

TECHNOLOGY

Ike to See Tokyo Plant

WHEN PRESIDENT EISENHOWER visits teeming, energetic Tokyo, accelerating its industries in world competition, he will see one of its expanding electronic plants based firmly on American science and technology.

For 30 minutes, according to plan, Ike will go through a just completed factory building in which blue-garbed girls make transistors and fit them into very modern radios and tape recorders to be sold largely outside of Japan.

Compact sections of the manufacturing and production lines are being moved and streamlined so the President can see as much as possible in a half hour.

He will see the glowing red heat of growing germanium crystals, the heart of the transistor, tended by young men, almost the only operation not performed by girls. The crystals are sliced and then fitted with wires attached to their sensitive points under the microscope. This patient and careful work is performed by girls of high school age.

Then President Eisenhower will be shown an assembly line where big and little transistor radios and stereophonic tape recorders are put together by the same kind of blue-uniformed girls.

Advanced technological application, the latest machinery in production and testing, and effective but cheap female labor paternalistically handled—these are the in-

redients of Japanese industrial success the President will be shown.

A preview of the planned Presidential visit showed the high quality of the engineering design revisions undertaken in the production areas by groups of engineers.

The pace of electronics design and production will be realized when it is recalled that transistors are less than a decade old and even now devices called diodes are threatening them with the fate of the electronic tube.

The girls who do the manual work, often extremely skilled, can be mistaken by a visitor for girls just out of school classes. They are largely fresh from the farms of Japan, they live in dormitories like those of boarding schools and they are watched over by company-paid house-mothers as carefully as they would be at home. Recruited at the age of about 17, they are trained and then work two to four years, after which they usually go home to marry.

SONY is the name of this electronics concern and this name is one of the few words on Japanese signs that is written in English. The engineers who founded SONY just after World War II, led by its president, M. Ibuka, had done electronic work in the Japanese war effort. Seizing upon the fundamental discoveries largely from America, SONY has become a major undertaking.

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ENGINEERING

Transport by Air-Trains

TWO ENGINEERS reported progress toward a new kind of land transportation that may be better than trains, automobiles or planes for quick trips between nearby cities.

The new transport is called a levacar. It is mounted on tracks, but a stream of compressed air about the tracks lifts the levacar a fraction of an inch above the track surface. This reduces friction.

An airplane-type engine pushes the levacar along.

In their paper prepared for the American Society of Mechanical Engineers meeting in Dallas, Tex., Alex L. Haynes and David J. Jay, both of Ford Motor Company, said the company has already built experimental levacars and continues to develop the levacar idea.

Mr. Haynes and Mr. Jay believe the levacars could have central terminals in cities and thus eliminate long trips to outlying airports. They said the levacars could probably travel between 200 and 500 miles an hour.

"Where two or three cities are located within 200 miles of each other, the reduction of travel time between these cities to commuting time will bring these cities together into the same business community."

"To date we have established the feasi-

bility of the system and are continuing to develop the technology. We know that, given a reasonable amount of time, personnel and money, a working system could be installed."

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Monorails Criticized

A consulting engineer criticized yesterday's dream transport, the monorail, as unsound. The statement was not designed to please the mechanical engineers' host city, which has installed one of the few operating monorails in the United States.

But William H. T. Holden, a consulting engineer from Pasadena, Calif., told the American Society of Mechanical Engineers meeting in Dallas, Tex., that monorails have disadvantages that "in the judgment of the majority of qualified and responsible engineers" outweigh its advantages.

"In Europe, there is an international organization for transit problems, and this has studied monorail in the past and is no longer devoting much time to this activity. Here, we have repetitious studies by various consultants, and each metropolitan area has to do the job over and over.

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GENERAL SCIENCE

House Bill Asks Study Of Metric Advantages

A BILL authorizing the National Bureau of Standards to study the advantages and disadvantages of adopting the metric system of weights and measures in the United States has been introduced in the House of Representatives.

The bill, H.R. 7401, was introduced by Rep. Overton Brooks (D-La.) and referred to the House Committee on Science and Astronautics, of which he is chairman.

Hearings by a subcommittee are expected before Congress adjourns its current session.

The bill provides that the National Bureau of Standards conduct a program of investigation, research and survey to "determine the practicability" of changing from the present system of inches and ounces to the metric system of centimeters and grams.

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METEOROLOGY

New Weather Warning System Tried in Midwest

AN AUTOMATIC weather system that pinpoints lightning discharges from severe electrical storms over most of North America is now under test in the central United States.

The new method detects lightning discharges at a distance of 2,000 miles and relays the information to a central collection point.

The equipment, developed by the U. S. Army Signal Research and Development Laboratory, Fort Monmouth, N. J., is operated by personnel of the Air Weather Service.

It represents a further development of the so-called "sferics," a system of locating and tracking storms through the radio static caused by lightning.

The central station for the automatic weather system is at Kansas City, Mo., with six auxiliary stations in neighboring states. The detector stations are equipped with special radio receivers that pick up static generated by lightning.

Each station detects the discharges and simultaneously records the time and compass direction. This information is then relayed to the central monitor at Kansas City.

An electronic device plots and displays on a special map of North America the position of the lightning within a tenth of a second after receipt.

Thus an operator, watching the map, can follow increasing electrical activity that might indicate developing thunderstorms or possibly tornadoes.

When more stations are in operation, the new weather warning system will be particularly valuable in tracking electrical disturbances over ocean areas where there are no permanent observing stations. The system is reported in the current *Weatherwise*, 13:63, 1960, published for the American Meteorological Society in Boston.

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