

# Salvage Lessens U-Boat Toll

## Raising of Many Sunken Ships by England Helps to Defeat the German Submarine Campaign

**B**UILDING new ships to replace losses is not the only way to defeat the German submarine campaign. Saving ships that have been damaged, lifting those, even, that have been sunk, and restoring them to seagoing condition, are among the methods which have gradually been improved in England as the stringency of the shipping shortage became greater each month. The reason why the British authorities were not fully equipped to raise every ship that was sunk from the very start of the war is purely commercial. Salvaging ships costs money. Building new ones costs money. So long as the cost of salvaging was equal or even slightly in excess of the cost of building, so long it was not worth the while of owners to order salvage operations—just so long were invention and progress in the art of salvage delayed. When the salvaging of ships became urgent in the course of 1916 inventors of new appliances and new methods, salvage experts of many years standing, set their brains to work, and the result is that today ships can be raised and repaired from positions that two years ago would have been abandoned as hopeless.

As showing how need stimulates invention, I may instance a discovery in chemistry which has proved to be of the utmost value in salvage work, writes H. C. Ferraby in Country Life. It is obvious that when a ship, laden with grain, beef, or other perishable stuffs, gets water-logged with seawater, something very unpleasant is going to happen to her cargo. In point of fact, it turns into a miniature poison-gas factory. Grain produces sulphuretted hydrogen, and the salvage men who stumble on a pocket of that in a beached ship would be seized with violent sickness, would be partially blinded for some time, and would turn a dull leaden color in the face. Experiment brought an antidote to this trouble, and now the cargo of a ship that is to be salvaged can be sprayed with a special solution as soon as there is any reason to suspect poison gas. This spraying removes all danger.

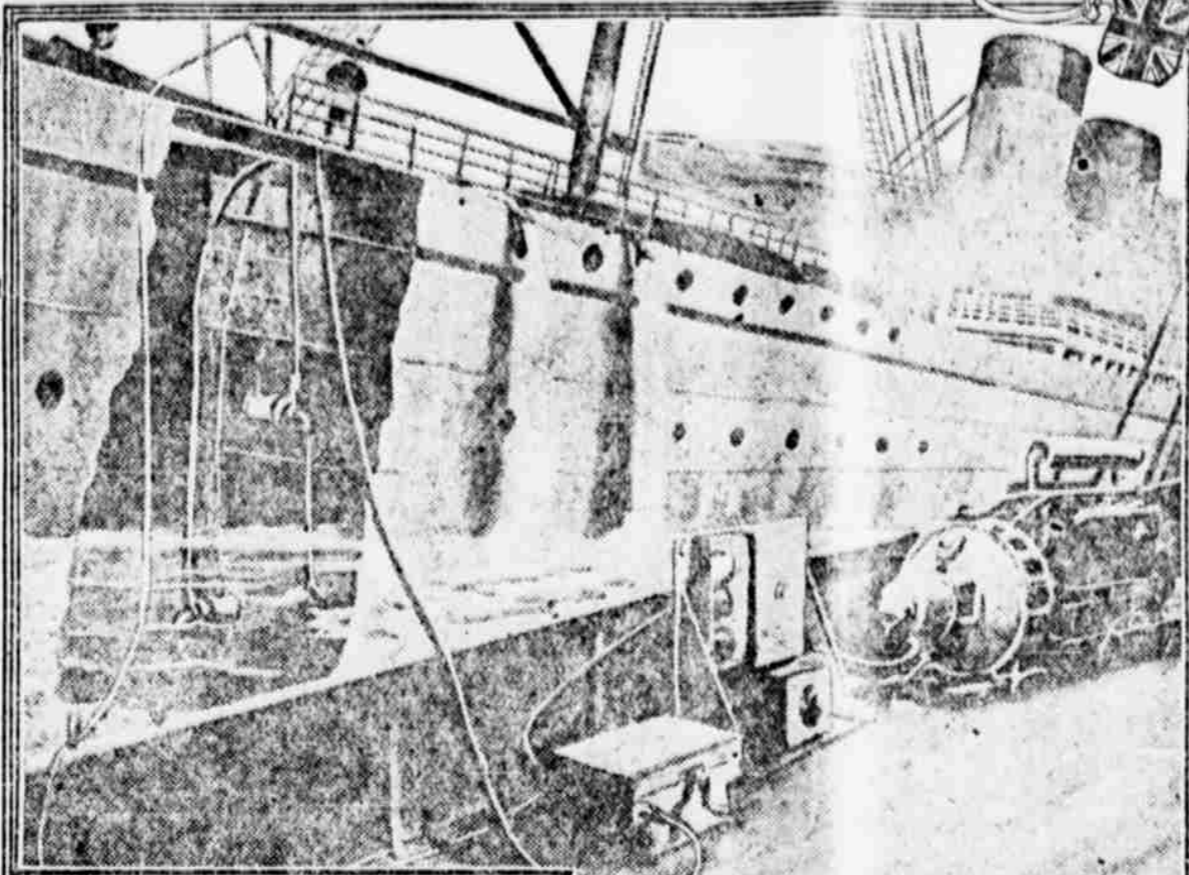
Salvage work before the war was purely a private enterprise. The admiralty had no salvage branch, and when warships went ashore or were beached after collision the private firms, like the Liverpool Salvage Association, were called in. War altered that, like many other things in the maritime world, and today the whole of the salvage work around the United Kingdom is carried out by an admiralty department. But since the men manning that department are, without exception, the former heads of the salvage business, the difference is mainly in titles and not in methods.

Warship salvaging is confidential, and the work done by the department in this direction cannot be described. Its share in keeping the allies supplied with merchant ships, however, is not secret, and the record of work done since October, 1915, is an excellent one. Down to the end of 1917 the admiralty salvage section, under the guidance of Capt. F. W. Young, had rescued 230 wrecked, mined or torpedoed ships and sent them in for repairs. All that time their experience was growing. New material was being built for the work, new ideas were being put into practical shape, and the result is that the year 1918 has so far seen a remarkable increase in the number of ships saved. The figures for the early part of this year are: January, 14; February, 41; March, 37; April, 36; May, 19; giving a total of 147. Thus in 32 months 497 ships have been restored to the world's mercantile tonnage. The Germans count all these and some of them twice over, in their calculations of the tonnage loss inflicted on the allies by the submarine campaign.

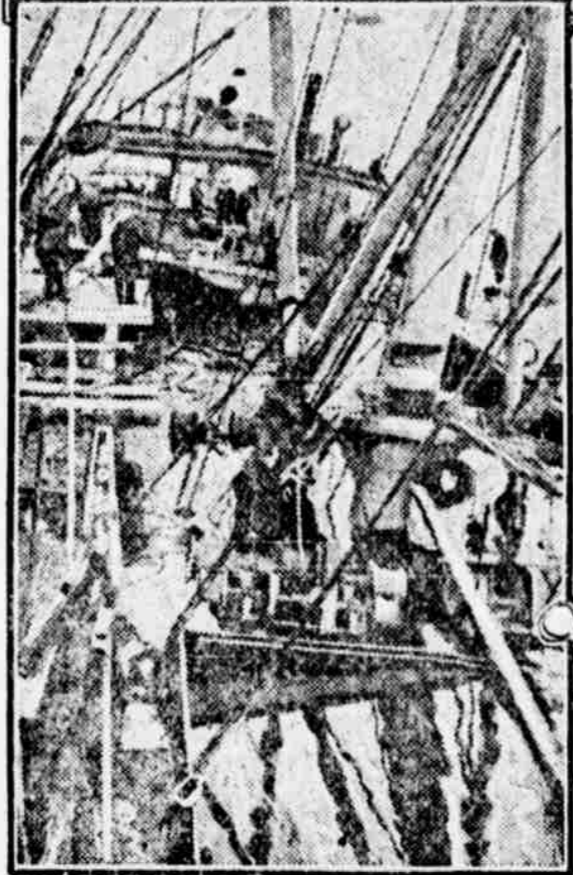
Every salvage man will tell you that the only thing certain about it is that you never know what is going to happen. A ship may be ashore in the simplest position, with just one big hole in her to be patched up, and it looks like a job that will take a few days. In the end you are, perhaps, six months hanging around with that one ship before you can get her to float. Weather, tides and the condition of the cargo all play a leading part in the work. The only thing the salvage man has got to do all the time is to be patient. That, perhaps, is why they all look so tired. Waiting is a weary business.

The weather is the worst enemy of salvage men. It is very nice on a fine summer's day to stand on the cliffs and look down at the busy humming workshops that we call salvage steamers clustered round a wreck that shines red with rust in the sunlight. The motors of the pumps drone incessantly, and the great 12-inch pipes send out cascades of gray water whose stale scent travels far before it is lost. The metal-helmeted divers clamber up and down, sitting for a while in the sun to make report of their progress below, receiving orders for the next stage, or just resting. It is different when the southwesterly gales blow, when rollers pour in from the Atlantic and pound down like Nansmyth hammers on the decks of the wreck. The salvage boats and tugs all have to run for shelter, work has to be abandoned, and only the still, silent hulk is left to weather the storm. So long as she is firmly imbedded in the sand or shingle, however, and there is plenty of water inside her as well as outside, it takes a good many months of storms to knock a ship to pieces. It is often necessary, in order to save a wreck from the effects of weather, to flood compartments in her that had remained watertight.

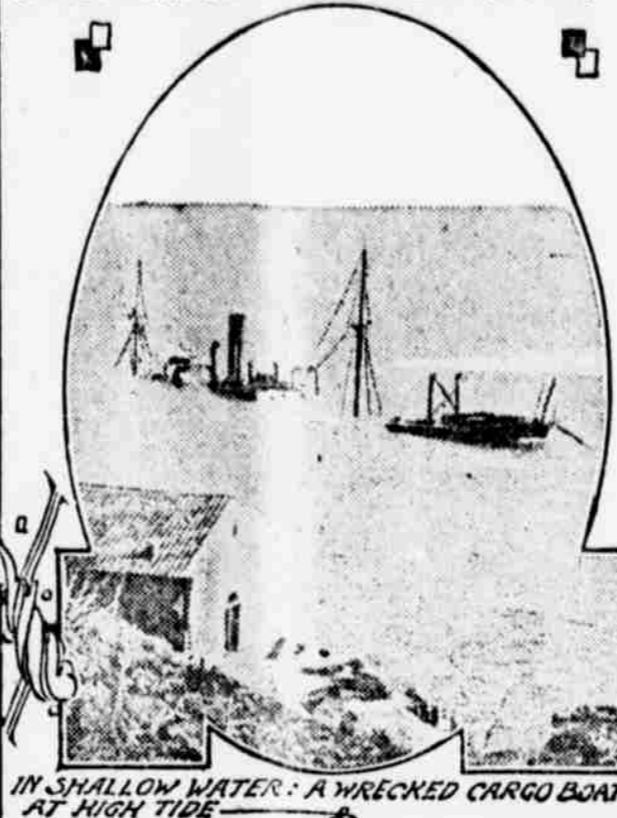
The problem of dealing with the water in wrecks and in ships that have been holed but are still afloat has been advanced very far toward solution during the war by the general adoption of a new British invention, which has been described as a miracle of modern electrical engineering. Described simply, it is an electrically driven pump which can be entirely submerged and will still pump as efficiently as if it were above water. The submersible pump, as it is called, does things that no one ever believed a pump could do. I saw one in the hold of a wreck recently, covered with a black, evil-smell-



THE SUBMERSIBLE ELECTRIC PUMP AT WORK



SALVAGE WORK AT LOW TIDE



IN SHALLOW WATER: A WRECKED CARGO BOAT AT HIGH TIDE

ing ooze, looking for all the world like a bit of wreckage itself. But it had just finished a long bout of pumping under water in that hold, which was filled with floating barrels, beams, tangled ironwork and a sludge that was indescribable; and when it had been put over the side and had pumped a few tons of clean sea water through itself, that pump was ready to start work again anywhere.

The secret of the pump is that it is not water-tight—which sounds absurd. It is, however, perfectly true that the water can flow in and around the whole of the works of the pump while it is at work. No one has ever hitherto succeeded in raising electricity work under water in this way; but the uses of the discovery are plain even to the layman. A ship fitted with these pumps, for example, ought never to sink, if she has enough of them on board, because they can be set to work in the flooded compartments and pump the water out as fast as it comes in. Damage to the engine rooms does not affect the pumps, because they do not rely for their current on the ship's dynamos, but on their own portable outfit.

Salvage experts tell one rather amusing tale of the versatility of the pumps. A fire broke out in the hold of a ship that was carrying a very valuable inflammable cargo. Two submersible pumps were on board, and the captain slung them over the side into the sea, attached a good length of hose to them and set them going to pump water at the rate of about 350 tons an hour each into the burning hold. They soon put the fire out, and the captain then lowered the pumps into the hold and made them pump out the water they had previously pumped in.

## INTRICATE WEAPON

Back of the torpedo is its fish-shaped body, containing all the machinery to drive and steer after it has been launched. From forward aft we find compartments as follows: A compressed air reservoir, an immersion or balance chamber, engine space and a buoyancy chamber. The tiny engine is driven by compressed air, which is compressed to a high degree, and it rotates the propellers whereby the projectile is carried through the water. The immersion or balance chamber provides the means of maintaining the depth at which the torpedo shall travel through the water after being launched. In the engine chamber there is also the device for keeping the projectile to its designated path during its travel. This is achieved by means of a gyroscope. The buoyancy chamber, which is placed aft of the engine chamber, is virtually a vacuum. Without this chamber the torpedo would sink. The propellers and rudders are astern and outside the torpedo's body.

## WONDERFUL RESEMBLANCE.

Dion Bouicault, the actor-dramatist, was the very image of Sir Kenelm Digby, the seventeenth-century philosopher. Douglas Jerrold and Montgomerie, the inventor of balloons, might have passed as twin brothers. Montagu Williams had only to don a black periwig to become a perfect double of Charles II as depicted by Sir Peter Leely. The likeness between Byron and J. L. Motley, the historian of the Dutch republic, was described by the poet's widow as "most wonderful."

Charles MacFarlane in his "Reminiscences of a Literary Life," describes how, in 1820, he met Shelley in the Royal Bourbon museum, Naples, and showed him a statue of Agrippina, the mother

of Nero. "I told him that the Bonaparte family considered this the very image of their mother. When Madame Mere was in Naples, her daughter, Queen Caroline, induced her to sit by the statue, and made a large party remark on the striking resemblance."

There are, first of all, the rescue tugs. These proceed to any ship that is in distress, whatever the cause, and endeavor to tow her into port, or at least to get her into shallow water, where she can go aground or even sink and still be salvable. In the latter case the second part of the section's work begins—the patching up, emptying and lifting. This may take anything from six weeks to six months. When she is lifted and afloat again she is towed to the nearest sheltered anchorage, and there temporary repairs are effected, she is cleaned up inside and her engine-room restored to something like order. It is the aim, as far as possible, to enable her to proceed to a shipyard under her own steam.

There are cases, of course, where the torpedo or the mine has exploded just by the engine-room and blown everything to fragments. Then the hull, patched up, has to be towed to the repairing yard; but in the majority of cases the damage is in the bows or in the stern, and the vessel can limp along by herself after first aid from the salvage section.

British salvage experts have little hope of salvaging any of the ships that are down in deep water. The physical limitations of divers alone would make it an impossibility to raise, for example, the Lusitania, and, so far, no mechanical devices that have been suggested or made hold out any hope of doing the work of the diver with any success.

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## GREAT PLAY NEVER PRODUCED.

Gen. Lew Wallace wrote a tragedy entitled "Commodus," which was founded on the story of Maternus, an escaped slave, who rebelled against his country, placed himself at the head of a band of outlaws, planned the capture of Rome and his own elevation to the throne, but was finally betrayed and killed. It was never produced, but Lawrence Barrett, to whom it was submitted, wrote General Wallace that it was the best play since "Richelleu," and that "both as a poem and as an acting play 'Commodus' is the best English drama." It was printed, but never staged.—Boston Globe.

## UP, SEE, UP.

"It's just dawned on me why those trapeze performers are such funny fellers," said the manager of the city house. "Well, why is it, ole Smart Alec," asked the sheriff of the town. "Why, cause the dern cusses is allers actin' up."

## FAIR TREATMENT.

A beautiful young lady approached the ticket window, and in a voice like the rippling of a brook asked the clerk: "What is the fare to the fair?" To which the clerk replied: "Same as to the homely, madam."

## EMPLOYERS HAVE DUTY

### SHOULD HELP IN WORK OF CLASSIFYING THE NEW REGISTRANTS.

Pointing out the duty of employers of labor in assuming a proper share of responsibility for the classification of new registrants under the selective service act, a communication from Provost Marshal General Crowder has been made public. The points emphasized are as follows:

I have noticed, in the general expressions of the public attitude which reach this office, two frequent features which lead me to the present comments. One of these features is the belief that the process of awarding deferred classification to a registrant requires merely the filling out of the questionnaire, and that the selective service boards will perceive the propriety of making the deferment, without the assistance furnished by the registrant's formal claim indicating the deferment desired. The other feature is the employer's failure to realize his responsibility to intervene in aiding the board's determination, and therefore to inform himself fully on all the considerations which should affect the decision as to deferment.

1. As to the first mentioned belief, it must be pointed out that if it were universally acted upon, the process of classification would be seriously hampered and delayed. Someone must indicate that the individual case is one which should arrest the special attention of the boards in respect to the registrant's occupational status. The boards do not possess a superhuman omniscience.

### Boards Will Make Examination.

The boards will do all that they possibly can, on their own initiative, to reach a just decision by a complete examination of the questionnaire, even where no claim is expressly made. A registrant is therefore at liberty, if he sees fit, to trust to the scrutiny of the boards to discover the necessity for his deferment.

Nevertheless, the boards will welcome and will need all the aid that can be furnished by the indication of a claim made for deferment.

2. Why should the employer, or other third person, in such cases, make the claim? Because the employer in this situation represents the nation, because (in the statutory phrase) "the maintenance of the military establishment or of national interest during the emergency" requires that some well-advised third person should look after that national interest, which the registrant himself may not have sufficiently considered.

It is often forgotten that the selective draft is only one element in the depletion of a particular industry's man-power. A second and large element is found in the voluntary withdrawals for enlistment; how large this is may be seen from the circumstance that the total inductions by draft have reached some 2,000,000, while the total enlistments in army and navy amount to some 1,400,000—nearly three-quarters as many. A third element, very large, but unknown as to its precise extent, has been the transfer of labor power from one industry to another, namely, into the distinctively war industries offering the inducements of higher wages. How relatively small, in actual effect, has been the effect of the selective draft is seen in the fact that, for all the occupations represented in the 8,700,000 classified registrants of January, 1918, the percentage of the entire industrial population represented by the class 1 registrants amounted to only 6 per cent. It ran as low as 3 per cent for some occupations, and correspondingly higher for some other occupations; but the national average was only 6 per cent. Any notably larger depletion in particular industries must therefore have been due, partly to enlistments, and in probably greater degree, to voluntary transfers into other industries.

### Must Remember Nation's Needs.

These other influences are therefore to be kept in mind by employers and others, in weighing the question whether or not the best solution, in the national interest, is to ask for the deferment of individuals or groups of men. Such deferments may assist the immediate situation in the particular establishment; but they merely force the army and the navy to seek elsewhere for the same number of men thus deferred. The quantitative needs of the military forces are known and imperative; and any given quantity of deferments will ultimately have to be made up by the depletion of some other occupation. Thus it becomes the employer's duty to consider those aspects of deferment, in seeking that solution of his own problem which best comports with the national interest.

The keynote of purpose for all of us ought to be, and I am sure will be, that wise and profoundly significant phrase in the act of congress under which we operate, "the maintenance of the military establishment or of the effective operation of the military forces or of the maintenance of national interest during the emergency."

### New York's Systematic Growth.

A remarkable forecast of population of New York is brought to light in copies of the Scientific American for September 8, 1920. A statistician for the annual of the common council shows the population of the city to increase until 1965 would have made the population of New York 5,257,493, a figure almost in accord with the census of that time.

### Optimistic Thought.

When one science is learned others become easy.

## Suffered For Years

### Back and Kidneys Were in Bad Shape, But Doan's Removed all the Trouble.

"My kidneys were so weak that the least cold I caught would affect them and start my back aching until I could hardly endure the misery," says Mrs. D. C. Ross, 973 Fulton St., Brooklyn, N. Y. "In the morning when I first got up, my back was so lame, I could hardly bend over and any move sent darts of pain through my kidneys. It was hard for me to walk up stairs or stoop, and to move while lying down sent darts of pain through me."



"The kidney secret. MRS. ROSS' conditions were scanty and distressing and the water remained in my system, making my feet and hands swell. There were dark circles under my eyes and I became so dizzy I could hardly see. I had rheumatic pains in my knees and it was all I could do to get around. For years I was in that shape and I wore plaster and used all kinds of medicine to no avail until I tried Doan's Kidney Pills. They gave me of the trouble and strengthened my back and kidneys. When I have taken Doan's since, they have always benefited me."

Sworn to before me.

L. N. VAUGHAN, Notary Public.

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Sample each free of Cuticura, Soap, S. S. Cuticura.

## GRAND, GLORIOUS FEELING

### Moment in the Life of an Aviator That Makes Up for Much He Has Endured.

When you have been on patrol a long way behind the enemy lines, shooting up towns and camps and railway trains like a pack of aerial cowboys; when, on your way home, you have deliberately disobeyed orders and looted a long way behind the other members of your group in order to watch the pretty sunset; and as a punishment for this esthetic indulgence have been overtaken by darkness and compelled to land in strange country, only to have your machine immediately surrounded by German soldiers; then, having taken the desperate resolve that they shall not have possession of your old battle-scarred avion as well as of your person, when you are about to touch a match to it, if the light glitters on a long French bayonet and you learn that the German soldiers have been prisoners since the battle of the Somme, and have just finished their day's work at harvesting beets to be used in making sugar for French politics—ah, isn't it a grand and glorious feeling?

To which I would reply, "Mais oui, mon vieux! Mais oui!"—James N. Hall, in July Atlantic.

No Trifler.  
"Too many of you farmers make a practice of coming to town to whittle and yawn," said the hypercritical tourist.

"Mebby some do, but I don't," replied Gap Johnson of Rumpus Ridge, Ark. "I can do that at home without being bothered. I don't come to town, skurrily ever, unless I've got something right important on hand, like being drug in by the grand jury, or to hear whay's new in politics, or to talk horse swag, or something that-a-way."—Kansas City Star.

Vagabonds have no coupons attached and are irredeemable.

Success is the one crime that some folks refuse to forgive in their friends.



## I'LL TAKE POSTUM!

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