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"G Men" on Job Hazards

sleuthing covers a wide range of products and processes potentially detrimental to the health of exposed workers.

Those versatile new epoxy-resins, for example, are a frequent cause of troublesome skin rashes. Welding fumes and irritating dusts often lead to inflammation of the eyes. Acids eat away tooth enamel, causing decay and ruining the appearance of workers' mouths. Most serious of all are the systemic poisons, ranging from old-fashioned arsenic and mercury to the new boron compounds used in rocket fuels and the manufacture of plastics. Prolonged exposure to some of these highly toxic substances can bring on ailments of the lungs, liver and kidneys and even increase the incidence of cancer.

Industrial companies and insurers may call on the foundation's staff of health experts to provide information on a single product or to evaluate the hazards in an entire plant or industry. Experienced hygienists size up such hazards with an environmental survey, climbing smokestacks and prowling assembly lines to collect samples of fumes, vapors and dusts for study in the foundation's laboratories. There, toxic concentrations can be accurately measured and their effects tested on rabbits, rats and other experimental animals. The foundation's engineering staff has also invented a number of air-pollution instruments to make possible long-range studies of a single plant or an entire city.

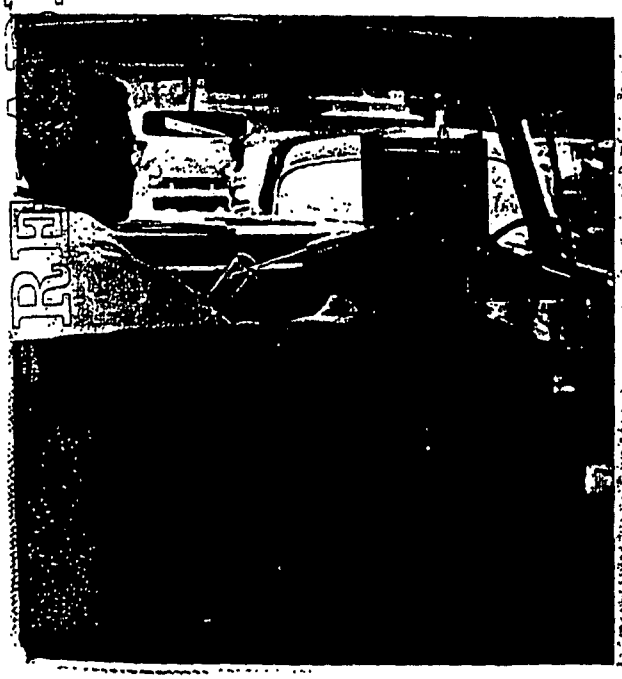
One industry-wide project undertaken by the foundation involved a study of heat exposures in the glass industry. Manufacturers wanted to measure the effectiveness of their ventilating systems and "man-cooling" fans, particularly for production employees working near hot machines. The foundation's experts reported that some workers were still absorbing dangerous amounts of radiant heat, which cannot be reduced effectively by ventilation. They devised aluminum screens to shield the machines and thereby cut workers' exposure by 75 per cent. Other extensive field projects have included a community air-pollution study for the city of New Haven, Connecticut, an evaluation of a large oil company's medical facilities and preventive medicine program, and the development of techniques for tracking stack gases over long distances.

Not all research is conducted in the field, however. Some of the foundation's most useful work consists of toxicological studies on new chemicals and industrial processes. One such study was conducted at the request of fluorescent lamp manufacturers, who ran into trouble with their early models when severe lung diseases resulted from the use of phosphors containing beryllium. New non-toxic phosphors were developed and tested on animals at the foundation's laboratories.

"The first line of defense in the prevention of occupational diseases is the information obtained from toxicological investigation," says Dr. H. H. Schrenk, managing director of the foundation. "Knowledge that a chemical may cause permanent injury to the eyes serves to emphasize the need for rigorous eye protection beginning with the development of the material. Knowledge that a chemical is rapidly absorbed through the intact skin may save a life."

Equally important in controlling health haz-

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← Industrial hygienists take the foundation's mobile laboratory right into a company's plant to collect samples of fumes, vapor, pollutants and toxic substances that might affect the health of exposed workers. Most hygienists have a strong background in engineering as well as chemistry.

