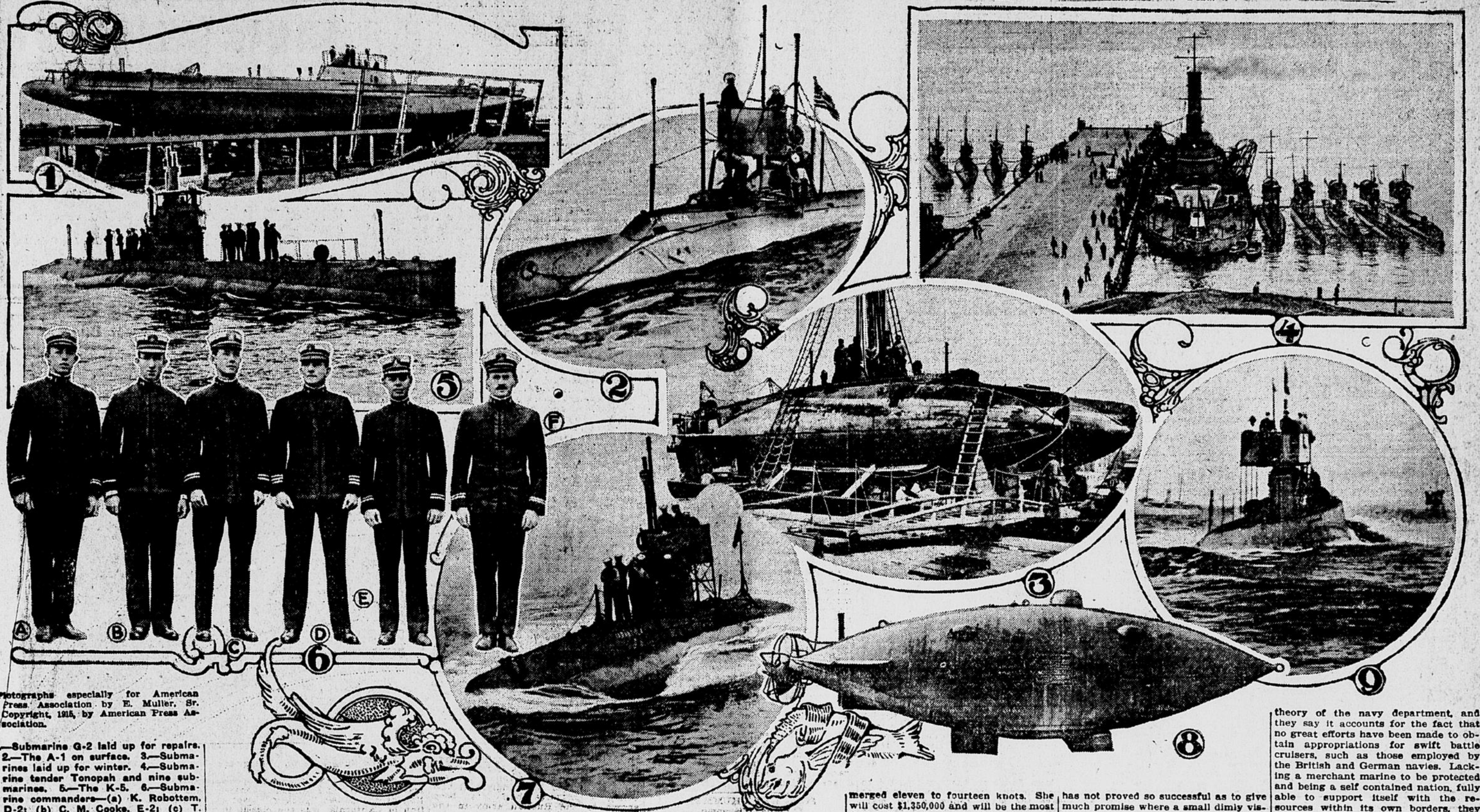


# A PAGE OF TIMELY READING

## BUILDING NEW SUBMARINES TO DEFEND AMERICAN COAST



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1—Submarine G-2 laid up for repairs. 2—The A-1 on surface. 3—Submarine laid up for winter. 4—Submarine tender Tonopah and nine submarines. 5—The K-5. 6—Submarine commanders—(a) K. Robottom, D-2; (b) C. M. Cooke, E-2; (c) T. Withers, commander second division of submarines; (d) Yates Stirling, commander Atlantic squadron of submarines; (e) R. S. Fay, D-3; (f) E. C. Metz, D-1. 7—The B-3. 8—The Intelligent Whale. 9—The F-2.

By CHARLES P. CALVERT.  
THE success of the submarine in the present war will shape the naval programs of all countries in times to come. It has been demonstrated time and again that the greatest battleship is no match for the hidden terrors of the submersible. Fleets of destroyers may steam round and round a warship or merchantman, but the undersea craft lies in wait and, taking advantage of the first opening, speeds a torpedo at forty knots an hour at its prey. Complete destruction, annihilation in fact, is the almost inevitable result.

The United States has learned a valuable lesson from the activities of the German U boats, and the men who plan the American navy are ready to ask congress for an appropriation with which to build thirty new undersea craft in addition to the twenty-six now under construction or provided for. "U" means "untersee," submarine. For Defensive, Not Offensive, Work.

The importance of the submarine for the United States not so much for its offensive strength against enemy battleships but for the defense of the coast lines is appreciated in official quarters. Extensive experiments are now being conducted, and it is expected that when the newest type of submarine is completed it will embody many ideas that are not generally known. As an example of this one may cite the fact that the American navy had installed disappearing guns on the decks of her newest boats. This was kept a secret until announcement came that an English merchantman had been shelled by a German raider. There was no longer any need for secrecy, the other nations had adopted the same idea, and announcement was made that the United States navy was equipped with such boats and guns. Experiments are being conducted to determine the value of electric batteries to propel submarines for submerged operations. It is confidently believed that when the general naval board is ready to make its formal report next month the number of new

submarines recommended will depend on the number of batteries and engines available at that time. Intelligent Whale Among the First. As contrast to illustrate the vast strides that have been made in submarine development in this country one may point to the Intelligent Whale and the Schley. The Whale was built in 1864 in New Jersey by C. Bushnell, Augustus Rice and H. Halstead. She was 28.3 feet long, nine feet in depth and carried a crew of thirteen men. She cost \$50,000 and was propelled by hand. In 1872 she was tested and condemned. The Schley, now under construction, when completed will be able to travel 7,000 miles without replenishing her supplies. Her speed on the surface will be twenty-nine knots and sub-

merged eleven to fourteen knots. She will cost \$1,350,000 and will be the most destructive weapon of submarine warfare in the world. Navy engineers are also hard at work seeking some effective defense against submarine attacks. While nothing has been revealed, it is assured that questions are being considered that will divide the hulls of battleships into more numerous compartments and stronger bulkheads, so strong in fact that they can withstand the force of the explosion of a torpedo. It is said that the torpedo boat destroyer does not meet the needs in anything like an adequate manner. Location and destruction of submarines by aeroplanes also is considered impracticable in any but special cases where weather, depth of water and other conditions make it possible. Bomb dropping from aeroplanes, even over far-reaching land fortifications and other easily visible stationary objects

has not proved so successful as to give much promise where a small dimly visible shape beneath the surface of the water is the target. Similarly, submarine against submarine is not considered a possible development of undersea warfare unless some new and startling device to give commanders the power of undersea vision is discovered. One of the novel features of the war, however, was the sinking of an Italian submarine by an Austrian submersible. The reports of the encounter were not sufficiently complete to indicate the value of that kind of warfare. American Navy a Defender. Officers who advocate the submarine navy say that it is thoroughly practicable for the United States, because the mission of the American navy is to defend the United States from invasion, not to prepare the way for an invasion of any enemy country. That they declare, has always been the

theory of the navy department, and they say it accounts for the fact that no great efforts have been made to obtain appropriations for swift battle cruisers, such as those employed by the British and German navies. Lacking a merchant marine to be protected and being a self contained nation, fully able to support itself with the resources within its own borders, they argue that battle cruisers have not been considered a necessity to the United States navy, and attention has been concentrated upon getting the greatest possible number of heavy battleships, floating fortresses, to defend the coasts. That theory also accounts for the lower speed of American super-dreadnoughts. It is said, and the greater concentration of gun power in ships of American design compared with similar ships abroad. With fleets of submarines stationed along both coasts and with navy yards equipped to care for them those officers argue that even the battleships could be spared from the defense line and that no enemy would dare approach with ships and transports a coast well mined and defended with land guns as well as submarines. The risks would be too great, the chances of overwhelming disaster too many.

## Many College Men Learn Duties of Soldiers

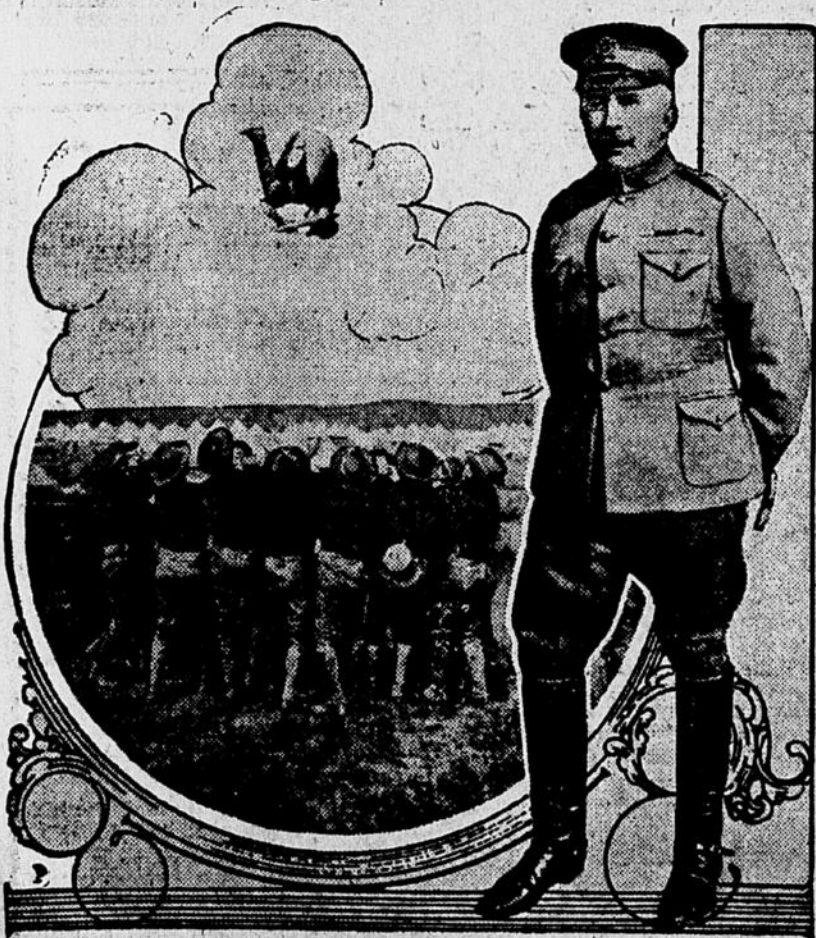


Photo of Wood copyright by Clinedinst.

Major General Wood and soldiers skylarking in camp

COLLEGE students from sixty-one institutions of various ranks and sizes were taken into camp at Gettysburg two years ago and taught the rudiments of soldiering. The experiment was so successful that it was repeated last year at Burlington, Vt. Yale sent thirty-three men, Princeton twenty-five, Harvard twenty-one, and so on. Even preparatory boys were taken. This year there are four camps for the instruction of students, one at Plattsburgh barracks, N. Y.; another at Ludington, Mich.; yet another at the presidio of San Francisco, and the fourth at Chickamauga, Ga.

These young men and boys are commanded by army officers while in the camp. The graduates of the course will be placed on a list kept in Washington and will be eligible for commissions in any volunteer army raised in the event of war. The growing interest in the work is shown by the attention which the college and school papers have been giving to these military training camps. Very few people heard much about the Gettysburg camp of two years ago, but it was the trying out of a new scheme for a reserve force by training the regular army and the militia. The backers of it explained that there were many young men in the country who lacked the time or were otherwise prevented from joining the militia who would nevertheless be glad to get an elementary education in things military, and then, if the need for training the soldier arose, would not go into the field utterly ignorant of the simplest

principles of the art of war, as our raw volunteers have been in the habit of doing ever since we ceased to be a frontier country, when being a militia man was a comparatively simple matter. No one who went to the camp placed himself under obligation to go to war or to do other military service. The assumption of those who fathered the undertaking was that many of the young men would be found ready to act as officers of future volunteer regiments and of the regular reserve of the army. During the period of instruction, which lasted six weeks, all the brass button frills were cut out and the work was made to resemble, as nearly as possible, the actual conditions of war. One hundred and sixty men attended, the average age being nineteen. The war department detailed one battalion of infantry, one troop of cavalry and one company of the signal corps to serve as instructors of the students. A detachment of the medical corps was detailed to look after the health of the camp and treated the students so far like the regulars under their charge that typhoid fever and small-pox vaccine were administered without charge. There was this difference, that neither vaccination nor inoculation was compulsory. The majority of the young men, however, underwent both treatments, suffering, so it was reported, no ill effects except a temporary soreness of the arm in a few cases. The work consisted primarily of the study of the duties and principles of infantry service, though the other branches were not neglected. In the morning there were three hours of drill and one hour of lectures, given by various officers of the camp and occasionally by such high placed military personages as Major General Leonard Wood, then chief of staff, and Major General Barry, then commanding the department of the east. Some of the lecture subjects were: "Conflict of Infantry," "Signal Corps," "Use and Duty of Field Artillery," "Foreign Military Policies," "Use of Cavalry," "Benefits of Military Training," "Causes of War," "Military History," "Civil War," "Commanding Military Training," "Personal Hygiene," "The Army League" and "The Care of the Wounded." Afternoons were spent in bayonet and broadsword exercises, cavalry and artillery drills and practical road marching. In the evening one of the officers had a map reading class, that is, the study of military problems on military topographical maps.

## BRAVE WOMEN OF EUROPE RISK THEIR LIVES AS AVIATORS

THREE things prompted me to volunteer for air scouting after the war began," said pretty, diminutive and effeminate Helene Dutrieu, the French aviatrix, who is now in this country. "I love France. I love adventure. I knew my business. Most of the men fliers were needed at the front in strictly military reconnaissance work. There were comparatively few aviators available for guarding Paris. I told the military government I wanted to do my part. They told me that I could not be entered upon the army rolls; that I could not have any official position, but that I might work privately. So from the day the war began I was in the air practically every day, sometimes arising early in the morning and scouting for hours, sometimes flying in the afternoon or late evening. I had the good fortune on numerous occasions to detect taubes on their way to visit Paris, and I was able to descend and warn the aviation corps commanders so that they had ample time to send up squadrons and fight off or frighten away the invaders. "I am sorry I cannot say that the Germans shot at me. But I never let their fliers get close enough to shoot at my machine or to drop bombs on me. I circled around and around, keeping watch with my glasses, and the instant I detected a German machine I darted to earth and gave warning. Usually I flew at a height of from 1,500 to 2,000 meters, but sometimes I had to go much higher because of fogs and mists that veiled the lower altitudes. "Mlle. Dutrieu is so girlish in appearance that she does not look her age, which, as she remarked very naively, "is between twenty-five and thirty." Certainly the reporter who talked with her would have been perfectly willing to accept the smaller figure. She has been, as she puts it, "trying to die young" ever since she was in her teens. She said that as there was no further service she could render France at the present time on account of the decision of the government not to use women in the war she had decided to visit the United States to deliver war lectures in the eastern cities. The Princess Shakhovskaya of Russia, who has won fame as an aviator, was at the front for a time. She was with General Rennenkampf's army operating in East Prussia. "So far as I know the princess is the only woman aviator in eastern Europe."



Photos by American Press Association.

Mlle. Helene Dutrieu (left) and Princess Shakhovskaya (right). Below, Mlle. Dutrieu in flight.

In this war, she is the first woman aviator to receive a commission for a commission was rejected at first because of the fear that should she be captured by the German navy she would be forced to reveal secrets.