

THE MACTAGGART, SCOTT & CO. CATAPULT : View of right side, looking forward. The catapult and trolley are in the "stowed" position.

airscrew thrust are these detents released (automatically), and there is thus no risk of the aircraft being pulled out of the trolley forks prematurely. The gear which releases the detents at the same time releases a locking device on the oleo legs. When the trolley reaches the end of its accelerating travel it is retarded by the actuating mechanism, and the aircraft then flies off as soon as the airscrew thrust begins to work (the thrust is, of course, small during acceleration). As soon as the weight of the aircraft is taken off the forks, the four legs fall down in order not to foul any part of the aircraft. The four tubes which support the aircraft are, by the way, adjustable sideways, while the rear legs are also adjustable fore and aft. Thus, aircraft of various sizes and with different distances between their four trunnions can be launched from the same trolley.

The Structure

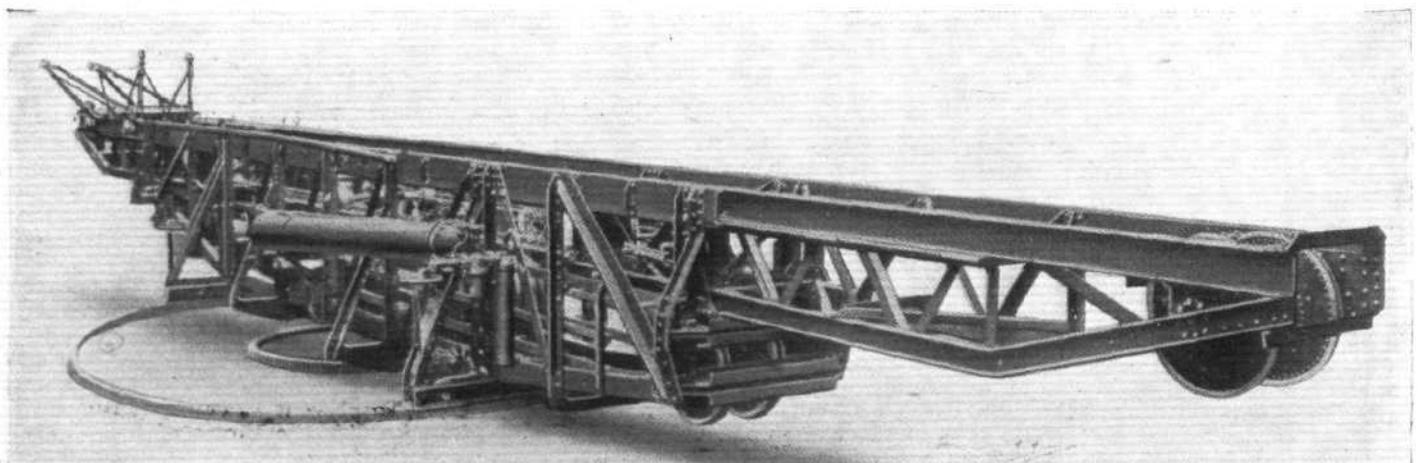
As already mentioned briefly, the main structure of the catapult consists of three parts: the main central structure, the forward extending portion, and the rearward extending portion. The whole structure is built up of high tensile steel sections. The central fixed frame is braced outwardly, while the two extending portions are braced internally, so as to

provide clearance for the extending portions to travel inside the fixed frame. To facilitate transport, the main central frame is divided in its centre, so that it can be taken to the site or ship in two halves. There it is erected and bolted together. The two extending frames are similar, and each is half the length of the fixed central frame, so that when the catapult is in the "stowed" position, the extending frames are entirely housed within the fixed frame.

The Actuating Mechanism

The mechanism which transmits the power for catapulting to the trolley is a piston or ram working in a power cylinder. The ram does not, however, work direct on the trolley. It is connected to the trolley by cables running over a series of pulleys in such a fashion that gearing-up is provided, the travel and speed of the trolley being four times the travel and speed of the ram. Actually, there are two sets of cables, one of which, as stated, transmits the thrust of the ram to the trolley, while the other is a retarding cable, and transmits the kinetic energy of the trolley to the ram, during retardation.

The power cylinder is rigidly fixed to the main structure. At one end the ram is attached to the piston, and at the other it carries eight pulleys on a cross-head. Bolted to the



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