RADIO—AERONAUTICS

German Bombers Believed Getting Directions by Radio

Neutral Stations Unwittingly Serving for Bearings With Radio Compasses; May Use Ultra Short Wave, Too

GERMAN bomber - reconnaissance planes, the accuracy of whose long distance flights to pinpoint objectives in England and France like the Shetland Islands has been mystifying many, have probably been making use of neutral radio stations as unwitting partners in their ventures.

They are probably taking radio direction bearings on Belgian, Dutch, Luxemburg and Swiss stations by means of radio compasses and specially prepared charts showing the particular bearings they ought to get on one point in order to arrive at another, it is believed.

British and French program stations have either been shut down or moved to secret sites so as not to give away the location of the metropolitan centers in which they are normally located.

The possibility that "radio fixes" could also be secured by spies equipped with ultra short wave transmitters is also to be considered. Warplanes cannot, of course, use ordinary peacetime radio navigation methods as they would give away the raiders' location.

A continuous wave in the television bands, not now used as all television broadcasting stopped with the outbreak of war, can be transmitted by simple and light apparatus consisting of little more than a battery, a piece of brass pipe and some wires. Even without anything more than rudimentary antenna, experts believe a skilled operator could send out a wave which a plane's radio compass could pick up at a distance of 50 to 75 miles or more. Ultra short waves, like light, do not carry beyond the horizon, but the receiving plane would be well above the horizon—as high as 27,000-30,000 feet or even higher. War flights at those altitudes are not rare. One German bomber was caught at a height of 27,000 feet.

Such radio equipment would be difficult to hunt down.

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PHOTOGRAPHY

Photo Stencils of Fine Wood Used on Low Cost Furniture

IF YOU see a beautiful piece of furniture these days at an amazingly low price look carefully. It may be made by a new process in which the art of photography is now used to make stencils, simulating the finest, rarest of woods, for finishing low-cost furniture.

By this new advance a photographic representation of rare walnut lumber can be placed on inferior wood so skillfully that the layman cannot tell the difference. By the same means printing can be accomplished on metal objects like signs and on leather, rubber, glass, ceramic products, felt and textiles.

In the new process, adapted by Harry L. Hiett of Chicago, a photograph is made of the rare wood. The negative shows the intricate grain of the wood. This negative is laid on a special sheet of sensitized gelatine with a firm celluloid backing. Through the backing, light from an electric light shines for a ten minute exposure.

The resulting print is developed by washing it in warm water until the purple dye of the gelatine is removed and the hot water partially dissolves the gelatine in proportion to the depth of high lights and shadows. Both development and printing take place in a lighted room.

When developed the gelatine is laid on a glass surface and over it is placed a strip of fine mesh silk cloth. With a soft blotter the silk is pressed into the soft gelatine until it is firmly embedded. When dry the celluloid falls away from the design leaving a perfect stencil on the silk.

With the stencil ready the low cost board on which the design is to be printed, is next placed on the bed of a special press. On top of it goes the silk stencil. Then special paint is squeezed through the silk stencil directly on to the surface of the wood.

The varying thickness of the gelatine sheet, formed by the highlights and shadows in the original photograph, offer varying resistance to the passage of the paint and the result is a replica—though only paint deep—of the beautiful rare wood design.

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