

# OPERATION OF GERMAN SUBMARINE DESCRIBED BY A NAVAL OFFICER

Report of a Cruise by an Engineer-Lieutenant Tells of Grim Work in the North Sea—How the Deadly Craft Slipped Out of the Kiel Canal and Torpedoed a Destroyer and Crept Back to Friendly Waters—Tense Moments When the Enemy Is Sighted,

By H. R. BEYER, Engineer-Lieutenant of the German Naval Reserve.

(Correspondence of the Chicago News.) Kiel, Germany.—At the beginning of last September, I had returned from a patrol trip in the Baltic sea. After having a day's rest I walked through the streets of Kiel at six o'clock in the morning, crossed the harbor on one of the ferries and then a short walk of five minutes brought me to the main gate of the Imperial wharf. The sentries saluted at the double gate, but nevertheless I had to show my card of identification to an officer of the wharf at the inner gate. Twenty thousand skilled workmen were working there in two shifts, day and night, building and repairing. I had to walk to one of the outer basins where my boat was lying. We had orders to leave at 9:30 a. m.

As I passed some of the first-class battle ships, I looked with pride at the little dark gray bodies of the submarines lying side by side along the pier. One might compare them to turned up nutshells. By the black letter "X" on the bow of the second one, I recognized my boat. Seventy-five feet in length and twelve feet in width are the overall dimensions of the craft. The body of the boat extended two feet above water level and ten feet below. The hull is built of five millimeters (approximately three-sixteenths of an inch) Krupp steel.

Some of the new style boats, lying not far from ours, are considerably larger and more powerful. The bridge on each boat is almost in the center of the upper deck, ten feet in height and five feet square. Besides the two masts, supporting the wireless, the exhaust of the gas engines and the periscope, there is only a rudder to be seen on the upper deck and two on each side just above the water level. The rudder on the rear of the upper deck serves as a help in steering under water, and it is connected with the main rudder. In other words, it is an additional device for changing the course and is of great help when the vessel is submerged, for then turning is naturally much more difficult to accomplish. The side rudders serve the purpose of allowing minor up and down movements.

**Getting Ready for the Start.** A few steps down the pier ladder brings me to the upper deck of the U-X. There the crew is busy getting her ready for the trip. Twenty-four men form the crew of our small battleship. Twelve are regular sailors, including noncommissioned officers, and the rest are the engineering force under my command. All of my men are skilled mechanics in gas engines and electrical work. German submarines are driven by gas engines when they are running above the water line and by electric motors when under water.

I receive from my assistant engineer the report that everything is "clear for action." There are hundreds of things to be looked after. I inspect carefully every mechanical part of the upper deck, then descend through the manhole, thirty-six inches in diameter, which is the sole entrance and exit of the boat. I convince myself that everything is right here, as each piece of mechanism is of the greatest importance for good results of our trip. All gasoline tanks are at the lower part of the boat and all have been filled, the electric batteries have been charged and drinking water and food supplies have been taken on. The deadly torpedoes are in place and the gas engines and motors are in excellent condition. Every piece of apparatus has been tested and found satisfactory.

It is nine o'clock, and our captain in charge, bearing the rank of captain lieutenant, arrives on board. I report in engineering division "clear for action." We are talking about important orders for our trip. At 9:30 sharp we are on the bridge, the signal goes through, every man is at his place. The mechanical telegraph rings and gives speed orders to the engine room. "Clear for maneuver," half speed forward, we are moving; salutes are exchanged with our comrades while passing their boats. Will they see us return?

**Through Kiel Canal to the Sea.** We are able to make fourteen knots above water and nine when submerged. The newest type of German submarine has been brought to a speed of twenty knots above water and eleven knots below. We are heading for the Kaiser Wilhelm canal (the Kiel canal), connecting the Baltic and the North sea. Within three miles of our starting place and yet within the safest part of the harbor of Kiel we enter the canal and go through its locks. We are going full speed forward. Our 550 ton boat is vibrating with the motion of the engines. After four hours we leave the canal, which has a length of approximately forty-five miles, and we enter the lower end of the Elbe river at Brunsbuttel. Being in the vicinity of Cuxhaven, we are now meeting cruisers and torpedo boat destroyers. A short salute and signal and we are heading for the North sea.

We begin to feel the famous motion of that body of water. Waves rush overboard, and so we descend through the manhole and take our places inside. The steady vibration and the noise of the exhaust and of the engines, and the not at all appetizing smell of oil and gasoline and also the rocking of the boat make the interior by no means a pleasant place for anyone who is not accustomed to it. The only exit, our manhole, is being screwed down and made air and water tight. Since men have to do their utmost under such conditions, you can well imagine that it takes will power and energy. And the men have it.

Our air pump for the rear ballast tank begins to show a little trouble and immediately one of the mechanics is underneath it to make repairs. He is working hard in a space where there is no room to turn around, lying between moving engine parts, soaked with oil and gasoline, but it is done willingly at a moment's notice. The captain has taken his place in the chart room, the most important part of the submarine. He is intently studying the planes of the periscope, the only eye of the submarine.

**Mechanism of the Torpedoes.** There are different styles of periscope in use. Ours extends approximately sixteen feet above the upper deck and gives a very clear picture of the surroundings.

The torpedo, the most splendidly worked out weapon, but also the most dreadful, may be called a small boat in itself. Of a cigarlike shape, the outer shell, built of steel and bronze, conceals the finest and most accurate mechanical works, machinery and air chambers, besides the deadly explosive, one of the most important secrets. There are at the rear of the torpedo two propellers driven by compressed air and a dial to be used for setting the range the torpedo has to travel. For instance, if we fire the torpedo at a target 1,000 yards away, we set dial at 1,500 yards. Then if the torpedo has traveled 1,500 yards and has not hit the target by that time, a flood valve opens, thus allowing the water to enter the torpedo and sink it, removing all danger for shipping and preventing the enemy from making studies of the most secret weapon of every navy.

When the torpedo is fired it is forced out of the tube under water by compressed air of 250 to 300 atmospheres, approximately 4,000 pounds to the square inch. I will mention that on torpedo boats we carry a small-sized torpedo which is fired from a tube above the water level and which drops under water after leaving the tube. Up to the present time we have not been able to make use of this type on submarines, for the reason that we must keep the gravity point of the boat as low as possible. This disadvantage is noticed when reloading the torpedo tube on submarines. It requires the work of an excellently trained crew to bring an 8,000 pound torpedo into the tube correctly on a moving boat and within a small space as is available for the torpedo room.

**Getting Ready to Attack the Foe.** After traveling for hours we are approaching the line of torpedo boats of the enemy on guard against us and now every precaution must be taken. The order, "Clear for action!" is going through the boat. Everybody at his place has done his duty for the last twelve hours without rest and everybody knows that chances for rest are not very frequent. And yet our captain takes care of that; he has studied his maps and knows the depth of the water. Orders go through and within fifteen seconds our boat is

slowly going down. The ballast tanks have been opened, water is pressed in and produces our downward movement. Our instrument shows a depth of forty-five feet when we come to a stop. All machinery is investigated, some members of the crew stay on watch, the others are ready for a warm meal and a rest. All this is at the bottom of the ocean, the only safe place for the submarine.

The food that is served consists of canned goods. Pork and beans, pork chops with gravy, heated on an electric stove, and peas are serving as a main food and also tea with lemon to quench thirst.

After six hours of rest, now orders come, everybody takes his place, and soon we notice on our instrument that we are moving upward. The same noise and the same smell of oil and gasoline and the same vibration. By pressing the water out of the ballast tanks our slow upward movement has been accomplished. We are speeding ahead just below the surface. The gas engines have been stopped since we began our first diving movement.

**Destruction of the Destroyer.**

After running at this depth at very low speed for six miles we begin to realize that the time is near for encountering one of the enemy's battleships. Carefully we are moving up to get a glimpse through the periscope. At a distance of five miles we spy three torpedo boat destroyers of the enemy. The moment has come when our captain has to show his skill as master of the submarine. He is calculating the distance, the speed and the course of the enemy's boats. His plans are made. We are going down thirty feet; within the next twenty minutes it will be shown whether his figures are correct. Everybody is ready for action, every nerve, every muscle is strained for that which is coming. It may be a successful fulfillment of our orders or it may be death for all of us. No sign of emotion is to be seen in the earnest faces of the fellows. Every one is at his place. Orders are repeated so that all may understand them. Levers are pulled and pushed; suddenly we are moving upwards, the periscope is reaching the surface and one look convinces the captain that his calculations were correct.

We are within 800 yards of the nearest destroyer. Our boat swings around under water to a certain angle, a signal goes through the boat and the torpedo is fired. After thirty seconds a terrible thunder sound across the ocean, roaring and dying out at the horizon. We turn the periscope and observe thick black smoke where the destroyer has disappeared, some wreckage being blown within fifty yards of us. The vessel had been hit at its center and destroyed almost instantly. At the same moment shells strike the water in our immediate neighborhood. We have been seen by the two other destroyers. One shell well aimed would make us pay with our lives for what we have just accomplished. Almost too long we tried to watch the results.

**The Return to Friendly Waters.**

Within a few seconds our periscope has disappeared and we are below the surface in a depth of thirty feet. We have fulfilled our instructions and are turning back. Once more we have to avoid mines and also the torpedo boats which may try to pursue us on our return. We are heading according to orders for the naval base at W— to report the results of our trip. Arriving in safe waters we speed ahead above the water level. The collapsible masts of our wireless apparatus are set up and a message is flashed that we are safe and returning with good results. Once more the crew has escaped the iron grip of death, and the "candidates for heaven," the nickname given them in naval circles, will spend a restful night in the harbor after very little sleep for the last fifty-two hours.

We enter the harbor with smiling salutes to our comrades passing by. A cheerful "Hurrah!" is given to us by an outgoing submarine. We are glad we are turning in, even if it is only for a short time. Tomorrow we expect new orders and we shall be ready again for our hazardous game.

## ITALIAN AMBASSADOR AND FAMILY



Count Macchi di Cellere, Italian ambassador to the United States, here seen with his wife and two children.

## The Church and the Liquor Traffic

By REV. JAMES M. GRAY, D. D., Dean of Moody Bible Institute of Chicago

TEXT—Woe unto him that giveth his neighbor drink, that putteth thy bottle to him, that maketh him drunken also.—Habakkuk 2:15.

A demand is frequently made on the preacher to speak on the relation of the church to the liquor traffic, but the relation of the church is determined by the relation of the individual Christian. What is that relation? Let me ask myself the question, and seek to answer it.

My relation to the liquor traffic is that of a total abstainer from all intoxicating drink as a beverage. And why is it so? For reasons of a personal character.

**A Personal Testimony.**

1. I believe alcohol would injure me physically. I have tried to make myself intelligent on the subject, and have read good authorities on both sides of the case. While there is a difference of opinion among wise men as to whether alcohol may not sometimes be given medicinally with beneficial results, there seems to be unanimity that its use in any other way is only harmful. As a man I may be indifferent to my physical condition in some respects, and be willing to pay the cost of certain indulgences; but as a Christian I am not at liberty to do this, for if I am to glorify God in my body, that body must be at its best always.

2. But what injures me physically, will sooner or later injure me morally as well. Indeed the effects of alcohol in this sphere are seen and admitted more readily than in the other, and yet they are only the outgrowth of the other. When man's physical and mental powers are weakened his moral strength is easily assailed, and hence blasphemy, ingratitude, anger, murder, licentiousness, dishonesty, and the whole brood of villainy and iniquity that makes the civilized earth a continual groan. My self-respect, to name no higher motive for the moment, will not permit me to deliberately contribute to this misery and woe.

3. It is the injury to me spiritually though, that has the strongest power in withholding the cup from my lips. I know that I am an immortal being, and that I must give account to him who shall judge the quick and the dead. And I know that there is for me a future of eternal blessedness or sorrow, and sorrow not only for what I have lost, but for what I must experience in retribution for my sins. I am afraid of hell, and I am not afraid to say that I am afraid of hell. The drunkard shall not inherit the kingdom of heaven, and I want to inherit it, and I will not be such a fool, God helping me, as to sell that birthright for a drink of beer or a glass of toddy.

**My Duty to My Neighbor.** But all this is merely personal, it is my duty to myself; but my obligation is broader, and I have a duty to my neighbor too.

1. There is the duty of my example. The apostle Paul by inspiration of the Holy Spirit brings this out very clearly in Chapter 8 of First Corinthians. I may feel that personally I am at liberty to do as I please in a matter of this kind, I may "drink it or let it alone," but not if somebody else will be caused to stumble because I do not let it alone. I may thus cause him to perish for whom Christ died, and it will be difficult under such circumstances to give an account of my stewardship with joy.

2. There is the duty of my vote. What right have I as a Christian citizen to cast my ballot for a traffic that damns men's souls? There was a time in my experience when I was not so keen upon this point. I felt I had done my whole duty when I preached the Gospel and showed men how they might be saved from sin through faith in Jesus Christ. I still believe this paramount, and nothing must be permitted to stand in its way, but I have not done all when I have done that. There is the dram shop on the corner, a snare set by the devil for my neighbor's feet. As a Christian citizen, I have the privilege and responsibility of saying whether I would have it there or not, and I can preach the Gospel with more consistency and power when by my ballot I answer no.

This brings me to the text. Who is giving his neighbor drink? Who is putting the bottle to his lips? Who is making him drunk? Is it straining the situation to say that the state does this when it legalizes the sale of intoxicating drink and profits by it? But what is the state in a democracy, except the aggregation of the individuals who compose it? And who are these individuals in great proportion, save those who profess to know God and Jesus Christ his Son, and obey his commandments? O church members, let us throw off our lethargy and indifference, and in the light of the second great table of the law, clear our skirts of our brothers' blood!

## Beautiful Midsummer Toilette



The unusual and distinguished style of this costume has been achieved by the employment of familiar materials. White voile, very fine in quality, filet lace, with an open mesh, soutache braid, and pearl buttons are all staple goods well known and well loved.

The pretty fashion of posing one transparent fabric over another shows to excellent advantage in the skirt. The underskirt of voile is full and round. Above the two-inch hem there are seven narrow tucks an inch and a half apart. Just above the knees a band of braiding, in an ornamental scroll pattern, is applied all around the underskirt, finishing its decoration.

The overdress of filet lace does not extend to the bottom of the underskirt, but is shorter by about nine inches. It is gathered in at the waist line with the voile, leaving a panel of the underskirt uncovered at the front, for the lace does not extend across the entire front of the gown. It is caught up and fastened to the underskirt just below the knees at each side, forming a slight drape.

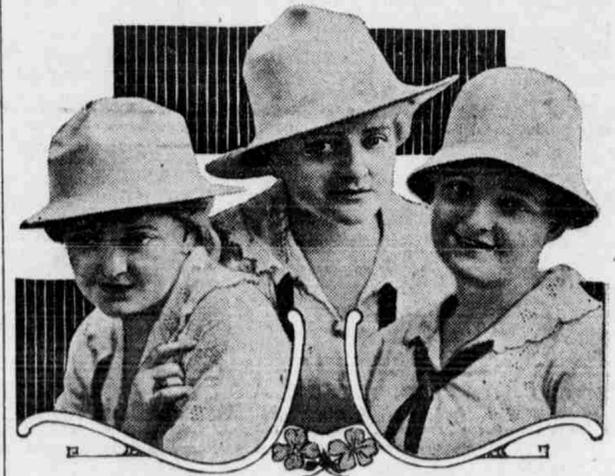
In the bodice, which suggests the "moyen age" inspiration, the draping

of the materials is reversed, and voile appears over filet net. It hangs straight and boxlike from the shoulders to at least six inches below the normal waist line. Small tucks play a very important part in its construction, appearing over the shoulders and part way across the front. They supply the required scant fullness in the material that is caught in by the garniture of braiding at the bottom. The braiding is in silk soutache like that in the skirt, with the pattern widened at the front. The long plain sleeves are finished with small tucks in a group of seven on the forearm and a second group of five on the upper arm. A narrow pattern in the braiding outlines the arm's-eye.

There is a tall standing turnover collar of voile and a tie of narrow black velvet is brought twice around the throat. It supports the collar close under the chin and terminates in two long ends at the front.

The flower-trimmed leghorn hat with sash ends of wide black velvet ribbon, and the low shoes of black and white kid, are details not to be lost sight of in completing a toilette of exceptional beauty.

## Panama Hat of Enduring Beauty



For many generations the Panama hat was woven in one shape, and it took much urging and good management on the part of those who bought and imported the genuine South American Panama hat to persuade the native makers to produce other shapes. But finally this was accomplished and now one may buy a Panama in almost any shape. Not all the hats known by this name are South American products, (there are Panamas and Panamas), but whether made in Japan or Connecticut, or brought from its native home, the Panama is a beautiful product.

It is and is likely to continue to be the ideal hat for midsummer outing wear, for sports and for traveling. It is soft enough to be comfortable, and uncrushable and firm enough to need no support. It is made with the intention of fitting the head, as to the crown, and for shading the eyes, as to the brim. But in the past few seasons it has been possible to get Panamas with very wide brims, and these have added one more to the number of wide-brimmed straws used for the picturesque flower-laden millinery of midsummer.

But the hat that is dearest to the heart of lovers of the Panama is that which keeps as close as possible to the original, mannish shape or a va-

riation that does not seem to change its character. Three popular shapes selected from this season's showing of Panamas are illustrated here. They are to be recommended as practical and becoming and correct in type.

These hats are usually very simply trimmed with bands of silk, ribbon or linen. Flat rosettes or hanging scarf ends are favorite decorations, and not to be improved upon. The wide-brimmed shapes are sometimes swathed with malines and finished with huge bows of this fabric. Occasionally flowers or feathers adorn them. But narrow-brimmed Panamas are trimmed in the simplest manner possible.

The fine South American Panama, if well cared for, will stand many seasons' wear. These hats can be cleaned and reblocked if one wishes to change the shape. But it is better to swathe the hat in a wide silk or chiffon scarf than to reblock it, and to wear it in its original shape. A hat so fine, so shapely and sensible will always look well.

It seems a pity to wear out a hat whose making involves such painstaking and wonderful work, by using a hat pin. In a fine hat it is better to sew hat fasteners in the band and secure it to the head in this way.

JULIA BOTTOMLEY.