

THE DAY WAR BROKE OUT-



—over two thousand British merchant ships were on the high seas.

SIGNALS were flashed to them, and on board each ship the master opened the sealed envelope of secret instructions he had received before leaving his last port. Many people thought that war would not come; but the Admiralty was taking no chances, and so these instructions had been sent out to all ships, telling them what port to make for if hostilities broke out.

From that day, the Merchant Service has weathered the most relentless assault that the world has ever seen—assault by mine and submarine, by surface raider and aircraft; and this "total war" was begun immediately by Germany against unarmed ships with civilian crews. And not only against unarmed British ships, but against equally defenceless and innocent neutrals—Swedish, Norwegian, Danish, Finnish, Dutch, Belgian, Greek, even in a few instances Italian and Japanese ships.

But the British Merchant Service has known how to fight back, and the "old Red Duster" still flies proudly on all the seas, even although Denmark and Norway, Holland, Belgium,

France, Yugo-Slavia, and Greece have been overrun, and the great fleet of our former ally, France, is no longer on our side.

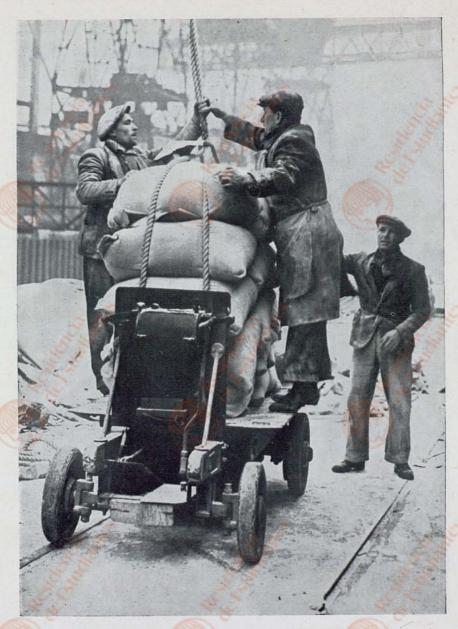
Two powerful new enemies with large and powerful modern fleets—Italy and Japan—have come in against us, but the Red Ensign carries on; and now our cousins across the Atlantic are with us in the struggle, both in the Atlantic and in the Pacific, while in the Far East the Royal Netherlands Navy is putting up a magnificent fight to help us keep our sea lanes open.

Even stripped for total war, with luxuries cut out of our lives, and necessities strictly rationed, we still must import large quantities of food from abroad—more than five million tons of wheat, one and a half million tons of meat, two and a half million eggs, as well as barley, oats, butter, cheese, and condensed or powdered milk. But apart from food, there are the millions of tons of raw materials for our factories, and of weapons of war which pour into this country in an endless and ever increasing stream from the United States, and Canada, and elsewhere; and there is the other great stream of exports, to Russia, to Egypt, to India and Australia—tanks, guns, ammunition, aircraft, and the men to handle them, which Britain sends to the various theatres of war.

It has not been an easy task to turn a peaceful merchant service over to a war footing. But the task has been accomplished, and our shipping losses have never approached the staggering monthly totals of tonnage sunk in 1917.

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Many Merchant Service ships have been taken up for service with the Royal Navy, as Armed Merchant Cruisers engaged on patrol or escort duties; as troop transports bringing troops to this country from overseas, or carrying our



We still import large quantities of food from abroad.



Aboard a minesweeper—an Otter float.

troops abroad; as minesweepers clearing the vital approaches to our harbours of enemy mines; as coastal patrol and convoy escort vessels, tenders, and so on.

They have performed, and are still performing, very fine service, and some have become famous in naval annals—the Rawalpindi, for example, which early in the war fought a gallant action singlehanded against a German pocket battleship and a heavy cruiser, and went down fighting; the Jervis Bay which sacrificed herself, when a convoy was attacked in mid-Atlantic by a battleship, German by steering head-on for the enemy and so drawing all his fire upon herself, and allowing the ships



The gallant "Rawalpindi," which fought a German pocket battleship single-handed.

under her protection to scatter and escape. These are two of the exploits—far too numerous to catalogue—in which merchant vessels converted for service with the Royal Navy



" Jervis Bay" goes——

gloriously to her death.
M.S.F.B.

have distinguished themselves. Many ships still flying the Red Ensign have also distinguished themselves in gallant fights against raiders and submarines.

Not only merchant ships, but merchant seamen as well

have joined the Royal Navy.

In peace time, a large number of officers and men of the Merchant Service belong to the Royal Naval Reserve, which is recruited exclusively from among them, and forms a great Reserve composed of officers and ratings whose lives are devoted to the sea, and whose services are invaluable. In addition to these, many seafaring men have joined the Royal Naval Reserve "for the duration," and a large proportion of the Navy's "little ships" have R.N.R. commanding officers.

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The last war taught us many valuable lessons; for it was then that the horrors of U-Boat warfare began. British, Allied, and neutral merchant ships were attacked without warning, with a brutality that horrified the world. They were torpedoed by submerged submarines, they were shelled and sunk by submarines and raiders on the surface, and the enemy's intention was not merely to sink the ships but to murder the helpless crews, so that even if we could replace the ships we should not have the men to man them, and crews would be afraid to put to sea.

That policy of sheer savagery failed; for the British seaman is a dour fellow, and instead of being frightened he became all the more determined to beat the Hun by getting the cargoes home. Exactly the same has happened in this war. But the Merchant Service has had to face a new form of attack, a much more terrible danger even than the lurking U-Boat.

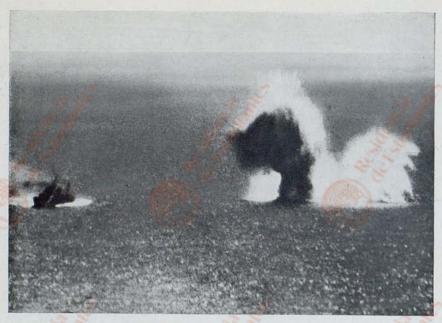
Out of the haze, at dusk or dawn, an aircraft will suddenly appear—unheard, since the constant accompaniment of noise on



"The horror of a lurking U-Boat."

board ship, the muffled roar and clank of engines, the throb of the screw, the hiss of broken water, the slap and thud of seas against the ship's side, the creaking of woodwork and panelling, completely drown the sound of an approaching aeroplane's engines.

For a few brief seconds the men on the bridge and on look-out peer at the stranger, wondering. An enemy or a friend? It hurtles towards them, flying low—and in those brief seconds they know. Bombs scream down, throwing up huge fountains of water as they explode. Fragments of hot metal fly through the air. The plane roars away, sweeps round, comes back; and now machine-guns and cannon are blazing, raking the decks, splintering glass and woodwork on the bridge. Another salvo of bombs; and then, perhaps less than two minutes after it was first sighted, the plane is gone—disappearing into the haze again, out of sight.



"She is sinking rapidly—

And the merchantman lumbers on her course, perhaps scarred and dented by the encounter; or she lies stopped, damaged by near misses; or she is ablaze from stem to stern, set on fire by direct hits; or she is sinking rapidly while the crew take to their boats.

And if they take to the boats and the rafts, there is a strong chance that the enemy will reappear, to machine-gun them while they lie helpless, with no protection, and no possibility of escape.

That is total war, on the German model. That is what our seamen have to face, day and night, week in week out, so long as they are in waters that are within reach of German aircraft.

distant bases. All the same, the threat of the bomber became severe, and coastal shipping suffered considerably.

In the North Sea, the scouting raider might come upon a ship at any time, without warning, and it was impossible for our fighters and Coastal Command reconnaissance aircraft to patrol the whole of the North Sea. Ships were bombed, their crews machine-gunned. Fishermen lying to their driftnets, or plugging along slowly with the heavy trawl-gear down, would suddenly find themselves under fire, often with no time even to cut their valuable gear adrift in an effort to dodge the hail of bullets or the bombs.

But our men carried on. They stuck to their job, grimly, and gradually they were given the means of defending them-

selves, and of fighting back.

To date, well over thirteen thousand guns of all kinds have been fitted to merchant ships. It is a colossal undertaking; but it has been done, and from the start it has proved itself of immense value.

When the German could attack unarmed and defenceless ships, without risk to himself, he did so at every opportunity. He took a heavy toll. But when the ships began to fight back, he lost his zest for these sitting targets, and the figure of our losses went down steeply. When even fishing trawlers were armed, attacks on the fishing fleets became far fewer—and successful attacks fewer still.



—while the crew take to their boats."



Bombed from the air (Focke-Wulf).

The Merchant Service has scored many victories over these commerce raiders of the skies, and some ships have become famous for their exploits. For instance, the little Scots vessel, Highlander, a passenger and cargo steamer plying chiefly in northern waters, scored a signal success when she was attacked by two bombers. One she shot down into the sea, the other she brought down on her own afterdeck! The wreckage still adorned her poop when she made port. handling her And the men guns were ordinary members of the crew.



Attacked by fast torpedo-boats-



—our ships stick it out—and carry home a Nazi prize sometimes!

(Picture shows the "Highlander.")

But the fall of France gave the enemy an enormous advantage. Not only could his U-Boats be based on Brest and Lorient, and elsewhere actually on the Atlantic coast, thus saving them the long and hazardous voyage through the Channel or across the North Sea and out into the Atlantic Ocean north of Orkney or Shetland, but his bombers and fighters were now within fifteen minutes of regular routes used by our coastal shipping, and of some of our most important seaports.

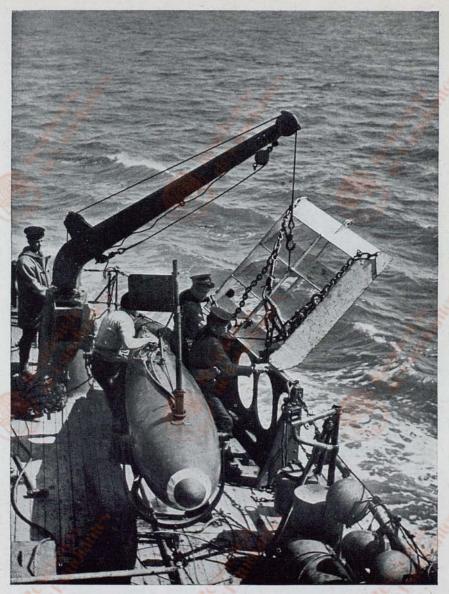
Yet these ports, blitzed again and again, remain in use, and ships, bombed from the air, shelled by heavy batteries on the French coast, and attacked by fast E-Boats dashing out from harbours along the French and Belgian coast, still use all our coastal waters.

One of the most dangerous forms of aerial attack on our shipping that developed to a great extent after the fall of France was the dropping of mines by parachute.

These mines were at first magnetic—that is, they were detonated by means of a device that acted as soon as it was affected by the magnetism of a ship passing over or near it. Later, acoustic mines were dropped, which are detonated by the sound produced by a ship. Both types of mines are laid in the approaches to harbours, in narrow channels and river estuaries, and normally in shallow water.

Then the minesweepers were fitted with gear to deal with both types of mine, and ships were fitted with equipment to protect them from the magnetic mine. This is called degaussing, and is a system of altering the magnetic field of the ship so that it will not cause a mine to detonate.

At the same time, a highly efficient watch for minedropping was organised, so that mines could be spotted, and disposed of as quickly as possible.



The sweeping apparatus is lowered from mine-sweeper to sea by means of a crane.



" Mines could be spotted-

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The ever-present threat to our shipping, however, is from the enemy bomber. This applies not only to ships in home waters, but even to ships far out at sea, for with bases in Western France the Focke-Wulf, which has a very great range of action, can attack ships far out in the Atlantic.

The first form of defence against such attacks is silence—silence and secrecy. If the enemy does not know where our ships are, then he must go out and look for them, and, especially in winter, when visibility is poor, he may go out day after day and never happen to find one of our ships.

So strict silence has to be kept about all movements of



-and disposed of at once."

ships. The enemy has long ears, he has agents everywhere, and who can tell what harm a casual word dropped in public may do?

Somebody who has a friend or relative in a ship, and who knows that he is sailing in a few days' time for, say, South Africa, mentions this fact casually to somebody else—either as a matter of interest, or because we all like to feel important and to be able to give news. And the somebody else tells somebody else, or mentions it in a 'bus or shop, and so the word spreads, quite innocently, until it gets, perhaps, to the enemy's ears, and the enemy knows to be on the look-out for that ship.

That is why it is so very important never to mention ships by name, or to tell anything you may happen to know of their movements.

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The arming of merchant ships is undertaken by an organisation known as DEMS—Defensively Equipped Merchant Ships. Now that nearly the whole world is involved in the war, it is no longer so important to maintain the strict distinction between merchant ships and men-of-war; but the distinction still remains. Merchant ships are defensively equipped; their armament is intended for defence, not for attack. Their crews are civilians, and not Service personnel. Otherwise, they would have to be interned whenever they landed at a neutral port.

There was the difficulty of fitting anti-aircraft armament to ships that were never designed to carry it. A gun's recoil is considerable, and it has to be very solidly mounted. It cannot simply be bolted to the thin deck plates of a ship. It must be rigidly mounted, and the ship's structure must be strengthened to take up the shock. This means that only large ships can carry the heavier type of anti-aircraft gun, while, at the same time, the first obvious defence against aircraft attack, which may be delivered with only a few seconds' warning out of a cloudy or hazy sky, is the machine-gun.

It is no easy matter to score a hit with bombs on a moving ship. Bombing a ship from a great height is far more chancy than bombing a stationary target ashore. So most bombing attacks are delivered from a low level, which brings the

bomber within range of machine-gun fire.

Incidentally, it is important to note that it is not necessary to hit a ship in order to sink or disable her. A bomb exploding in the water near her may damage her so badly that she will founder; or it may shake her up so seriously that she will develop a dangerous leak, or her engines may be thrown out of action, or her steering-gear or propeller-shaft fractured.

Then she becomes a sitting target for the bomber, if it chooses to return and renew the attack. So merchant ship defence has to be designed to prevent the aircraft from dropping its bombs anywhere near the target—that is to say, the aircraft must be driven off, or prevented from making a clean run at the target.

A well-aimed stream of machine-gun bullets, even if it does not apparently damage the bomber, may force its pilot to turn away without dropping his bombs; and if it does do some damage, it may compel him to jettison his bombs harmlessly in the sea in order to get rid of the load and enable him to escape.

So machine-guns, and more machine-guns, have been provided for our merchant ships and fishing fleet. They are of various types, from shoulder guns to fixed twin guns, and large numbers of seamen have been trained to handle them. A bounty of ten shillings is paid to every one who completes



Merchant seamen undergoing a gunnery course.

the course, and seamen, firemen, stewards, cooks, greasers, engineers, and deck officers-including even the only woman engineer in the British Merchant Service—have earned their bounty.

Not only British seaferers undergo this course; for in addition to the British Merchant Service there are the Norwegian, the Dutch, the Belgian, the Free French, and other Allied merchant fleets serving the same cause. Recently, some Norwegian seamen who had earned the bounty handed it over immediately as a gift towards a war fund—a gesture that showed how staunchly and unselfishly they have devoted themselves to the task of winning an Allied victory.

But the crews of merchant ships are never large, and in war-time their duties are greatly increased. On the bridge, officers keep watch and watch-four hours on and four hours off-so that there are always two officers on duty at the same time. Men perform arduous look-out duty, exposed to all weathers as they search the seas for any sign of a periscope or the track of a torpedo, and the skies for enemy aircraft. And in addition to these extra duties they must carry out all the ordinary work of the ship. So it is not easy to find men to spare to man the guns, and where considerable armament is carried additional men have to be provided.

A corps of "merchant seamen-gunners" was formed, of volunteers, mostly young, who underwent gunnery courses and then signed on ships' articles as members of the crewcivilians-whose special job it was to man the guns day and night.

The Army helped, by providing the other solution. Trained machine-gunners volunteered for service afloat, and worked as a shuttle service, in ships sailing in coastal waters or to British ports abroad. In addition to manning their guns and keeping look-out, they perform other tasks on board ship, and are treated as ordinary members of the crew-except

that their pay is simply the normal army pay, with no "danger money" or other special allowances. Naval gunners also serve in the same way; but at the beginning, when the danger was so acute, men and guns were not available, and so the Army came to the rescue.

These Service gunners bring their weapons with them, and so are additional to the ship's ordinary defences. They are allotted as they become available to ships which are specially in need of extra defence, and they have done, and are doing, a magnificent job of work.

The machine-gun, however, is only of use for close defence to meet a close attack, and all the larger ships, including all ocean-going ships, are equipped with heavier armament.

Guns range from the light six-pounder to the heavy naval six-inch, but for the most part the four-inch and six-inch guns

are intended for defence against surface attack, by raider or submarine. The antiaircraft guns are the high angle, or combined high and low angle three-inch, twelve-pounder, and six-pounder.

The merchantseamen gunners were provided primarily for manning these guns; otherwise, gunners have to be found from among the ships' crews. Many Merchant Service officers



Anti-aircraft gunner.



The defenceless ship's boats and rafts attacked by the enemy-

underwent courses in gunnery, before the war, and there must be few seafaring men to-day who have not learnt to take their place in a gun's crew at need.

Large numbers of enemy aircraft have fallen to the guns of our merchant ships, manned by members of the crews, and the good work goes on, whenever the chance offers. Frequent practice—and grim experience—have made the men who handle them expert at their job, and the enemy, who once regarded any merchant ship as easy prey, now has a wholesome respect for the Service that has learned to hit back.

Perhaps it was German ruthlessness as much as anything that made our men so grimly determined to defend themselves. They have not forgotten what happened when they were defenceless and at the enemy's mercy. They have not forgotten the ships' boats and the rafts that have been deliberately and callously machine-gunned, or the men who have been shot while struggling in the water, or shelled while launching their



are not likely to be forgotten by our seamen. (Picture shows raider shot down.)
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boats. They are not likely to forget, these seamen of ours, who have always been the first to save an enemy's life as soon as he had acknowledged defeat, and who on countless occasions have picked up the crews of U-Boats and aircraft that have been destroyed in attempting to sink them.

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The defensive equipment of merchant ships goes far beyond guns.

To begin with, the men working the ship must be protected from attack while they continue with their jobs—the officers on the bridge, the look-outs, the steersmen, the engineers and greasers and firemen. So protection is provided for them, in steel and concrete structures which afford cover from machine-gun bullets and cannon shells and bomb splinters.

At the same time, other means of defence are provided, for remember always that the merchant ship's business is not to attack the enemy, but to bring her cargo safely to port as speedily as possible, and to avoid damage if she can. The stress is always on defence, not on attack.

Our towns and factories and harbours are defended by the familiar balloon barrages, which prevent enemy aircraft from coming in low over their targets to be certain of direct hits. Ships at sea have also their own balloon barrage, and very effective it has proved to be.

Two methods are in use—the kite and the kite-balloon.

Both are flown on wires from one of the ship's masts, and in every large port there is a naval officer whose job it is to supply, inspect, and overhaul the gear. Kites and balloons are flown at different heights as circumstances demand, and they have proved their effectiveness again and again.

Masters have become very skilful in making use of this

form of defence in order to worry an attacking aircraft, and prevent it from making its bombing run.

In the first place, although the kite or balloon itself may be easily spotted, the wire attaching it to the ship is practically

invisible, even at close range. bomber travelling at speed, even at the comparatively low speed of, say, a hundred and eighty knots, gives its pilot or observer little chance of detecting so thin a thread as this wire, which may be stretched almost taut or hanging in quite a loose bight. Not only that, but the bomber cannot tell from which mast the kite or balloon is flown, and so he dare not risk diving over the ship below the level of the kite or balloon itself.

He need only foul the wire with



A barrage barge hauling down her balloon.

any part of his aircraft in order to be certain to crash—as a number of enemy aircraft have crashed, when their pilots took the risk. As kites or balloons are fitted to practically all British and Allied ships, this form of defence has proved extremely effective.

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There are other ingenious devices that have been perfected from time to time, to afford the merchantman additional protection, and periodically new inventions are suggested, tried out, and, if practical, adopted. The result of all this work has been to make a bombing attack on an apparently harmless tramp or cargo ship a dangerous enterprise; and when ships sailing in convoy are all adequately equipped with defensive devices of these kinds, they can put up a very formidable opposition to the enemy raider. With kites and balloons flying, anti-aircraft guns manned, whole batteries of machine-guns ready to greet any close attack, and other traps prepared for the enemy, the modern convoy, with its escort of warships, can look after itself very efficiently, as the German is learning to his cost.

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One of the great difficulties of protecting ocean-going convoys and independent ships is the limited range of fighter aircraft.

Shore based fighters are ready day and night to take off instantly when word comes of enemy raiders approaching ships in coastal waters, and with their great speed, and with a smoothly working organisation that enables them to locate

the menaced ships immediately, they can be on the scene often in time to deal with the enemy.

But they have a very limited range. They cannot offer "air cover" at anything like the distance from their bases at which the enemy can threaten ocean-going ships.

One of the most ingenious and spectacular devices of the war has been produced to overcome this—the fighter aircraft catapulted from the foredeck of a ship.

It is a breath-taking business.

The fighter rests in the catapult, ready to be launched. The pilot climbs into the cockpit, starts up his engine, warms it up. He revvs-up, again and again; and then, when he is ready, he gives the signal, and opens the throttle. The aero-plane hurtles off, dipping a little, then zooming up to a steep climb.

One moment, the pilot is sitting quietly at his controls, in an aircraft that is quite stationary; the next, he is shooting through the air at nearly a hundred miles an hour, then the sea is just beneath him, and he has to do half a dozen things at once.

It takes nerve. It takes coolness, and complete confidence, and a clear brain, and instantaneous thought; and a second or so later the pilot's whole being is concentrated on the job in hand—to get the Hun before he can turn tail and escape.

These pilots, all youngsters, are specially selected for the work. They not only know what they have to do; they know the dangers they run: for they cannot land again on the parent ship.

At sea, they are on duty continuously, ready to take-off at a moment's notice.

On the approach of enemy aircraft, the already warmed-up engine is opened out, everybody is cleared from the forward part of the ship, and the officer in charge of the firing of the

catapult awaits the pilot's signal. A hand is raised, the trigger

is pressed, and off she goes, with a roar.

Once in the air, the fighter's job is to get his enemy without thought for himself. When he has done that—or has at any rate sent the bomber racing for home like a large dog with his tail between his legs fleeing from an aggressive terrier—he can think about what is to happen to himself..

He may be a thousand miles out in the Atlantic. He may have lost sight of the convoy, and be short of fuel. He may,

in fact, have some difficulty in making contact again.

If, however, he is within range of an aerodrome where he can land, he makes his own choice whether to attempt to reach

it or to be picked up by the convoy.

If he decides that he cannot make an aerodrome, there are two courses open to him. He can bring his plane down into the sea near one of the ships, or he can bale out and come down by parachute. In either case, the ship chosen to pick him up must be ready and on the look-out for him. She must know the drill perfectly, for, particularly in stormy seas, it is no easy matter.

If the pilot brings his plane down into the water, he will fly low over the ship, passing from stern to bows, and land a short distance ahead. He can then be rescued before the plane sinks. If this is not practicable, he has to bale out, and then he must rely on the ship's captain being able accurately to calculate his drift as he floats down with his parachute, so that the ship will arrive at the spot where he strikes the water almost as soon as he does so.

In either case, it means a very cold bath—and a very risky one. But these catapult-fighter pilots take it all as a matter of course.



"... a small vicious thing that hurtles past—a Hurricane!"

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Imagine a Focke-Wulf out on the hunt for a convoy to attack. They know the dangers—accurate anti-aircraft fire, a hail of machine-gun bullets when they close in. These are dangers they always reckon with. And besides, they have immense advantages. They can spot their victims long before they are themselves sighted. Over the Atlantic, there is sure to be excellent cloud cover, perhaps also haze, so that they can keep out of sight and make their attack suddenly, from close range, and be well away before any of the ships has time to open fire.

They spot a convoy. The crew is jubilant—twenty, forty, perhaps even eighty ships to choose from! And perfect cover for stalking, for getting close in before they need reveal themselves!

They approach, confidently. They come down low, deliberately selecting their first target, certain of achieving complete surprise. They dive to the attack. And at the same moment a stream of machine-gun bullets rips into the fuselage from above and behind, tears through the wings, smashes, kills. A momentary glimpse of a small, vicious thing that hurtles past at tremendous speed—a Hurricane! Perhaps a

momentary astounded wonder—how did it get there? How could it get there, a thousand miles from the nearest aerodrome? And then headlong into the sea, with this puzzle unsolved, while the Hurricane pilot, with a victory roll over the ships he has saved from attack, calmly decides how they are to save him from the sea when he reaches it.

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So the Merchant Service fights back—and the Royal Air Force as well as the Royal Navy helps in the good work.



THE END

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