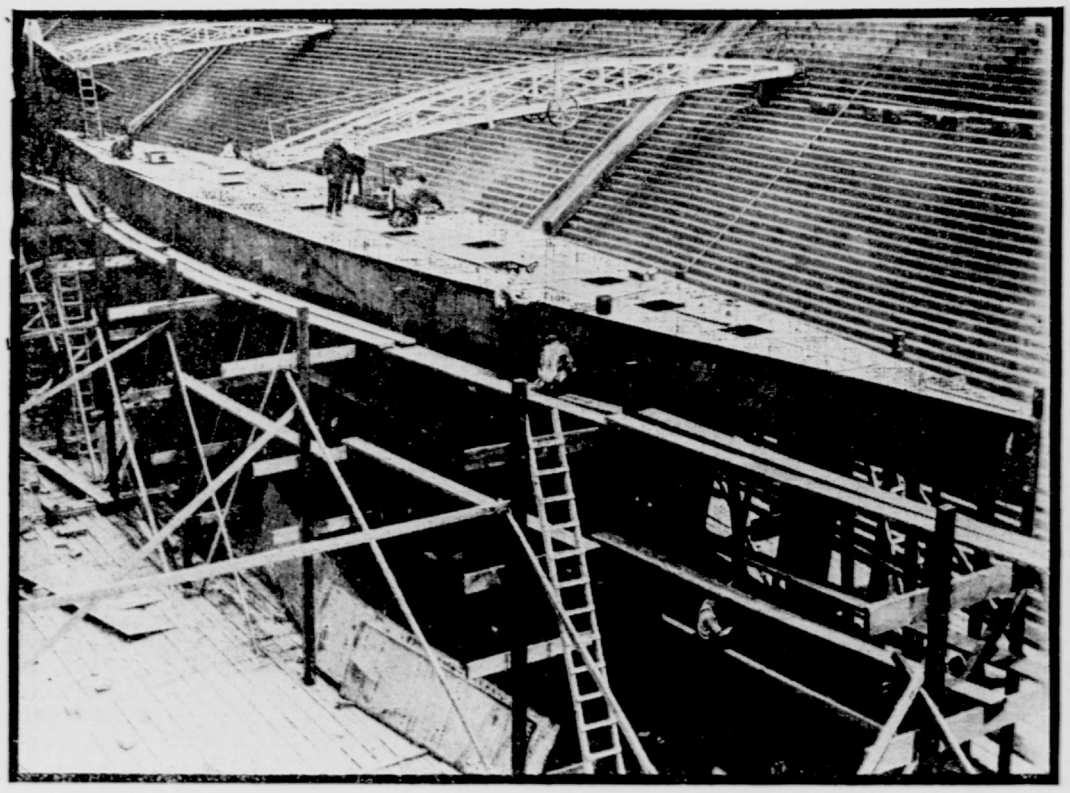
NAVAL WARFARE IS BECOMING MORE AND MORE A CONTEST BETWEEN INTRICATE MACHINES, AND THE BRA



ONE OF THE NEW TARGETS FOR BATTLESHIP PRACTICE.
These targets are formed of steel plates, and are filled with cork in order to keep them afloat when struck. They are towed through the water in order to give the marksmen skill in hitting a moving vessel.

LIKE ACTUAL BATTLE.

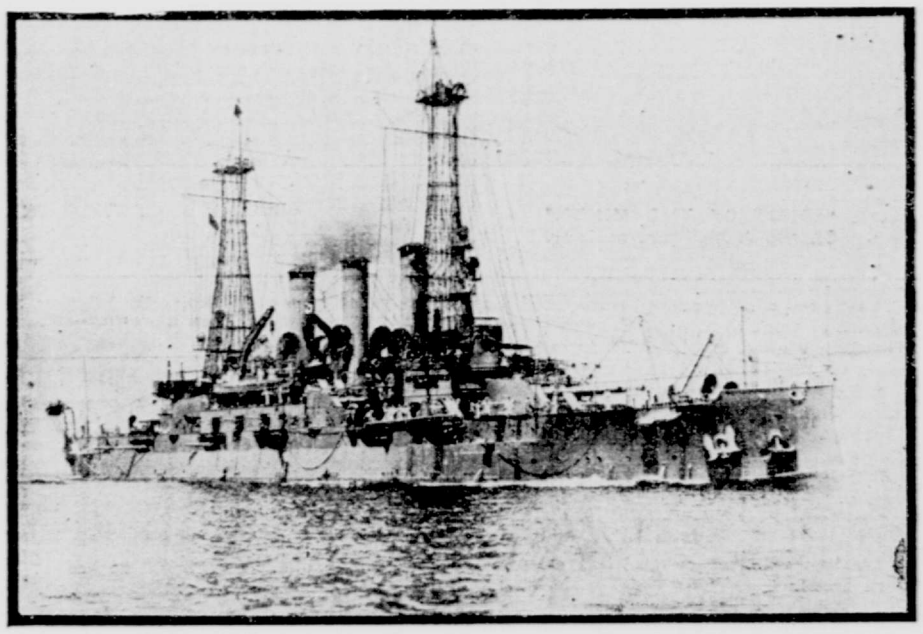
Target Practice on Battleship Fleet an Evolution.

The evolutions of the Atlantic fleet of battleships, torpedo boats and submarines which have just been held in the neighborhood of Provincetown, Mass., and the target practice now in progress off the Virginia Capes, under the command of Rear Admiral Seaton Schroeder, are probably more comprehensive and practical than any ever before conducted by the United States navy. The points gained from the cruise around the world are being put into practice. More thoroughly than ever before the conditions under which an actual battle would be fought are being reproduced, and many new devices have been introduced.

centage of hits as in other years, but the practice will be productive of more important results.

A new kind of target has been devised, which, apparently, will assist in the creation of the illusion that the gunners are shooting at the vital section of a hostile battleship. It is made of steel plates riveted together, just as if it were a torpedo boat. The hollow body is filled with cork, which keeps it afloat after it has been struck. It is fired at while being towed through the water.

In order to facilitate the handling of the fighting machine named a battleship, the vessels of this type in the Atlantic fleet have been equipped with a new kind of mast, if the curious structure of interlaced piping rising several scores of feet above the deck may be so described. Perhaps it is better described as a tower. From the platform on its top the firing of the guns is controlled. There is placed the range finder, by



THE NEW FIRE CONTROL MAST.
The range finder, by means of which the distance and speed of a target or an enemy's fleet are found, is placed on the elevated platform. The range is communicated to the gunners by means of a telephone.

The record target practice of the navy heretofore has been at known ranges, and the targets have been fixed. Just before the close of the tour of duty of Captain William S. Sims as inspector of naval target practice he succeeded in having adopted a programme of practice which engaged conditions and circumstances that, he pointed out, were more nearly a reproduction of the situation which would confront naval gunners in time of war than the old conditions of naval target practice.

The target this year is moved at a rate of speed and at a distance from the vessel at target practice not previously announced to the gunners. More than this, the ship engaged in firing at the target will be made to roll, of course taking advantage of conditions of the sea which will impart this factor. Such conditions, combining a target moving at a speed and a distance equally unknown in advance, and with the gun platform rolling in a seaway, are least favorable to accuracy and to be overcome only by the greatest skill in marksmanship. The record probably will not show the same per-

means of which the exact distance of the enemy or target is obtained. Leading from it to the various gun stations are telephones for the communication of orders and the ranges to the crews.

The telephone as a means of fire control is another of the innovations on the American battleships. When the fleet set off for the journey around the globe each battleship was provided with a telephone equipment, but there was no time to put it into place before the vessels sailed. The work was done by the electrical experts on the ships. The telephone receivers and transmitters when at target practice or in battle are hung upon the persons of the gunners, the receivers being held to the ears, while the transmitters are slung in front on the breast, just below the mouth. This leaves the gunners free to manipulate their guns. It is a far cry from Paul Jones's order to buckle on cutlasses to repel boarders to that of the commander of a modern battleship giving the signal to buckle on telephones preparatory to sinking a fleet five miles away.

Every precaution was taken in the installation of the plant to protect it from damage. The switchboards are in watertight boxes located where they are thoroughly guarded from the effects of gunfire. Should the fire control towers give way under fire, which it is believed they will not do for a long time, owing to the meshed form of their construction, the telephone wiring is so arranged that the fire may be directed from the deck by plug connections provided at various points for such an emergency. In the turrets the man in charge of the gun crew is connected with his men by telephone, and repeats his orders by this means. No longer is the sailor spurred to his greatest effort by the lusty shout. So far as men's voices are concerned, the battle is fought in silence. The struggle is between machines working as nearly automatically and precisely as machines dependent on the human element can be made to work.

One of the features of this year's manœuvres is the practice in torpedo attack and defence. Under cover of the night flotillas of torpedo boats and submarines put out toward the battleships as if they really desired to sink them after the manner of actual warfare. One of the purposes of this is the testing of the new location of the searchlights on the skeleton masts. Another is that of training the eyes of the men to detect them. It is an interesting fact that the optic nerve can be specialized in this direction, so that the sailor can see things in the dark that an untrained landsman would never detect.

Many other changes have been made in the battleships with the intention of making them approximate more closely the conditions under which they will go into battle. All brass ornaments, even to doorknobs, gilded letters of the name and the bow ornaments, which reflect sunlight and reveal their presence to an enemy, have been eliminated. The beautiful white which has heretofore been in use on the vessels in time of peace has been replaced by the gray war paint which is to be their permanent color.

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In fleet formation vessels are sup
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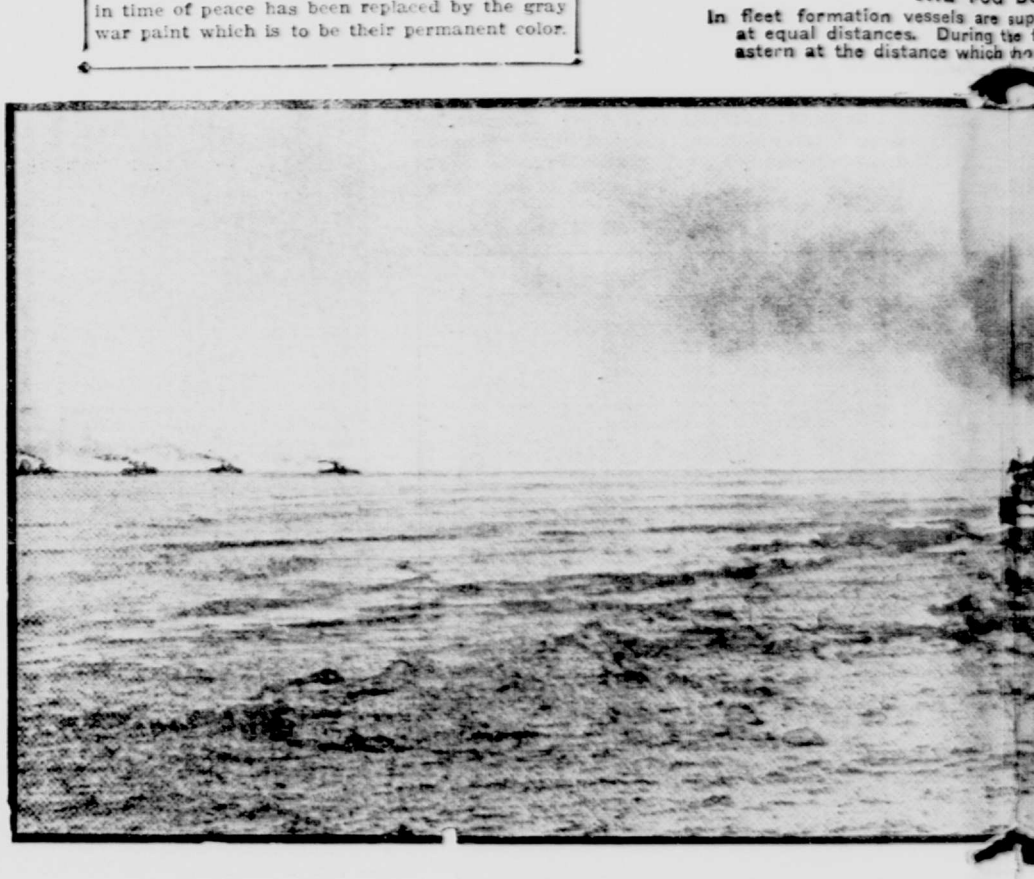
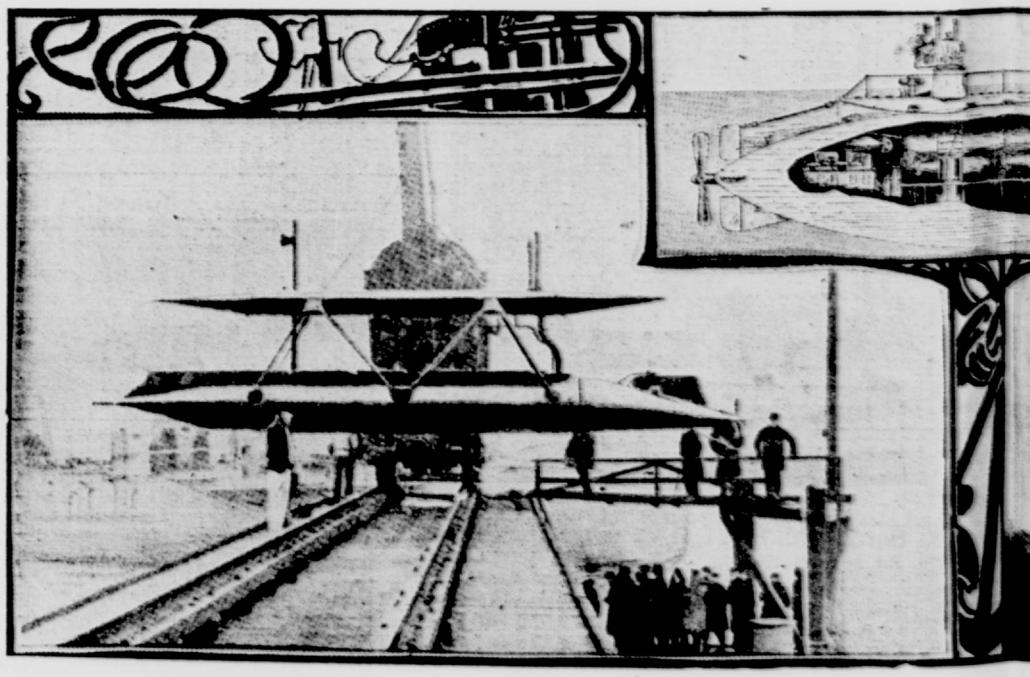


THE RANGE AT WHICH MID
The fleet representing the enemy is on the

INTERIOR OF A SUB



A NEW TERROR IN WAR: THE FRENCH "WIRELESS" TORPEDO.
The "radio-automatic" torpedo, invented by M. Gustave Gavet, is directed on the wireless telegraphy principle. Its speed and direction may be altered at will, and it cannot be interfered with by any other station than that from which it is sent. It carries more than a ton of guncotton.
—The Bystander.