

Searchlights—The Night Eyes of the Army

By FRANK C. PERKINS

THE accompanying photograph shows a recent design of American portable auto searchlight for military field use as demonstrated at the Marine Barracks, League Island Navy Yard, Philadelphia, Pa. It was also tested out before the Engineering Department at the Washington Barracks, and the Maryland State Militia made very interesting experiments with it in their maneuvers. It is stated that after the first test was made at League Island, a very thorough report was made by the officer in charge, which showed that on a dark night with sleet falling, each lamp gave good illumination at distances up to 1,500 yards. The military officials have taken particular interest in this auto searchlight because of the conditions in the European war and during the operations of the American Marine Corps at Vera Cruz and Culebra showed the need and the varied uses for such an equipment.

It is pointed out that the features to be incorporated in any such portable light must include reliability, ruggedness, ease of carriage and construction of such nature that all of the set may be quickly assembled and placed in operation. The electrical apparatus of the equipment is mounted on a special body on an autocar chassis. The body is designed so as to furnish protection for the power plant, and to support the four reels of flexible cable, and the spring mounted tracks on which the two searchlight hand trucks rest. These springs are quite essential in eliminating road shocks from the delicate mechanism of the lamps.

It is of interest to note that the power plant consists of a gasoline motor with $4\frac{3}{4}$ " x $4\frac{1}{2}$ " cylinders, coupled direct to a 7-kilowatt direct-current generator. This generator is designed to run at 1200 revolutions per minute, at which speed it gives 125 volts and delivers 56 amperes. The motor is equipped with a fly-ball governor, regulating the speed within very close limits. The motor driving this generator is supplied with its own gasoline tank, and also an independent radiator kept cool by a high-speed fan.

It may be stated that the two hand trucks which carry the searchlights and reels of flexible wire are constructed entirely of steel and aluminum, and have each two wire wheels equipped with 28" x 3" pneumatic tires. These trucks are light in weight and rigid in construction, and so designed that they have large road clearance beneath the light to enable them to be operated in very rough country.

For supplying the necessary current each light carries 1350 feet of cable, divided into two lengths of 675 feet each, so that each lamp can be operated independently of the other at a distance of one-quarter mile from the generating plant. By means of specially designed attachment plugs and reel arrangement, the light can be operated at any distance within the limits of the cable from the power plant without unreeling all of the wire to get at the inner end. The inner ends are arranged to pass thru the heads of the drums, so that the attachment may be readily made. Each searchlight measures 14 inches in diameter and has an arc of five thousand candle-power, and

is effective up to a mile on a good clear night.

It is declared that in order to get the maximum value of the lamp, the observer

U. S. Army electric searchlight, fitted with a collapsible steel mast of considerable height. These searchlights are intended for special work and can be removed from

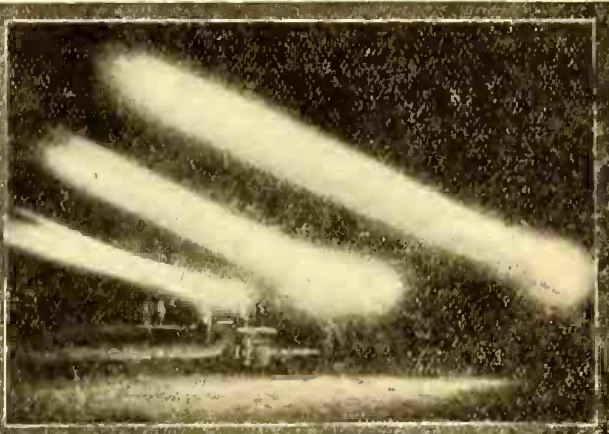


Photo © by Central News Photo Service

Above:—Battery of Powerful Electric Searchlights to Be Used by Uncle Sam's Boys in Fighting Back the German Hordes.

At Left:—Close-up View of One of the U. S. Army Searchlights Mounted on a "Climbing Mast." It Can Be Rapidly Elevated to a Considerable Height.

stands at some distance to one side, and by means of a field telephone the officers control the operation of the light as found necessary. Some of these field searchlights are fitted with remote control attachments so that the beam can be focused on the target or object by simply pressing a series of buttons a quarter of a mile away.

The Italian army held a mountain pass, at the base of which ran a turbulent stream. The Austrians were in force on the opposite cliff. This is what the sons of Garibaldi did: they prepared a powerful battery of electric searchlights near the top of the mountain, well camouflaged. At night they flashed a perfect blast of blinding white light down on the Austrian lines, while in the cover of abrupt darkness below their searchlight beams, the brave Italian engineers worked like demons and swung rope bridges across the stream, which was of considerable width.

One of the photos herewith shows a new

truck when desired. They are fitted with reels of flexible cables as will be seen, these reels maintaining continuous contact with the feed wires from the dynamo at all times, by means of a brush and ring arrangement.

Electric searchlights are invaluable as a protection against enemy air raids upon towns or cities. Since many coast cities are now in darkness at this time, these pictures are of added interest.

One of the photos shows a climbing mast fully elevated. This elevating attachment is used in case the lights are hidden behind trees, walls or bushes for the purpose of concealing them from the enemy observers. This photo was made at the Mobile Anti-Aircraft Section of the Engineering Corps, Washington Barracks, Washington, D. C.

The third photo illustrates a battery of searchlights in operation at night locating aeroplanes that are sent up for the purpose of detecting enemy aircraft.



For Rapid Maneuvering of Troops at Night the U. S. Forces Will Have Available a Large Supply of These Auto-truck Searchlights.