

OPTICS

Ultraviolet Searchlights

Planes were not equipped with this light during the war because some can see it. Plan was perfect in theory but impractical.

► A WAR-DEVELOPED plan for landing planes on carriers in pitch-black darkness by the use of ultraviolet "invisible" light was never put into actual use because it was discovered that a few eyes can see this so-called invisible light.

The plan, perfect in theory but impractical in war, was revealed by Dr. E. D. Tillyer of the American Optical Company. In the plan, airplanes were to be equipped with searchlights sending out only ultraviolet rays. When returning to their mother-ship these rays would be used in locating the carrier.

The carriers were to be equipped with special reflectors each with a fluorescent button which the ultraviolet rays would cause to glow brilliantly. The diffused fluorescent light from each button would be collected by the complex curves of the mirror and concentrated through a special lens that would send a very narrow beam back to the plane.

This returning visible beam is so narrow that an enemy pilot, flying wing to wing beside the landing plane, could not see the fluorescent light outlining the carrier. Its spread after traveling more than a mile was only a few feet.

Tests made by University of Rochester scientists, who developed the reflectors, revealed that a few persons have eyes that can see the ultraviolet rays used although they are invisible to most eyes. An enemy pilot might happen to have this unusual ability. In that case he could see the beams sent out by the plane and locate the plane. However, he could not see the outline of the carrier unless he were directly within the path of the returning fluorescent beams.

Although the Schmidt-type correcting lens developed for use in the ultraviolet reflector could not, from a war-time standpoint, be used for that purpose, it is used in another instrument still held a secret by the Navy. A similar lens has been developed by American Optical scientists for use in television reception.

Ultraviolet waves are similar to ordinary light waves but are of a different

length. They are beyond one end of the so-called visible spectrum, with its seven primary colors. Invisible infra-red rays are just beyond the other end. These are often called heat waves, and they were used for "seeing" in the dark in the Army's sniperscope. By electronic means they made visible an object otherwise hidden to the eye.

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VETERINARY MEDICINE

Cleaning of Cars Combats Foot-and-Mouth Disease

► FOOT-AND-MOUTH disease of cattle is not going to ride the rails, if the Mexico-U. S. combat team can help it. Cattle cars reaching the yards in Mexico City get a three-stage going-over that cleans them thoroughly and destroys any possible lingering virus before they are used again.

First, a cleaning force removes all litter and manure. Then the cars are shifted to another siding, where they are thoroughly hosed down. After drying, they are disinfected inside and out with a spray of caustic soda.

Cars that have been thus treated are sealed and placarded as safe for further

use, then sent out into the cattle country again. Three technicians, one of them Mexican, the others American, personally supervise the cleaning and disinfection of every car.

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GENERAL SCIENCE

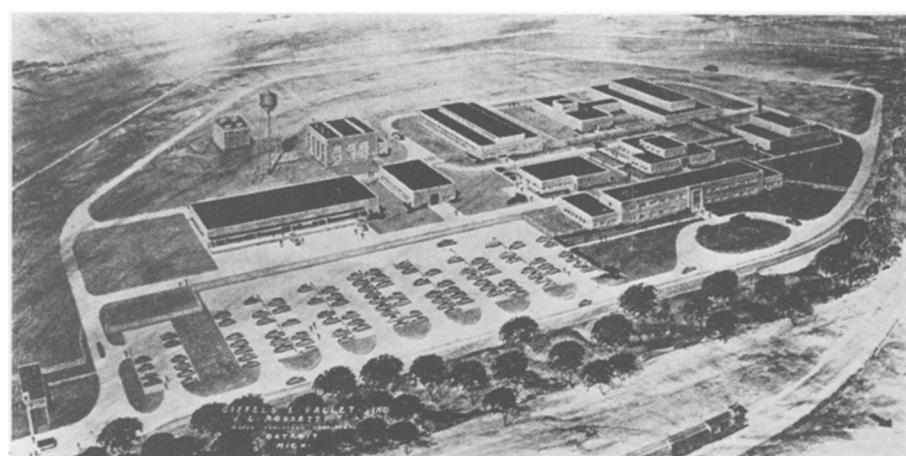
Human Resources Committee Has Psychologist as Head

► DR. DONALD G. MARQUIS, chairman of the department of psychology at the University of Michigan and president of the American Psychological Association, has been named chairman of a committee on human resources of the Joint Research and Development Board.

Board Chairman Vannevar Bush, president of the Carnegie Institution of Washington, said the new committee will study the human element in both military problems and civilian defense.

Members of the committee in addition to Dr. Marquis are: Dr. C. L. Shartle, executive secretary of the personnel research board, Ohio State University; Dr. Frederick F. Stephan, department of sociology, Cornell University; Dr. Samuel A. Stouffer, department of social relations, Harvard University; Maj. Gen. Fred L. Anderson, Maj. Gen. Raymond W. Bliss and Col. Fred C. Milner, representing the U. S. Army; and Dr. A. H. Hausrath of the Office of Naval Research, Rear Adm. J. W. Roper and Capt. D. T. Eddy, representing the U. S. Navy.

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ATOMIC ENERGY FACILITY—Part of this structure not shown in the architect's sketch is to be underground in order to obtain necessary conditions for certain types of atomic energy research. Constructed of red brick, the building will be completed in Miamisburg, Ohio, early next year.