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April 3, 1954

VOL. 65, NO. 14 PAGES 209-224

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE

Heart Ease Clue

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A SCIENCE SERVICE PUBLICATION

What General Electric people are saying . . .

W. H. ROBINSON, JR.

Mr. Robinson is Manager of Advertising, Lamp Division

". . . A 'hairpin in a bottle," the first incandescent lamp made practical by Edison in 1879, began a chain of circumstances that brought our country and our way of life out of one world and into another.

For the principal difference between the America of today and that of 75 years ago is electricity—the energy, and the appliances and equipment that help the factory worker, the farmer, the homemaker—that relieve us of drudgery and make each hour of working time far more productive.

When Edison turned his inventive, but very practical, mind to the problem of electric light, he realized that it would not be enough merely to invent an efficient light source.

The job, as Edison saw it, was to perfect a lamp with long burning life, that could be manufactured in large quantities and offered at low cost. Large numbers of these lamps would have to be supplied with electric current from a single source—yet it must be possible to turn lamps on and off individually.

Thus Edison had to solve not only the difficulties that had balked other inventors. He also had to devise a method for satisfactory supply of current, which would have to be manufactured and brought to each lamp, ready for use at the customer's wish.

In other words, Edison conceived and created, in miniature, the entire electrical industry as we know it today. He could buy very little. Generators, wiring, sockets, switches—all had to be invented, designed, and manufactured.

The "hairpin in a bottle" that burned for 40 hours in Edison's laboratory in 1879 was far more than a better light than the world had yet known. It was also the starting point for the electric utility industry, the electrical manufacturing and the electrical construction industries, that make it possible for electricity to serve us today.

at The Electric League, Chattanooga, Tenn.

R. M. SWETLAND

Mr. Swetland is Manager, Illuminating Engineering Laboratory, Lighting and Rectifier Department

". . . Approximately 40,000 traffic fatalities have occurred on American roadways during 1953! About 60% of these—roughly 24,000—occurred at night. Experience, over many years, proves that fully one half of these night fatalities—some 12,000 lives—could have been saved by adequate roadway lighting—protective visibility.

The National Safety Council estimates the total economic loss, per traffic fatality, as $95,000. Thus 12,000 fatalities represent over 1.1 billions of dollars in such losses.

The American public now spends approximately $1.25 annually per capita for street lighting. It is reliably estimated that the doubling of this investment in protective street lighting (another $200,000,000) would *eliminate* this 1.1 billion in economic loss; that is, each $1 additional investment in roadway lighting saves over $5 in economic loss—plus its share in saving some 12,000 American lives.

Higher illumination levels will be needed to adequately protect future traffic flow—both vehicular and pedestrian. Luminaires giving increased light output, properly controlled, are being planned to meet these demands.

Systematically planned street lighting improvement programs pay attractive dividends in (a) merited illumination and protection for each type of roadway, (b) standardization of equipment, and (c) a maximum of protective visibility per $1 of investment.

A recent reliable poll of experienced street lighting engineers reveals that *only* about 7% of our lighted streets and highways now meet A.S.A. recommended illumination levels.

Thus, we're a long way from the street lighting saturation point.

at Yale University

G. S. BENNETT

Mr. Bennett is in the Electro-Mechanical Engineering Services Department, General Engineering Laboratory

". . . It has long been felt by many people, mostly those not in industry, that industrial ultrasonic applications would never be economical. This viewpoint was well put by W. T. Richards, writing in the Journal of Applied Physics for May, 1938.—"In fact, about 1932 there was a feeling in the air that anyone who manufactured anything, with the possible exception of horn buttons, was either installing a supersonic outfit or wishing he had the money for one. The chief beneficiaries of this movement were the electric power companies.—But the electrical production of sound waves is appallingly wasteful—they will be supplanted by more efficient mechanical devices.' Now the fallacy in this viewpoint is the confusion of the words "expensive" and "uneconomical." These are not synonymous—a very strong case can be made for the argument that the highest priced automobile is actually the most economical in the long run. In the same sense, an industrial ultrasonic installation is still expensive, but if a necessary operation can be performed which cannot be done in any other way, if a product can be improved, if time or space can be saved, the initially expensive installation can result in long-range economy. It is in this light that any industrial process must be considered, and in which ultrasonic is gaining acceptance.

at Michigan State College.

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