and to set at rest in as final a fashion as possible the conflicting claims of makers and inventors. A board was therefore created. * * * A preliminary report has been made by this board, selecting the Vickers-Maxim type for heavy machine guns, recommending the purchase of a large supply of them, and fixing a date in May at which time exhaustive tests to determine the relative excellence of various types of light machine guns are to be made.

In accordance with these recommendations, 4,000 Vickers machine guns were ordered in December, 1916. By the end of the next year 2,031 of them had been delivered. In further accord with the recommendations of the board, careful tests were held in May, 1917, of various types of heavy machine guns, and also of light machine guns, which have come to be known as automatic rifles. Rapidity of fire, freedom from stoppage and breakage, accuracy, weight, ease of manufacture, and other factors were all carefully examined.

The Vickers gun justified the good opinion previously formed of it, but it was clear that it could not be put on a quantity-production basis because of technical difficulties in manufacture. Fortunately, a new gun well adapted to quantity production was presented for trial. This gun, the heavy Browning, performed satisfactorily in all respects and was adopted as the ultimate standard heavy machine gun. The light Browning, designed by the same expert, was easily in the lead as an automatic rifle, weighing only 15 pounds. The Lewis gun, too heavy for satisfactory use as an automatic rifle and not capable of the long-sustained fire necessary in a heavy gun, was very well suited, with slight modification, for use as a so-called flexible gun on aircraft. A small number (2,500) of these guns were ordered for training purposes for ground use, but the bulk of the possible production of this gun was assigned to aircraft purposes. In addition to the flexible type, airplanes require also a synchronized gun; that is, a gun whose time of firing is so adjusted that the shots pass between the propeller blades. The Vickers gun had been used successfully for this purpose in Europe and the call was insistent for their diversion to this use, both for our own planes and for those of the French. After many trials and adjustments, however, the Marlin gun, a development of the old Colt, was adapted to this purpose, releasing part of the