, busy figures were moving about, and toward them all these heaps of flesh, clothes, and bones turned, and dragged themselves in their agony, expecting something from them. It seemed as if a cry, motionless, voiceless but intelligible, went up on all sides—a cry reaching to one's very soul, a request for help, for a miracle, for relief from suffering though at the cost of speedy death.

And according to survivors thus it also was, on board some of the German vessels which were lost in the waters of the Horn Reef.

In the piping times of peace the Medical Officer of his Majesty's Navy, who is distinguished by the significant red slip between the gold lace on his cuff, is as a rule not worked too hard. The average death-rate of the British Navy, excluding deaths from accidents, is only about two in a thousand men.

In it, also, some of the ailments which landsfolk suffer are practically unknown, and cases interesting to the medical profession are not many. Consequently, then, to enable the Naval Surgeon to reinforce his knowledge, he

is required to take once in every three years certain courses of study at a Metropolitan hospital for a period of three months. So thus he requalifies himself in knowledge of the advances of medicine and surgery. Other full facilities are also given him to enable him to keep abreast with the times.

Then, foresighted as well as thorough, are the training and methods of the Naval M.O. Indeed, so fully and efficiently is the medical side of the British Navy now organized that, within four days from the Declaration of War, August 4, 1914, hospital ships had been fully equipped and staffed, and sent upon their way to join the Grand Fleet.

Excepting the small craft and light cruisers all British warships carry two or more Surgeons, of whom the Fleet-Surgeon is the Senior or Medical Officer-in-charge. Under his directions are the sick-berth, or hospital, and the trained staff of Sick-berth Stewards and Attendants. The sick-bay or berth is one of the most comforting places on board, and, resembling a small hospital ward fitted with swing-cots, is placed in the most comfortable spot on the lower-deck, at one side of the

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vessel, to procure thorough ventilation and abundance of light.

Clean, bright, and attractive, it is the haven of rest and healing to those who are really ill. But, to others seeking its snugness and the luxuries of 'medical comforts,' a swing-cot, and attendance, not through sickness, but from a constitutional dislike to hard work or some unpopular labour, such as coaling ship, it can become a place of sudden awful pains, and, maybe, terror too.

The Sick-Berth Steward—and he a Chief Petty Officer, who is responsible for the management of it, under the Medical Officer-in-charge—has usually an extraordinary knack of summing up the would-be patient, and the M.O. himself possesses an eye like the Rontgen rays.

"And what's the matter with you?" asks the S.B.S., on 'Shiner' Green appearing in the sick-bay doorway, pressing his 'hands on his bejumpered stomach.

"Feeling wery bad ! Pains in me stumach an' me ead," the sick one replies in suffering tones. "Can 'ardly keep me feet."

"Ah, bad as that," the S.B.S. jerks out

unsympathetically; " put out your tongue, then. U-m! Let's see your eyes? Ah, I thought so!"

" Yus ! Me inside feels all in a clove-'itch, an' me 'ead jist burstin'."

" Want to see the Doctor, eh ?"

" Yus. I caun't 'old up wiv it no longer."

" I should think not," replies the S.B.S. in unmoved tones, and he turns him to his dispensary. " What you need is a double dose out of the fore top-man's bottle; and here it is. ... Swallow it, now; or, bejiggers, you'll find yourself in the report, and the 'Bloke' 11 be giving you something a sight worse than tipping down good liquor like this." And off goes 'Shiner,' mentally cursing his luck, and looking forward to experiencing several real pains, for he knows the 'fore top-man's bottle' holds mighty efficacious stuff.

When, however, 'Shiner' is suffering, he receives prompt attention, and all possible care from the M.O. and his sick-bay staff.

All of them from the Attendant to the Steward have a certified knowledge of anatomy, of drugs, nursing, first-aid, and simple remedies for wounds, and also cooking for the

Aesculapius in the Navy

sick. The Second Sick-Berth Steward must, among other qualifications, have a full knowledge of compounding drugs and dispensing; and, before passing as Sick-Berth Steward, show a thorough mastery of the duties involved, and be recommended by the M.O., certifying him for advancement, from actual experience of the man's professional work.

In one part of the Sick-bay is the dispensary with its chest of medicines and surgical instruments—incidentally, the M.O. or Surgeon has to provide himself with, and keep in proper repair, at his own expense, a complete set of instruments—and also the grocery and other necessary chests; for the sick have such medical comforts, etc., including wine and spirits, as the M.O. may consider necessary.

Every morning at 9 a.m. or so, he is available to the men, and, notwithstanding the careful filtration of new cases by the staff, he occasionally has to deal with a fictitious patient. Him the Medical Officer treats as the S.B.S.—to a drastic dose of disagreeable medicine. Occasionally the malingerer comes along. But the chilly and discerning professional eye in time discovers the nature of the

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case. He then reports the particulars to the Captain, who deals with the offender.

Though the M.O. has a fixed daily routine, it is one leaving him some leisure, unless the incidents and accidents of war fill up his sick-berth, and then, in time, his most serious cases are transferred, when possible, to the hospital ship. He is required to visit the sick at least twice a day, and oftener when necessary. In his care, too, is the general health of the vessel; water and milk to be analysed, and the provisions bought ashore in foreign parts to be examined and passed by him. When the Captain, accompanied by the Heads of Departments, inspects the ship and men on Sunday and also on Thursday, the M.O. is one of the party.

He has, too, many returns, reports, forms, etc., to fill up, dealing with the sick and their illnesses, and certificates of 'wounds and hurts' to give; and to keep a rough and fair journal of his practice, which is sent every year in to the Medical Director-General of the Navy; and in addition to forwarding quarterly, a nosological return of the state of his patients and the ship's health in general.

Aesculapius in the Navy

Every morning a little after 9 a.m. he submits the sick list to the Commanding Officer, and also renders a weekly return of cases.

No fewer than eighteen pages of the King's Regulations and Admiralty Instructions are packed with details concerning the duties of the M.O. Yet, notwithstanding, the ' Doctor' or ' Chemist' has, in the kindly years of peace, more spare time on his hands than any other fellow-officer.

But the war has proved his unprecedented efficiency, and splendid heroism.

When the vessel is going into action the Medical Officer and all his staff" are transferred to two distributing stations, one forward and one aft, below deck and behind the ship's thick armour. If there is time the crew bathe before action, and change into clean white underclothing, so as to lessen any chance of any infection of their wounds. Many of the Officers and men have to attend instructions and qualify in first-aid to wounded; and every gun-crew is supplied with a bag of dressings, so that prompt attention may be given to the stricken.

Below, the sick-bay staff, and the ' idlers'

or *daymen' detailed to help them, quickly fit out the two medical stations; and the operating platform, all necessary instruments, antiseptics, a medical and an emergency chest, and all requisites are laid ready.

On the grim work beginning overhead, the **M.O.** and all his staff know they are right in the middle of it, even as are their shipmates who also are below. They hear the deep-throating of the guns; and feel the thud of projectiles as they smash against the armour, and the crash of shells; and soon there creep down the irritating fumes. Stretcher parties are gathering the wounded, and lowering them by means of cleverly devised methods to the medical stations, where the merciful work is faithfully accomplished. Then the casualty is removed to the sick-berth, or the ward-room, or other part of the vessel used for the time as hospital.

On board one great vessel during the Jutland Engagement the smoke and fumes from the enemy's heavy fire of gas and other shells filled both the dressing stations, which were crowded with wounded, and added suffocation to their dangers. The vessel staggered in the

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heavy sea-way. She shook under the blows upon her hull, and from the concussions of her guns. Cool and ready in that dazing pandemonium, the Surgeons slipped on their gas masks, and continued their work without a check.

Another ship was hulled, and her electric light cut off. She was making water very fast, and the operating station forward was in darkness, and choking with the fumes of the gas shells. Yet here, the Medical Officer-in-charge toiled single-handed by the light of a lantern, till, at length, the order came down to clear the station, and get the wounded up on deck, for the vessel was being abandoned. And, of those lives that were in his charge, the Surgeon lost not one.

At the dressing station, as in the sick-berth, it is the Sick-Bay Steward who is the right hand of the M.O.-in-charge: and right ably can the S.B.S. acquit himself when the emergency arises.

It is on record that during the flight of the Imperial High Seas Fleet on the night of May 31, 1916, one of the warships was hit by a shell, which penetrated, and wrought havoc in

the sick-bay. The Surgeon there was killed, together with several of the staff, and the Sick-Bay Steward was severely wounded ; yet, pulling himself together, he with an Attendant so efficaciously treated the wounded that he saved a number of lives. And many were the other Sick-Bay Men in that engagement, and in certain ' livelinesses' in the North Sea, who achieved services equally signal.

Not a tithe of the bravery and work of the Naval **M.O.** and his staff will ever be realized. For, silence is ever with the unselfish.

Eyes of the Ship

Eyes of the Ship

"(N end of good men, the lot of them. More certain than a machine, though how they do their work sometimes is a miracle! " remarked the Officer who was of them, as, overlooking the estuary, we watched a Flagship talk long and copiously to her humbler consorts. " In the scrap of the Horn Reefs they came into their own at last. Some of them had rather lively times there."

For is it not recorded in Admiral Jellicoe's despatch to My Lords that all ships responded remarkably well to signals under difficult conditions, and that ' the signal departments in all ships deserve great credit for their work.'

And, with this, it has to be kept in mind that when a great and numerous Fleet is manœuvring in close formation and at high speed, the results which may follow the slightest blunder on the part of a signalman can plunge thousands into mourning, and, too,

defeat the tactical movement, even to bringing about defeat.

Some there are who hold to it boldly that the British Naval Signalmen are the smartest men in the Empire.

It is a daring claim; yet certainly their severe and arduous duties require a combination of nerve, alertness, and quickness of mental action, that is nigh phenomenal. But with it there has to be included a mental method which can work for hours on end at a breakneck speed, and with a sureness like that of mathematics as regards correctness of results.

Signalling in the Royal Navy is for the few: and they of this few are caught early before or at eighteen. Rigorously are they trained, and rigorously are all undesirables combed out.

Be the day bright and shining, or dull and hazy—be the night bright as noon, or black as the Vale of Gehenna—come rain, hail, sleet or snow—he that wears the distinguishing badge of the two crossed flags, with his glass up at his unwinking eye, renders instantly the far-flown flags or distant dots and dashes

Eyes of the Ship

of light into their one and only meaning. And, when the fog is abominably thick, or snow prevents the use of flags or alternative signals, then his ear as splendidly and accurately resolves the hootings and groanings of the behemoths into the correct order or orders or communications whatsoever intended. Also, to him the maddest gyrations of the maddest whirling semaphores are the plainest of plain English, ay, easier to read than any print.

When, however, he does make a mistake, for neither man nor machine is infallible—and up on his lofty bridge the razor-edged gale may cause his eye to blear, and smoke from the funnels behind him to obscure the distant signals, and belchirigs of ash and clinker blind him—it is truly nigh 'as bad as being 'ung.' For the Signalman then becomes the culprit of that ship, and, if there be consorts, they all know, too. When the Flagship administers a wiggling, it necessarily is administered in public, to the great unhappiness of that unfortunate vessel receiving it.

Thus it follows, only he who is far above the average of his lower-deck mates in mental

quickness and intelligence—a genuine spry man, sharp as a stab of lightning—may belong to the signal staff.

Others of his shipmates may rest a while on the qualifications for their ratings. But he of the crossed flags—he, on whose accuracy and quickness so much of the ship's good name and fortunes depend—must be ever striving to perfect himself. And on his signal history sheet, which is attached to his service certificate, are set forth the opinions formed of his capabilities, both in the schools of instruction and in sea-going ships, to be the chief guide to Officers in choosing him for advancement or for training. Ceaselessly he has to continue his training in aural signalling at sea, the number of exercises during the week depending on his degree of proficiency; till, when he can read 90 words in five minutes without let or hindrance, as easily as you can read the ABC, only one exercise a week is his. And, moreover, he must go through a requalifying course every three years in one of the signal schools, whether or no he has set himself to win the supreme and high-coveted emprise of Signal Boatswain. Every day, Signal Boys

Eyes of the Ship

and Ordinary Signalmen at sea are instructed in buzzer signalling for half-an-hour, and in the primary stages of wireless telegraphy for one hour a week.

A lad, while he is yet in the Training Ship, may be selected from the Boys Second-Class in her. He is then put through a special course of instruction and training in signals and signalling to fit him for his duties; and, only after having qualified, like the other entries from the Ordinary Seaman rating, in one of the signal schools, is he drafted as a Signal Boy to a sea-going vessel. Then is he paid the enormous sum of *Id.* a day, and has many duties to perform. Among them, his it is to stand by to hoist the speed and helm and other signals, and to help at the flag lockers what time signalling is going on. And his, too, to clean the gleaming lamps and shutters of the night apparati, and to shin up the lofty, bare, thin topmast when the halliards of the signals are unrove.

Then comes a day, when he is eighteen—if he, like the Ordinary Seaman, or the Boy First-Class (ship's), entering for signals, has a good elementary knowledge of the day and

night work, and is fit and capable of reading semaphore and flashing signals at the standard rate with fair accuracy—that he is rated as an Ordinary Signalman.

Yet withal he has to continue in acquiring the deep knowledge of his vocation along the lines laid down for him by the Powers That Be: and to perfect himself in his part of the great naval machine, as never Ordinary Signalman perfected himself afore. For from the Signal Boy, Ordinary Signalman, Signalman, Leading Signalman, Yeoman of the Signals, and so on to Chief Signal Boatswain, each step upward grows the more and more comprehensive.

In instance, to reach the rating of Chief Yeoman (Chief Petty Officer)—the men who in many of the ships-of-the-line engaged in the Jutland victory were responsible for the communications—one must be able to read instantly and correctly all signals shown by the methods of semaphore, heliograph, visual signalling, flag waving, and telegraphy; and to have, too, a general and accurate knowledge of wireless telegraphy, theoretical and practical, including the ranges of waves to be

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expected, together with the general capabilities and limitations of wireless telegraphy.

And yet, in the Navy his shipmates call him a 'Bunting-tosser' or 'Flag-waver.' And unthinking civilians merely credit the Navy man as brave but a 'duffer,' and nothing else. For the shore-keeping Briton in too many instances yet inclines to attach to the Senior Service many of its characteristics of the bygone eras, and remains blind to the fact that Officers and Men now represent the pick of our brains; so onerous and highly specialised are the duties of many in the Navy.

Of the signal staff, many are they who set out to climb to the exalted hierarchy of signals, wherein figures the Chief Signal Boatswain. But few reach this dizzying height.

A Chief Signal Boatswain is the very eye, and dreadful, of Flagship, and accountable to the Flag Lieutenant alone. He treads the Admiral's bridge, wearing the peaked cloth cap of the Naval Officer, the double-breasted jacket with four gold buttons a side, the black tie and standing collar: and himself translates the Admiral's message or order into

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straining flags, the flying Signalmen below clipping the symbols together without pause or failure, and in swift continuous order.

Captains think twice, nay, thrice, about him, and all signal staffs fear him. His eye is all-powerful, and is never asleep. What his bridge does not record the C. I. C. does not see.

In the prime of life the Signal Boatswain may retire with enough pension on which to live comfortably all the rest of his days, and may for zealous service be awarded promotion to Lieutenant, and so all the glory of two gold rings on his cuff.

The power and range of the eyes of the Signal Bridge are amazing.

From the high yardarm of a vessel three to four miles away a strip of bunting streams dead down-wind. The hoist floats end-on like an infinitesimal strip of stiff cardboard. Yet all in a twinkling the Signaller takes in the message correctly. It is with him a kind of ocular jugglery—a marvel of true seeing as it were round the corner. Thought-reading is an infantile trick compared to it.

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Again, the Flagship, almost hidden in the smother to leeward, has hoisted the striped flag, indicating her intention to semaphore. The last answering pennant from the Squadron, that is making for port, has shot up; and then on the C. I. C.'s signal bridge one of the semaphores, that, standing at each end of the bridge, are some twelve feet high with three arms of wood painted in bold bands of black and white hanging over at their tops, commences to wave its arms in seemingly inextricable confusion. The Yeoman of the watch steadies his glass. A Signal Boy stands at his elbow with pencil and pad in readiness. And, as the black and white arms flail the message out across the miles the Yeoman calls it word for word, second after second.

"Flag. General. Leave may be granted to Officers from 6 to 8.30 p.m. Officers not to go outside the lower town, and to be ready for instant recall."

The Yeoman takes the telescope from his eye.

"Finish. Down answer."

And a Signaller near by hauls down the tail of bunting hand over hand, then hitches

the slack of the halliard to the bridge rail.

But the pride of the perfected Signaller is to read two signals at one and the same time. Though they may fly at opposite sides of the compass—though the ship may be pitching viciously—the seas rending up over the bridge in blinding showers, and the reek from the funnels obliterating the near distance—he does it. Does it easily and smartly as swallowing his tot of 'three-water' after dinner.

So practised is the visual power and capacities of the signal staff that they descry the smallest thing or token at nigh incredible distances. Even though the waters be flawed by the breeze and the current, they pick up most surely, even from afar, that small feather of foam caused by the passage of the U-craft's periscope showing but its tip on the surface. And, in calm weather, with like accuracy of identification do they mark upon the face of the smooth and peaceful sea the almost imperceptible disturbance caused by the underwater boat when surging along if but a few fathoms from the surface.

Eyes of the Ship

Ever, then, do the 'eyes' of the ship keep ceaseless watch on all things whatsoever that move upon, and above, and under the waters.

'No end of good men, the lot of them.'

Brooms of the Sea

Brooms of the Sea

THE Grand Fleet passes onward, with Squadrons of Battleships formed in great unbending columns, with Cruisers spread out in fan formations, and light craft hovering and watching on its flanks. The Sea, the Highway of the World, is broomed for its exacting approach.

It is broomed by thousands of brooms which sweep the death-infested waters as clean as possible. Then the main work of the Navy and of the steamers, great and small, plying their trade beneath trails of smudgy smoke which even from behind the horizon reveal their coming, may be achieved effectively, and in comparative safety, too. Otherwise, to the many perils now lurking in time of war on and above and under the sea, many many more would most surely be added; and so an enormity of destruction effected by the enemy, who, affecting to have no let nor hindrance

save his own, denies the usages of civilisation and the common laws of humanity.

Yet, for all the multiplication of his cunning and nefarious devices and contraptions to bring about sudden death and wreckage, the terrible hammerhead forged by Britain for the protection of the Empire has kept watch and ward on the heart of the British race; and, while foiling the menace of invasion, has secured the Navy, which was to ravage and hold the high seas, within the low and confined sea of the Baltic and behind the minefields of its own coastal waters. That comes of the work of the sea-brooms of Britain. Minesweepers and patrols and other craft, from the trawler and tug to the yacht once spick-and-span, and steam-packets of every description, they all have acted as tenacles of the far-reaching stranglehold. No braver and more dangerous work than theirs has been achieved in all the naval operations.

Of other Navies only one had hitherto tasted the bitter experiences of such work, and that, too, the Navy of an Island Power. In the War for Manchuria, mines were one of the chief features of the naval defensive,

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rendering the task of the Japanese Squadrons blockading Port Arthur one of extreme danger. So then minesweepers with their large steel nets swept the waters every morning for floating death, and mine-creepers in pairs towed their grapnels on the bottom to find and destroy the mines laid over-night in the fairway by the Russians. And, as now, too often only a boat's crew of dead and terribly wounded sailors returned, and a 'sweeper' went sky-high, the wreckage of it twirling about in the thick heavy cloud of smoke from the mine.

In the days, now so far away, before the 'Old' Navy became resolved into the 'New'—which is the very nth of modernity in naval man and machine—it was assumed that the offensive against a mine-laid area could only be conducted through counter-mining by sending in boats to lay mines, that, when exploded, caused the enemy's mines also to explode, and thus be destroyed. But taking tent of what had happened in the Far East, the Admiralty Board became active in establishing the Trawler Reserve, to fish up mines in the open sea; and also in planning the organisation of

patrol and other services. One great State Department, at any rate, owned no chief having sleep in his 'spiritual home' with Judas of the nations.

Then it was when hostilities burst forth that more and more trawlers of fish were set to trawl for mines, they also and their stout craft having immediately been taken over by the Admiralty and absorbed into the **R.N.T.R.** The Skippers are given the rank of Warrant Officers of the R.N.T.R., in which the Deck Hands, Trimmers, Engineers, and Greasers are likewise enrolled, coming within the discipline and the Regulations of the Navy Proper. And in the years of war many young Deck Hands have grown up into Mates, and Mates into Skippers, and Skippers into Chief Skippers, after having been rigorously trained in the way they must go by Chief Petty Officers, many of whom had previously obtained their pension and well-earned quiet ashore in country cot and placid town.

Now, of all the waters girdling the British Isles none work such havoc on vessels and human life as the North Sea. Not without significance was she once claimed by the

Brooms of the Sea

enemy as 'The German Ocean,' for treachery is their bond in common. Well it is, that the majority of the **R.N.T.R.** crews who broom her waters are of her coast, and have full ken of her fitful and uncertain moods and movements. Most dreaded by all trawlers and drifters is the 'fall of a sea,' a phenomenon peculiar to her angry waters. That is, a vessel lifts to a wave that, breaking suddenly beneath, leaves her unsupported, and she falls bodily, and maybe breaks her back in twain. Come fine, come coarse weather, the minesweepers carry on, and the manipulation of craft and 'kites' in the 'fall of a sea' calls for the utmost sagacity and quickness of initiative.

The Trawlers which broom the sea are divided into groups, each group under the command of an Officer of the Royal Navy, or of the Royal Naval Reserve; and he in turn under the **O.I.C.** of his area. Carriers and catchers of fish when peace was otiose, the small, one-funnelled, two-masted steamers engaged in naval operations wear the White Ensign, and are painted the usual steel-grey, each having on the bows her Number set forth in large white figures.

There is no weather known that they cannot face. In calm, or in baffling gale which drives other vessels into shelter—in fog, hail, snow, or blinding rain—they do their work with unerring instinct for the right thing. Much as if the instinct developed by generations of their forbears in quest of travelling shoals of fish is just that one applicable to travelling mines and submarines.

The craft work in pairs under the direction of their Flag-boat, on board of which is the Senior Officer in charge of the six vessels. According to the nature of the purposed 'catch' is their method of clearing the waters. Snaring mines and submarines involves the use of specially devised nets ; and trapping the U's is the perquisite of the Drifters. But to-day trawling work, though hazardous, is done with more certainty and less risk than that accomplished in Port Arthur waters. On board the Japanese minesweeper of that war a derrick was stepped in the forecastle, and there were four long spars fitted with gear to secure the net by its corners. At the foot of the net were two blocks, and a pulley was rove from the ends of the upper spars to these

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blocks to keep the steel net some forty to fifty feet away from the sweeper. On it having been lowered in the water, the vessel steamed ahead fishing up the mines. It was experienced that the chances of this highly exciting work were reduced to but two; for if the net ahead failed to sweep in the mine, the latter inevitably struck the vessel, and thus many vessels and lives were lost.

Again, they who broom the North and other Seas may gather the mines by sweeping and creeping. Betwixt each pair is towed a strong wire hawser, dragged under the water at the depth desired, and kept there by means of weighty 'kites.' Slowly the Trawlers work over the suspected area, and, should mines be there, the steel wire catches them just above their sinkers, and refts them away. Speedily then rifle fire demolishes this machination of the Devil. Though there are occasions, and, alack, too many, when the first intimation of a mine's adjacency is the dull roar of its explosion and the crash and rending of the craft's stout hull. Then, if the vessel has been struck amidships, she is most likely a doomed thing, her crew below perishing. But, again, if the

impact of the explosion has caught her bows or other part forward, she may keep afloat long enough to be towed into harbour.

A typical case of bravery in the R.N.T.R.—and by the third year in the war there are many and many—is that of Lieutenant H. Boothby, R.N.R., one of the earliest to be granted the distinction of the Distinguished Service Order. When Trawler No. 99, *Orianda*, of which he was C.O., was blown up by a mine, he successfully got his men away with the exception of one that was killed. And again was he blown up on January 6, 1915, in Trawler No. 450, *The Banyers*, and again brought off the survivors in safety.

There are no crews afloat who are more fearless and heavy-handed against the enemy than they who serve in the minesweepers and drifters. Free men of the Sea before hostilities arose—free as the gannet, and as equally wary of the gins and trammels of restraint—the grip of discipline and subordinated command has come exceeding irksome to them. Some, refusing obedience, have had to be 'broken'; but, for the most, acquiescence and aptitude are theirs. Quarter for incom-

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petence is given in neither fishing fleet nor Naval Service. Yet the lot of some of the R.N.T.R. and patrols, when cast in a vessel the Officer of which was formerly a Merchant Marine Mate of 'hazing' propensities, has been very very far from happy. For, in such instances, the gold stripe of the R.N.R., and the R.N.V.R., has brought forth but greater vehemence of arrogance—tyranny, too.

Compeers with the R.N.T.R. are the others of the Auxiliary Fleet, they who accomplish the police work of the Naval Forces.

On the Patrols, also, lies the responsibility of guarding the Isles, while the Grand Fleet seeks a meeting with the Low Seas Navy. They control the passages through the mine-fields, and see to it that shipping does not run foul of them. Inquisitive neutrals and others they hold up for escort into the adjacent base for close and wary examination. All outgoing and in-coming vessels they speak, and by means of them orders are transmitted to the minesweepers and drifters afar at sea.

Many of the Patrols passing up and down their beats, which are so arranged that no part of the zone watched is left unguarded at any

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time, keep the sea for months. Supply vessels furnish them with essentials, and certain of them seldom sight even the far-off smoke of a steamer behind the horizon. Afar in the North Atlantic their line extends, and so cunningly arranged that a vessel making to slip through, and run down the coastal waters of Norway, seldom escapes arrest.

With narrowed eyes and vigilant, the Patrols examine the coast of the British Isles. Loch and islet, creek, bay, and river mouth they search and probe, for aye is the enemy's fertility of resource kept in mind. Desolate sea roads and lonely far outlying coastal waters— islands, too, under the lee of which hostile submarines may lurk, or ship stores from some daring neutral—take the systematic and repeated attention of the Patrols.

By day and by night they are cruising in the mine-strewn waters, busily on the alert for U-boat, and scuttling torpedo craft, and the death ever afloat under the surface. They push their way against wind and sea. With heavy tumbles of grey-green water gouting over the bows and buffeting the vessel on either beam, and showers of wind-driven spray

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beating upon the deck and blinding the unprotected eye, the Patrols plod onward. To them the dirty weather is as a Godsend, for then the Submarine thinks but of her own safety deep under. Yet, then, mines break adrift. So, always, unseen dangers lurk—maybe beneath the feathering wave now tumbling down in streaky foam under the bows.

"'Deed, it's a' o' the wark we're sae glad tae dae," remarked a Chief Skipper, "an' we think naethin' ava o't! . . . Naethin' ava! Sometimes we hae a graund hand o' mines, an' the pickle siller the Admiralty gies for them is no that bad. Oh, ay, the wark's a guid wark, an' no sae bad as 'e think."

Above all, do the brooms of the sea harass 'die unterseeboten.' They are a terror to all sea assassins, and are among our bravest and bonniest fighters—Trawlers and Sea Patrols.

PRINTED IN GREAT BRITAIN BY
RICHARD CLAY & SONS, LIMITED,
BRUNSWICK ST , STAMFORD ST , S E.,
AND BUNGAY SUFFOLK

