

PHYSICS

Speed Pictures by Flash

A "still" photograph of a wheel revolving at 70,000 revolutions per minute can be taken with a new, easily portable mercury flash lamp outfit.

► A NEW compact high speed electronic light unit has been developed by the engineers of the General Electric Laboratory, with the direction of S. Lawrence Bellinger, which can take photographs with an exposure of only one-millionth of a second. High speed photographs taken in recent years are only one thirty-third as fast as this new unit.

A portable box 10 inches square, weighing under 20 pounds and containing a mercury lamp about the size of a cigarette constitutes the entire device. The light source on the front of the box resembles an auto headlight and can be operated either manually by means of a push button, by electrical contacts or by a phototube and preamplifier. It will illuminate an area of twenty square feet with sufficient light intensity to photograph the fastest moving objects.

Some features of this new high speed unit are its standard replaceable electrical parts, together with one electronic tube and a 100-watt Mazda mercury

lamp. It can be operated on an ordinary 115-volt alternating current household lighting circuit. The current is rectified by an electronic tube and then used to charge a capacitor which serves as a sort of electrical storage tank. There is enough power accumulated in three seconds to operate the lamp at full intensity. The energy used in each flash is so slight that it is only sufficient to light a 40-watt lamp one-tenth of a second. The small mercury lamp has a life value of one second, which makes it good for one million exposures. This would be equal to 500 years of an average newspaper photographer's work. Lamps of this type are now being used as high-intensity light for illuminating airports, television, motion picture studios and various other means.

Although complete experimental tests have not been made, due to the pressure of war work, photographs have been taken of high-speed machinery such as turbines and supercharger parts. A "still" photo of a wheel revolving at 70,000 revolutions per minute has been taken with this new device.

Science News Letter, July 24, 1943

PUBLIC HEALTH

Keep Ham In Refrigerator To Avoid Food Poisoning

► BE SURE to keep the ham in the refrigerator, if you want to avoid having yourself, your family and guests get sick with food poisoning or ptomaine poisoning as it used to be called. Food poisoning rarely kills anyone, but it is most unpleasant and may be so weakening that the victims lose considerable time from work.

Probably the most common cause of food poisoning is the staphylococcus, a germ which is also familiar as the cause of boils. When these germs get into food they can, under suitable conditions, produce a poison which will sicken the person eating it or food containing it. You cannot tell from either the taste or smell when ham has this poison in it.

Staphylococci are very common germs, found on fingers, hands and in the air, so it is almost impossible to keep some

of them from getting into food. It is quite possible, however, to prevent the conditions that lead these germs to produce their poison in the food. The chief measure for controlling this situation is keeping food at low temperatures until it is to be cooked and eaten.

Ham and tongue come right after custard-filled bakery goods in the number of food poisoning outbreaks caused. The rapidly cured, pre-cooked, and ready-to-eat hams now on the market are particularly dangerous. These are safe when they leave the packer, but the danger is that so many people fail to realize that they must be kept really cold in the refrigerator.

Ham sandwiches made from ham that had been subjected to a tenderizing process caused an outbreak of food poisoning among patrons of an upstate New York restaurant recently, the state health department reports. Those who ate the ham the day it was cooked escaped. But the next day the restaurant's mechanical refrigerator broke down. Even though two large pieces of ice were put into it, it apparently was not cold enough to keep the ham from being poisoned by staphylococcus germs.

Science News Letter, July 24, 1943

AERONAUTICS

New Process Shortens Time For Doping Plane Surfaces

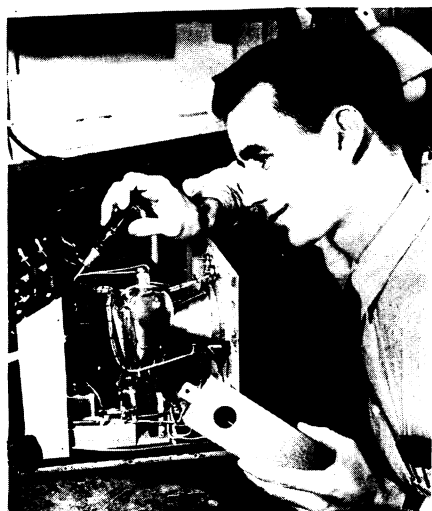
► NEW LACQUER and a process for pre-treating fabric are expected to speed "doping" of plane and glider surfaces by nearly a third. This time-saving team is a duPont development now in production.

In the past, vast amounts of special cotton fabric have been transformed into a taut and tough outer hide for training planes and gliders by stretching the cloth over the aircraft framework and applying dope with brush and spraygun plus laborious sanding.

Now the plane fabric can be pre-treated before shipment to the plane plant. Use of the method permits scarce solvents to be reclaimed and used over and over. Some of the subsequent doping and sanding is eliminated.

Pre-doping can be coupled with the new type of lacquer, which contains a fifth more film-forming solids than had been practical heretofore. All slow paint brush work has now been replaced by high-speed spraying, the company reports, and the lacquer still further reduces the number of coats needed to finish a plane.

Science News Letter, July 24, 1943



FLASH PHOTOGRAPHY — The inside of a portable millionth-of-a-second flash light for photography is being shown by S. L. Bellinger, a General Electric engineer. The phototube accessory equipment which may be used in fast operation of the light is held in his left hand.