Corporation, and Mr. Arthur Davis, Chairman of the Board of the Aluminum Company of America, tests showed that it filtered out an average of over 50 percent of the nicotine in tobacco smoke. These tests were conducted by chemists in the Aluminum Research Laboratories. Since then, the holder has been improved so that now all smoke must pass through the inserted filter-cigarette, and the nicotine-removal percentage correspondingly raised. An official report rendered by the Laboratories of the Italian Government Tobacco Monopoly states that the holder with a single filter-cigarette removes 70.5 percent of the nicotine, and the one with two cigarettes removes 93.8 percent.

While this scientific development may seem an obvious one to laymen, it is the result of considerable research. The aluminum barrel, for example, was not a mere haphazard choice for the sake of convenience; it was selected because a metal of high heat conductivity was needed so that the volatile substances in the smoke would cool rapidly and be deposited within the filter cigarette.

## DRIVERS

ALTHOUGH the accident repeaters among automobile drivers constitute less than 4 percent of the driving population, this small group is responsible for nearly 40 percent of the automobile accidents in this country. Much of the study of the accident prevention problem should therefore be concentrated on these individuals.

## POLAROID FOR DESK Illumination

A<sup>N</sup> entirely new type of illumination completely free from reflected glare was recently shown to the public when Polaroid Lighting, Inc., introduced the first lighting unit of this type, a desk lamp.

Polaroid, the material effecting this control of light, is the invention of the Boston scientist Edwin H. Land. It has also been mentioned as the solution to the problem of eliminating automobile headlight glare, and has been used in sunglasses.

Mr. Wheelwright, of the Land-Wheelwright Laboratories, explains the action of Polaroid as used to eliminate glare in illu-



The first Polarized lighting unit, intended primarily for desk use



Ordinary lighting of a magazine (top) and resulting glare. Bottom: Same, lighted with polarized light

mination. The accepted scientific version of many aspects of ordinary light is a series of waves vibrating in all directions at right angles to the light beam. Light waves vibrating up and down penetrate the paper and ink when they meet the reading surface and come out with the color message and detail. Other light waves, vibrating from side to side in the same beam, strike the paper horizontally and glance off the surface as a stone does when skipped on water. These latter waves represent the glare which conflicts with useful light and impairs vision.

Polaroid acts as a selector, letting through the vertical waves but shutting off the horizontal ones that cause glare. With glare eliminated, other lighting problems can be solved, he pointed out. The light source may be placed directly in front of the reader, thus assuring even distribution of light across the page without concern as to reflections. While the reader has no sense of brightness with Polaroid illumination, much higher intensities can be maintained.

Professor Robert W. Wood, regarded as the greatest American authority on optics, has said of Polaroid: "It is the most significant invention in the field of optics, certainly within the last generation, probably in the last century."

## Marihuana More Dangerous than Heroin or Cocaine

MARIHUANA is "a more dangerous drug than heroin or cocaine." Authority for this statement is United States Commissioner of Narcotics H. J. Anslinger. Mr. Anslinger's statement was made as part of a report on narcotics appearing in the bulletin of the Federal Bureau of Investigation.

"I am surprised to learn that certain police officers have been inclined to minimize the effects of the use of marihuana," *Science Service* quotes Mr. Anslinger. "These officers should review some of the cases that are reported to the Bureau. They would, I am sure, be convinced that the drug is adhering to its Old World traditions of murder, assault, rape, physical demoralization, and mental breakdown. A study of the effects of marihuana shows clearly that it is a dangerous drug, and Bureau records prove that its use is associated with insanity and crime."

Effects of marihuana, according to an authority quoted by Mr. Anslinger, are as follows:

"1. Feeling of unaccountable hilarity.

"2. Excitation and a disassociation of ideas; the weakening of power to direct thoughts.

"3. Errors in time and space.

"4. Intensification of auditory sensibilities, causing profound dejection or mad gayety.

"5. Fixed ideas; delirious conviction. This is a type of intellectual injury so frequent in mental alienation. The user imagines the most unbelievable things, giving way to monstrous extravagances.

"6. Emotional disturbance during which the user is powerless to direct his thoughts, loses the power to resist emotions, and may commit violence which knows no bounds when disorders of the intellect have reached a point of incoherence. During this dangerous phenomenon, evil instincts are brought to the surface and cause a fury to rage within the user.

"7. Irresistible impulses which may result in suicide.

"The illusions are those of sight, hearing, and sense. The mind loses all idea of space and extent, and tends to exaggeration in all things; the slightest impulse or suggestion carries it away."

## CALCULATOR SAVES MILLIONS

**E** NGINEERS completed recently their 184th "inspection trip," covering thousands of miles of the nation's power systems without moving outside their laboratory in the East Pittsburgh works of the Westinghouse Electric & Manufacturing Company.

The inspections, rounding out a sevenyear study of abstract problems with concrete results, enabled the engineers to tell the utility companies exactly what power load their systems were capable of carrying with safety and economy without additional equipment. They also determined quickly what additional equipment was required for expansion of the power transmission services.



Adjusting a circuit on the alternating current network calculator