

# Are Zeebrugge U-Boats Really Bottled Up?

## Daring British Attempt Faced a Magnitude of Difficulties, Chief of Which Were Nature's Powers—Similarity to Civil War Blockade Is Striking

By ROBERT G. SKERRETT.

**H**AS history repeated itself at Zeebrugge? Have the British duplicated in a degree the blockading efforts made by the United States naval forces to wall in certain of the Southern ports and waterways during the civil war? Can the gallant work done by our allies be expected to produce any enduring results in the direction of bottling up the Kaiser's U-boats?

The whole story of just what happened at Zeebrugge and the way the attack was brought to a climax has not yet been told, although we have been informed of enough of the details to thrill any but the hopelessly phlegmatic. The undertaking was a daring one, and powerful as the forces were that were brought to bear against the enemy their successful performance in the fullest measure of intent hinged in the main on the set of a springtime breeze.

### Relied on Great Smoke Screen.

The attackers relied primarily on the camouflage of a smoke screen to enable them to reach unobserved their objective, and then, with the ships within a few hundred yards of the U-boat gateway, their concluding manœuvres were to be made certain through pyrotechnics. The plan of the undertaking was elaborated with much skill and the services of a fireworks specialist were recruited so that the sky might be lighted and the foe dazzled by a rain of brilliant rockets. With their preparations all made it was needful for the flotilla to postpone its advance several times until the wind blew in from the North Sea toward Zeebrugge.

Then Vice-Admiral Keyes ordered the attack, and swiftly moving motor launches and other light draft craft steered eastward spreading before them a dense cloud of smoke which mingled with the prevailing fog.

So far so good, and veiled by this barrage the cruiser *Vindictive* and her smaller consorts, the *Iris* and *Daffodil*, made directly for the outer side of the protecting mole which sweeps northward from the shore like the blade of a titanic sickle. At the same time two old submarines strove to reach the seaward side of this breakwater and their ultimate objective, that section where the structure rests upon pilings and not a masonry wall, which they were to blow into smithereens so as to isolate any defenders on the breakwater.

With the distraction which the *Vindictive* and her lesser associates were counted

upon to produce, it was expected that the cement laden cruisers *Thetis*, *Intrepid* and *Iphigenia* would be able to slip into the harbor unopposed and go on directly to the entrance of the Bruges Canal, where their commanders were to sink them in a manner which would effectually block that waterway as a means of egress for the foe's submarines. But nature, which had favored the enterprise up to the time that the *Vindictive*, *Daffodil* and *Iris* arrived close to their appointed stations, altered the whole prospect by shifting the wind from west to east, so that the air currents moved from the land, thus driving westward the fog and particularly the smoke screen which was to conceal the blocking ships.

The *Thetis*, which led the procession, was unable to hold to the channel, probably because the people on her bridge were blinded by searchlights, and she went aground and was sunk some hundreds of yards short of her intended destination. The *Iphigenia* was confused by the smoke pouring from the funnels of the grounded *Thetis*, and more by good luck than deliberation, ran into a harbor dredge and happily drove the cumbersome craft before her in between the jetties flanking the mouth of the canal, while the *Intrepid*, manœuvred skilfully and without hurry, was placed nearly athwart the channel immediately in front of the canal entrance and there sunk.

It has been reported that the wrecks of the *Iphigenia* and *Intrepid* form a V-shaped obstruction in the line of the regular channel, and therefore it is speculatively assumed that they effectually interfere with the passage in or out of U-boats. We also know that at least one of the submarines reached its goal and blew a great gap in the timber supported section of the mole.

### Analyzing the Full Effect.

With these facts available, we have material that will help us to analyze the probable hydrographic effects on the harbor of Zeebrugge, particularly so far as that port is likely to continue to be a haven for German submarines and therefore a menace to the shipping of the Entente allies as well as our own.

To begin with, let us understand both the natural and the artificial conditions that prevail at that point on the Belgian coast. The mole or breakwater runs seaward from the shore at a point one-quarter of a mile westward from the entrance of the Bruges Canal, which it is designed to protect. This barrier opposes its convex side to the west and has a gen-

eral breadth of 240 feet and a total length of one and three-tenths miles. The outermost tip of the mole lies 1,350 yards northeastward of the entrance of the Bruges Canal, and the roadstead, which is sheltered from gales blowing from north to west, has an area of 300 acres. Mooring accommodations on the inner side of the breakwater have a reach of 5,150 feet, and the depth of water alongside of this curving quay varies from 26 to 32 feet at low water during spring tides.

On the Belgian coast tidal streams run generally parallel with the shore line, and the eastward going movement is normally notably stronger than the westward bound sweep—hence the particular form and position of the mole. The logical consequence of this arrangement is for the more vigorous east going tidal streams to act something like a siphon across the outermost limits of the harbor channel and, therefore, to tend to withdraw, rather than to deposit, sand within the confined area.

### Why the Pilework Is Used.

To emphasize or to increase this action the masonry part of the mole is interrupted at a point 250 yards from the coast and there substituted by pilework for a span of 328 yards. The purpose of this arrangement is to provide a passageway for the sea water entering and leaving the harbor; and this relatively narrowed channel tends to accelerate the current and, accordingly, to scour the channel lying within and commonly parallel with the breakwater. This action is intensified by the range of even normal tides, which rise and fall from 12 to 15 feet, and of course are further affected by strong winds; northwest winds tend to raise the level, while an easterly blow drives the water away from the Belgian coast.

Now as to the canal itself and its vital gateway which the British sought to seal by sinking the three cruisers laden with cement. The approach from the roadstead at Zeebrugge to the prime or sea lock has a width of 565 feet at the sea wall end, and flares out with a small lighthouse surmounting each of its two flanking bulkheads. The sea lock lies a half mile inland, and up to that point the depth of water is regulated by the tide. With the lock closed the level of the canal is generally independent of that of the sea, especially during the ebb or low tide. The difference in height may then be twelve feet and more. This fact is significant and may easily be

made to play an important part in offsetting or neutralizing the obstructive efforts of the British.

To make this point plain it should be recalled that at the Ostend terminal of the Bruges Canal there are two basins—the Leopold Basin and the Bassin de Chasse, of which the latter has a water area of 210 acres. The fundamental purpose of these two basins is to confine water which is permitted to fill them at high tide, and then to free it suddenly several times a week at low tide so that the outrushing torrent will sweep away any sand which might accumulate at the harbor mouth.

So far as particulars are available there seems to be no reason why a similar procedure might not be employed at Zeebrugge by using all of the canal inland from the sea lock as a reservoir.

If the blocking ships are disposed in the form of a great letter V, but with a space of something like thirty feet between them at the point where they come closest, this would constitute a funnel or sluiceway which would increase the speed of the outrushing current and thus dredge away a passage, if one does not now exist, wide enough and deep enough to allow submarines to issue from or to reenter the canal.

### Main Entrance May Fill Up.

It may be argued that the main entrance to the harbor is apt to fill up or become too shallow for the arrival and departure of submarines all because one of the British underwater craft destroyed a part of the pilework of the mole, and therefore probably blocked the erstwhile currents at that point. This assumption is rather speculative and probably unwarranted.

Let us make this clear. If the British submarine failed to obstruct entirely the passage of water between the pilework, which is unlikely considering the fact that a stretch of 328 yards would be involved, then the sea sweeping east and west through the remaining pilework would quickly dig out a compensating path of ample depth to accommodate the volume of the original flow. That is to say, the passage would be narrower and deeper than before, but the total movement would probably suffice to maintain the channel free from sand at the harbor mouth abreast the outermost tip of the mole.

The circumstances at Zeebrugge bear in some respects a close resemblance to the conditions confronting the Federal

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## Psychic Research Last Stand of Superstition

By DR. LEONARD K. HIRSHBERG.

**A** CAREFUL study of a spiritualistic medium has been completed by Prof. G. Stanley Hall, head of the department of psychology of Clark University. Ten years or so ago, before Sigmund Freud was taken seriously by psychologists, Prof. Hall helped to expose many "psychical researchers" and mediums, such as Dr. A. E. Tanner, Mme. Paladino and Mrs. Piper. The present investigation is perhaps even more complete. The medium was a "very attractive blond miss of 20," who came to the professor "with a very important message from spirit land."

One of the most interesting things about her mediumship was that the girl never lost herself or was unconscious of what the spirit—whose presence was indicated by a change of voice—said.

She lived in a small town. Not until she was 17 did she see a real medium. This experience turned her dreams into definite visions and her reveries became realities to her. The medium visited did what many of them try to do to impressionable people—insisted that the spirits desired to control the girl herself "and had a great work in store for her." Thus mystics are sometimes made.

After this she grew somewhat credulous of clairvoyance and clairaudience. She and her mother became impressed with her visions, with no thought of pecuniary gain. In this young girl are found the features of that exquisite and romantic science common to impressionistic, devout persons.

Reveries faint and flitting at first in her village and churchlike environment finally became the guiding realities of spirits. She felt herself to be an instrument chosen to listen to and obey their orders.

Thus a rich fantasy encouraged by her mother's sympathy favored a fertile imagination and induced her to give seances. In the presence of university people she began to commune with ghosts ranging from those of plain people known as Bertha and Esther to Lucifer and a Martian who had never lived on earth.

Her purpose was to convince Prof. Hall and others that she had a revelation for the world. Her ambition was to be an apostle of spiritualism or spiritism.

The investigators demanded revelations of something known only to one or another of them personally. She had im-

plicit confidence in her spirits—which, as usual, in mediums were only another level of her own personality—but, as with all other mediums, they failed her here.

The medium was inclined to believe that her spirits, her "controls," could tell how many oranges of a basket had been poured on a table behind her. For the successful performance of this test a reward of \$5,000 has been offered, but she was not able to do the feat; indeed, it never has been done by any medium.

Hard hearted, level headed practical physicians commonly tell spiritists and mediums bluntly that their visions, reveries, delusions and illusions are self-deceptive and credulity developers. Scientists, however, are more gentle in their judgment.

This girl in question loved her visions and delusions and the experiences they

brought. While the normal ego is controlled there is an abandon of personality in mediumship which expresses the deep secret things of the heart with a frankness not possible under social conventions. Here are some of Prof. Hall's conclusions:

"Psychic researches to-day represent the last potent stand of about all the old superstitions of the past, against which science contended. The next generation will hardly be able to believe that prominent men in this wasted their energies in chasing such a will of the wisp as the veracity of messages or the reality of a post-mortem existence, which they no more prove than dreams of levitation prove that man can hover in the air at will. Mediums put forth their reveries as if they were revelations.

"This girl regards any impression that springs up as a result of mediate association in her mind as really true, and yet nothing is so plain as that she plays both roles of listening to her own oracle, inebriated by her own elixir of life."

After one of the seances Prof. Hall described it to the psychologists Freud and Jung, who spent a week at his house. They expressed a desire to see the girl medium and she obligingly came. "In a short interview with her they at once diagnosed the true nature of it all. She was in love and had unconsciously acquired the motive of mediumship to win the love of her adored one. The European psychologists suspected a slight dementia præcox—a mental disease difficult to establish in its incipency and maintained that practically all mediums are somewhere non compos mentis."

### Tips Welcomed by Girl Messengers

"IT has long been our custom," said an amiable uptown dweller, "to give telegraph messengers a nickel when they bring us telegrams. This doesn't make or break us and it pleases the boys. If they should pick up in this way ten or fifteen or twenty nickels a day, why it would help a lot.

"But now lately with boys getting scarcer and scarcer all the time we've begun to have girl messengers, and with their coming there was presented to us quite a little problem, namely, the question of whether we should give the same tip to the girls.

"I didn't know but that the girls would think it beneath them to take a tip. I didn't know but that they would even resent it, and so I decided promptly on the spot to ask the first girl messenger about it, which I did as nicely as I could, but at the same time with perfect frankness. I told her that we had always given the boy messengers a nickel and we would like to continue the same with the girl messengers if that would be all right.

"She smiled the least little bit of a smile and said she thought it would be, and at that we handed over the nickel, glad to have this little problem settled so easily."