## VICTORY AT

By ADMIRAL WILLIAM SOWDEN SIMS





Submarines Spent Most of Their Time on Surface —Submerged Only When They Saw Merchant same areas as the patrol vessels, and were only occasionally inconvenienced by having to keep under the water | ing headlights, made terrific lunges its counting tower and deck exposed. Ship or Patroling Craft-Oil Engine used on Surface and Electric Engine Used When Submerged.

y in the Atlantic trade routes, they merchant ship or escape an enemy. raveled practically all the time on Almost the greatest tragedy in the weeks during which they cruised face enemy—auch as a destroyer— round looking for their victims, they when its electric batteries are ex-lso spent almost entirely on the sur-

mly in those crises when the submar-, to remain under the water for the ne either had to escape a vessel maximum period. which was stronger than itself or planned to attack one which was Germans Safe on the Surface.

ion of the total period consumed in ly accepted meaning of that term. Yet cruise. Yet the fact that the subma- the fact that this vessel remained for a precisely the reason why it was advantage, so long as it was called bliged to spend the larger part of upon to contend only with surface to time on the surface.

Two Sets of Engines. which makes no inroads on the oxy-surface could detect the patrolling gen needed for sustaining the life of vessel long before it could be obts crew. But the physical limitation served itself. All the submarine has of size prevents the submarine from to do therefore, whenever the de-

The popular mind, in its attitude which is only another way of saying oward this new type of craft, is still that its cruising radius under the waso much under the spell of Jules | ter is extremely small, not more than erne. There is still the disposition fifty or sixty miles. In order to relook upon the submarine as an in- charge these batteries and gain moidious vessel which spends practical-tive power for sub-surface travel, the y all of its time under the water, submarine has to come to the surface stealthily slinks along, never once be- Yet the simple fact that the subraying its presence, creeps up at will marine can accomplish its destructive o its enemy and discharges its tor- work only when submerged, and that edo. Yet the description which it can avoid its enemy only by divhese pages have already given of its ing, makes it plain that it must alsperations shows the falsity of this ways hold itself in readiness to submerge on a moment's notice and re-It is important that we should keep main under water the longest possi-constantly in mind the fact that the ble time. That is, its storage batabmarine is only occasionally a sub- teries must always be kept at their marine; and that for the greater part highest efficiency; they must not be of its career it is a surface boat. In wasted by unnecessary traveling unthe long journeys which the German der water; the submarine, in other U-boats made from the Heligoland words, must spend all its time on the Bight around Scotland and Ireland surface, except those brief periods to those great hunting grounds which when it is attempting to attack a

can stay submerged only when it is There were virtually only two cir- in motion, unless it is in water shoal umstances which compelled them to enough to permit it to rest on the lisappear beneath the waves. The bottom. Even though it may have rat of these was the occasion on a little electricity, and succeed in getwhich the submarine detected a mer-hant ship; in this case it submerg-long, for its electric power will soon d, for the success of its attempt be used up, and therefore, it is soon torpedo depended entirely upon faced with the alternative of coming ts operating unseen. The second oc-to the surface and surrendering, or of being destroyed. The success of submerge was when it spied a des-thesubmarine, indeed its very existover or other dangerous patrolling ence, depends upon the vessel spendcraft; the submarine, as has been ing the largest possible part of its aid, could not fight a vessel of this time upon the surface, keeping its ype with much chance of success. full supply of electric power con-Thus the ability to submerge was stantly in reserve, so that it may be merely a quality that was utilized able to dive at a moment's notice and

This purely mechanical limitation The time taken up by these disap- explains why the German submarine parances amounted to only a frac- was not a submarine in the popularine had to keep itself momentarily the greater part of its existence on eady to make these disappearances the surface was no particular disvessels. Even with the larger part of its decks exposed the U-boat was The submarine has two sets of envast expanse of the sea. I have alines, one for surface travel and the ready made clear the great disadvanther for sub-surface travel. An oil tage under which destroyers and othengine propels it on the top of the er patrolling vessels labored in their water, but this consumes a large attempts to "hunt' this type of eneamount of air, and for this reason, my. A destroyer, small as it is, was t cannot be used when travelling un- an immensely larger object than the ler the surface. As soon as the ves- underwater boat, and the conseel dives, therefore, it changes its quence was that the lookout on a notive power to an electric engine, submarine, proceeding along on the

to seek safety under water, remain there until its pursuer had passed out of sight and then rise again and resume its operations.

other; a combat under these condi- der the water, for they were not com- whereas the Allied submarine, when rine received that same treatment tions would resemble a prize fight be- pelled to economize electric power so on its hunting grounds, spent all of which it was itself administering to tween two blindfolded pugilists. strictly. This gave them a greater the daylight hours under water, with harmless merchantmen; it was tor-Neither would such vessels fight upon advantage in hunting the U-boats. only the periscope visible from time pedoed without warning; inasmuch, the surface, for, even though they British and American submarines to time for a few seconds. Just as however, as it was itself a belligerent were suplied with guns — things could fully charge their batteries, the German U-boat could "spot" an vessel, the proceeding violated no which did not figure in the early de- drop under water and cruise around Allied destroyer at a great distance principle of international law. signs of submarines—one boat could with enough speed to maintain a hor- without being itself seen, so could The Allied submarines, like many decline the combat simply by sub- izontal position at "periscope depth" the periscope invariably see the Ger- other patrol craft, spent much of that is, a depth just sufficient to en- man submarine on the surface long their time in those restricted waters Before the adoption of the convoy In the minds of Fulton and Hol- able them to project the periscope before this tiny object came within which formed the entrances to the system, when the Allied navies were land an engagement between such above the water whenever desired. the view of a U-boat conning tower. British Isles. Their favorite places

depending chiefly upon the patrol craft would reduce itself to mutual This speed was so very slow-about Our submarine commander could re- were the English Channel, St. that is, sending destroyers and other attempts to ram each other under the one mile an hour-that it could be main submerged, sweep the ocean George's Channel, which forms the surface craft out upon the high seas | water, and many fanciful pictures of | kept up an entire day without ex- | with his periscope until he picked up | southern entrance to the Irish Sea, to hunt for the enemy—the enemy the early days portrayed exciting hausting the electric batteries.

the German enemy; then, still under and the northern passageway be sumarines frequently operated in the deep sea battles of this kind in which The net result was this: The Gerwan enemy; then, still under and the northern passageway be water, and almost invariably unseen, tween Scotland and Ireland. At these corted, or unescerted inadequately. while on their way to join a convoy or to their destinations after the dispersal of a convoy; these areas were thus almost the only places where the German submarines had much chance of attacking single vessels. The territory was divided into squares, each one of which was indicated by a letter; and the section assigned to each submarine was known as its "billet." Under ordinary circumstances, the Allied submarine spent all its time, while patrolling, on its awn particular "billet"; only in case the pursuit of an enemy led it outside the "square," was it permissible to leave. Allied submarines also hunted the U-boats in the North Sea on the routes which the latter had to take in coming out or returning through the passages in the German mine fields of the Heligoland Bight, or through the Skag-

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The wise contractor will always be careful to provide a comfortable parking ground for his workmen's A fat kitchen has poverty for a

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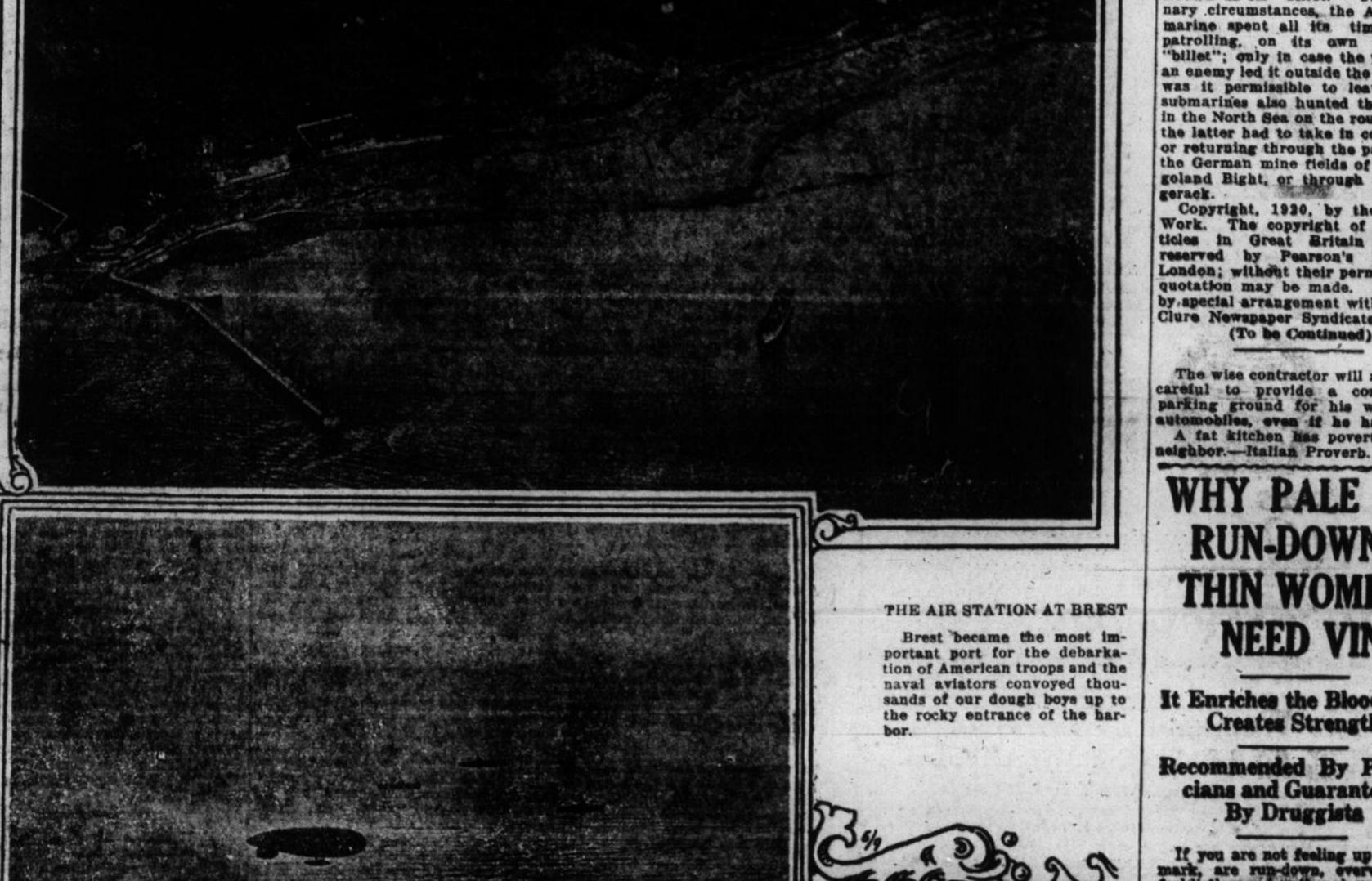
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A "BLIMP" PATROLLING In company with three subchasers, "Blimps" and airplanes convoyed a large percentage of the merchant and troop ships when they were within reasonable distance of land.

submarine it could steam submerged, stealthy attacks which it was conput up a periscope which would re- stantly meditating agaist surface veal everything within the radius of craft. a wide horizon and that, when it had another point of the highest impicked up an enemy submarine, it portance is that in a conflict of subcould approach rapidly under the wa- marine against submarine the Allied ter, and discharge a torpedo. It is boats had one great advantage over this would have deprived the German tiner and Moraht and other U-boat of the only advantage which it pos- commanders, as already explained, ability to make itself unseen.

The U-Boat's Big Advantage.

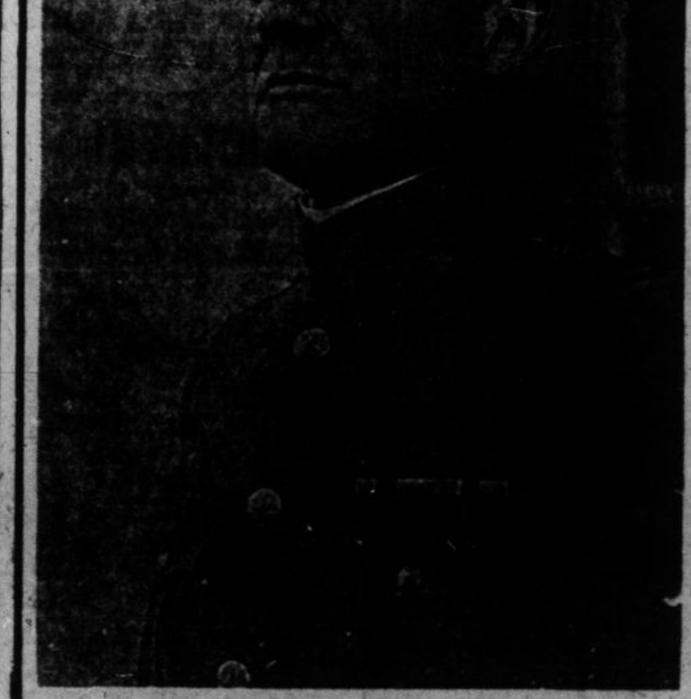
the German submarine.

that the underwater vessel could not tending to that very essential detail. fight its own kind, it is evident that Occasionally, indeed, our submarthey had not themselves foreseen the ines were attacked by our own desways in which their inventions were troyers, but accidents of this kind to be used. They conceived of their were not numerous enough to intercraft as ships that would sail the fere with the operation I have in larger part of the time under the mind. waves, coming up only ocacsionally The statement seems almost like a to get their bearings and to take in a contradiction in terms, yet it is enfresh supply of air. It was plain to tirely true, that simply because the

carrying large storage batteries, stroyer appeared on the horzon, was to conceal their presence. But let jat each other. None of the inventus imagine that the destroyer, in ad- ors foresaw that, in such battles as dition to its depth charges, its tor- would actually take place, the tor-pedoes, its guns, and its ability to pedo would be used, and that the subram, had still another quality. Sup- marine which was defeated would pose, for a moment, that, like the succump to one of those same

> evident that such a manoeuvre as the German. Hans Rose and Valensessed over all other war craft-its had to spend most of their time on the surface in order to keep their batteries fuly supplied with electricity, in readiness for the dives that No destroyer can accomplish any would be necessary when the Allied such magical feat as this; indeed destroyers approached. But the Althere is only kind of vessel that can, lied submarine commander did not and that is another submarine. This have to maintain this constant readiillustration immediately makes it ness; the reason it is hardly necessaclear why the Allied submarine itself ry to say, is that the Allied submarwas the most destructive enemy of | ine had no surface enemies, for there were no German surface craft oper-When Robert Fulton, John P. Hol- ating on the high seas; the Grand land and other authorities declared Fleet at Scapa Flow was carefully at-

these pioneers that vessels which spent all their time submerged could not fight each other, for the sufficient reason that they could not see each a considerable part of their time un-



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