



By means of a trigger which moves but forty inches, an aeroplane can be catapulted into the air with a velocity equivalent to a run of forty feet on the ground. This new invention advances the use of aeroplanes at sea far beyond anything yet achieved

Catapulting Seaplanes from Battleships

A FEW years ago, when the thought of using aeroplanes in connection with battleships occurred to naval officers, the problem of launching was solved in a crude way by means of temporary inclined platforms built on the deck. Apart from the military objection to such a structure, the weather conditions had to be decidedly favorable in order to insure a successful start for a flight. At no time was it considered practicable to launch the flying machine while the ship was in motion. The machine ran down on the platform on the regulation wheels of a land machine; they were not real seaplanes.

It was apparent that the hydro-aeroplane or seaplane would have to be carried temporarily upon a car or truck from which it could be detached at the right moment and allowed to rise of its own impulse by reason of the supporting pressure of the air due to the speed acquired in a short run. It was also clear that the car would have to be quickly accelerated to full speed within a run of something like forty feet. This rapidly gathered headway had to be insured without jerks or jars. To this end Captain Washington I. Chambers

of our navy has devised a compressed-air catapult, the compressed air operating a piston which, in its turn, actuates a wire rope traveling over pulleys. A movement of but forty inches on the part of the piston is multiplied so as to draw the car forward forty feet.

To-day, the catapult has been so far perfected by the Bureau of Construction and Repair of the Navy Department that it has become a permanent feature aboard the aviation ship U. S. S. *North Carolina*. It is now possible to launch in flight the service seaplanes while the cruiser is steaming along at fair speed.

The seaplane's motor is set going before the catapulting process is started. In fact, the pilot does not give the signal for launching until his engine is working just right. The impulse air for working the piston is drawn right from the torpedo air-supply system, and the working pressure is something like three hundred pounds to the square inch. By means of a cleverly designed valve the air is admitted progressively to the cylinder, and in this way the desired maximum speed is reached from zero without shock.

In the future, our navy, when hundreds of miles from shore, will be able to send its seaplanes skyward with measurable indifference to the weather.