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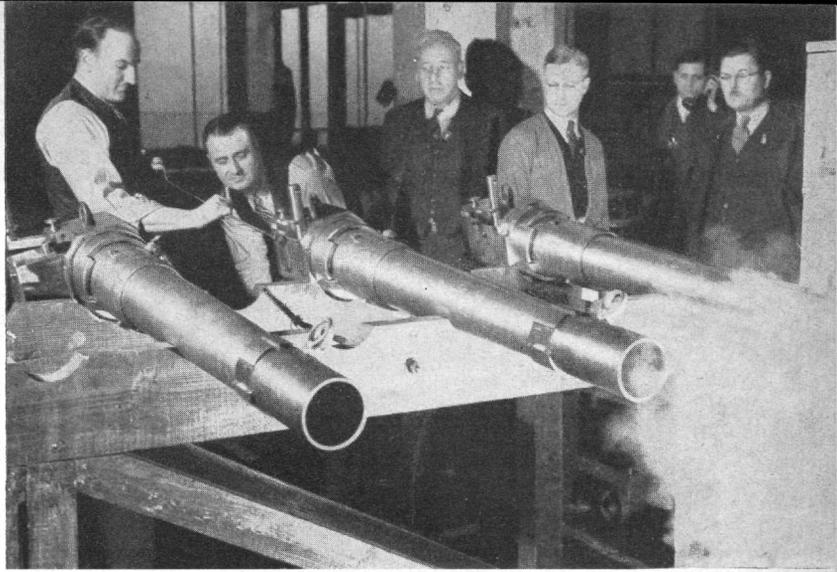
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Motor-Making Equipment Adapted for Manufacture of Defense Howitzers

William Horton, Engr. I



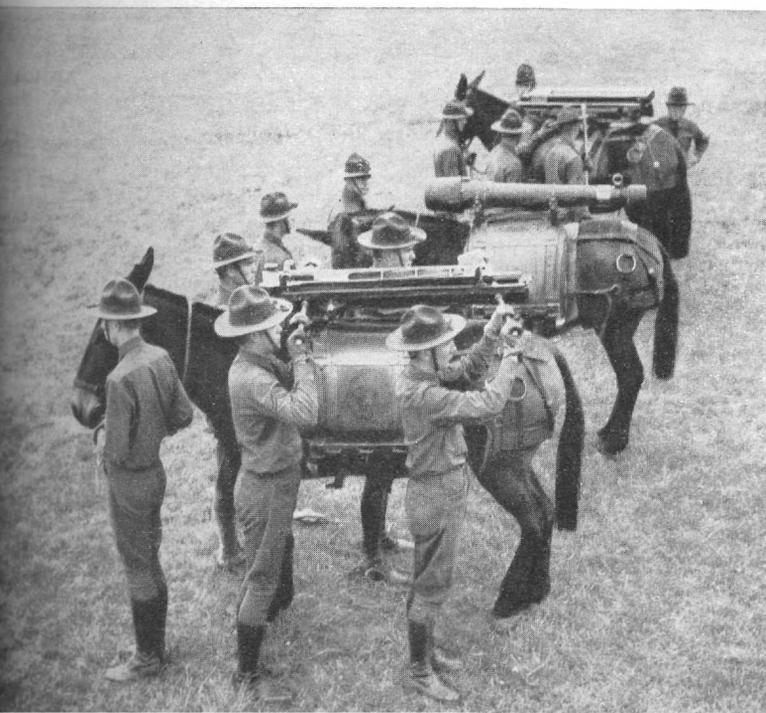
Row of 75-mm pack howitzers are carefully hand finished and fitted under the eyes of the Army inspectors. As a final test, primers in empty shell cases are fired in each 75-mm howitzer to check the breech mechanism.

The latest 75-millimeter pack howitzers for the United States Army are being produced at the General Electric plant at Erie, Pennsylvania, largely on machines previously used for making electric motors for street cars and locomotives.

Originally designed for mule transport, howitzers of this type are now towed on pneumatic tires by motorized troops. Some batteries have been carried by airplane in maneuvers. The weapon hurls a 15-pound shell nearly three inches in diameter more than five miles.

The fact that the howitzer is only 47 inches long permitted boring operations to be performed on turret lathes already in the plant and, with some changes, other tools on hand were adapted for the work. Special rifling equipment had to be installed. Assembly line production has been under way for some months with the men who formerly made motors now making howitzers.

Below: Mules are still used to carry howitzers, but they are also transported by airplanes and mechanized units. (Photo by U. S. Army Signal Corps.)



Portability, maximum striking power for its weight, and complete interchangeability of parts are features of the pack howitzer. It can be quickly disassembled into parts small enough to be moved on mules and reassembled with interchangeable parts. The heaviest part is the gun tube, which, with its muzzle and breech hoops, weighs only 221 pounds. A feature of the howitzer is its ability to drop projectiles accurately behind hills, buildings or other obstructions.

All through production inspections are necessary. Parts must be made to exact measurements as the howitzers are assembled in the field with few or no tools. Parts must have definite fits and must withstand enormous stresses in firing.

After individual parts have been finished by the machinists and have been checked by the Army inspectors, they are sent to the assembly floor where hand operations are performed. There the machining burrs are removed and the parts are given their final polish. Tungsten carbide tools are employed in the turning operations.

At one point the bore of the tube is inspected with the "borescope", a tube which extends into the bore and carries a mirror at the far end reflecting an image of the surface into a microscope. Illuminated by an electric lamp, the surface is magnified 20 times in order that any defects may be detected.

Individual parts are inspected and then assembled and reassembled at random to test their interchangeability. Three rounds of primers in empty shell cases are then fired in each howitzer to check its breech mechanism. A final inspection is made and packing cases receive the howitzers, ready to be shipped out for their mountings, recoil mechanisms, and other parts.

Courtesy General Electric Editorial Service