

MEDICINE

New Detector Locates Metal Fragments In War Wounds

Radio Frequency Circuit With Movable Coil Enclosed In Steel Finger Used With Success at Pearl Harbor

PIECES of metal may now be removed from war casualties and victims of accidents with unprecedented facility and speed. The old method using probes and X-rays often takes one or more hours compared to the new record of a few minutes.

The revolutionary technique is based on the use of an instrument known as the Moorhead Foreign-Body Finder. By means of this guide surgeons may definitely locate bits of steel or other metals easily and quickly. The instrument was designed by Col. John J. Moorhead of the U. S. Army, professor of traumatic surgery at the Army Post Graduate School in New York City. It was used for the first time in Tripler Hospital, Schofield Barracks, after the Japanese raid at Pearl Harbor, Dec. 7.

On the morning of the attack Col. Moorhead—a visitor in Honolulu—was lecturing to a group of physicians. When the call came for medical help he accompanied the doctors to the army hospital. Col. Moorhead's instrument was used successfully that day to locate fragments in 20 cases and in many more to prove the absence of any imbedded metal.

Col. Moorhead has made a study for years of the methods of detecting foreign bodies in tissues and wounds. He served for two years in France during World War I and was decorated for excellence in war surgery. He felt that there was a definite need for better means of locating embedded metal fragments. His foreign-body finder was designed to fill that need.

The finder consists of a radio frequency circuit mounted in a box, with a movable coil or capacity attached by a wire and inclosed in a steel finger. The steel finger—about one-half inch in diameter and about 12 inches long—is water-tight and the wire to which it is connected is covered with rubber so that they may be detached and sterilized by boiling.

As the indicator approaches a piece of metal there is a deflection on a

millimeter. One knob of the instrument adjusts for iron fragments and another for other metals.

In use the indicator is passed above or around the wound in two planes at right angles to each other. At the points of greatest deflection marks are made on the flesh. The projection of these points indicates the position of the metal fragment. If this is not sufficient the indicator may be introduced directly into the wound, even in lung, brain, or abdomen.

Col. Moorhead's instrument has many advantages over the old method using X-rays. It cuts the time needed to remove the fragments to a mere fraction of that formerly required. This is not only a great boon to the individual pa-

tient but in times of disaster allows the surgeons to treat many cases within the first six hours known as the "golden period" of surgery. The instrument is cheap to construct and operate and constitutes an enormous saving over that of the ordinary X-ray outfit, perhaps a hundred dollars or so compared to five to ten thousand. The machine is easily portable. The box is about one by one by two feet and weighs approximately ten pounds.

Dr. F. J. Halford, Honolulu surgeon who worked with Dr. Moorhead on Dec. 7, says:

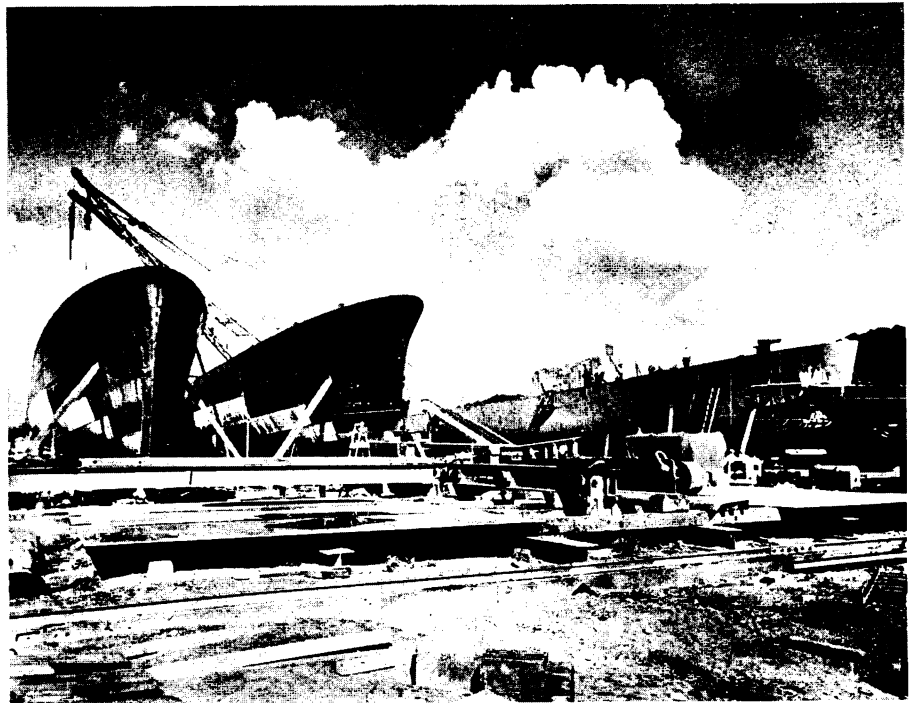
"The Moorhead Finder will probably equal or supersede the X-ray in this type of work not only in emergencies but under the best conditions."

Science News Letter, January 31, 1942

PHYSICS

Officer Invents Furnace For Gas Mask Charcoal

AN electric furnace for preparing activated charcoal, such as is used in gas masks, has been invented by Col. Maurice E. Barker of the Army's chem-



TO CHASE SUBMARINES

Production line methods have been applied to the construction of submarine chasers at Pittsburgh, Pa., where a number of the Diesel-powered vessels are being constructed by the Dravo Corporation. These craft are built in sets of three, upside down and in three sections. When the hulls are completed, the vessels are righted as shown and placed on the ways. The photograph is used through the courtesy of the Lincoln Electric Company.