

ENGINEERING

New Telegraph System Uses Tone From Organ

Instrument's Tone Generator Controls Currents of Different Frequencies, All Passing Over Same Wire

A NEW system of telecommunication that uses the tone generator from the Hammond electric organ as an integral part of the wire circuit and makes possible simultaneous transmission of 96 messages over existing telegraph facilities has been installed on Western Union lines between New York and a number of key cities.

Intended for eventual extension throughout the country, the new system uses the electric organ tone generator to generate a number of electric currents, each of a different frequency, which can carry messages at the same time over the same wire without interfering with each other.

The system has already been applied to the circuits linking New York and Chicago, New York and Washington, New York and Atlanta and New York and Buffalo, it was stated.

It makes use of the "carrier current" principle, the most important general development in the field of telegraph and telephone communication in the last three decades. A number of alternating currents, which can be sent over the same wire without interfering with each other if they are sufficiently widely spaced, carry the message, which can either be a voice message as in telephony, or the telegraph message. The latter is transmitted by interrupting the

carrier current in accordance with a code.

The tone generator from the Hammond organ, which replaces bulky pipes and reeds with compact electrical apparatus, is used to produce the different low-frequency carrier currents. The electric organ uses a current of a given frequency to generate a musical note whose pitch or frequency is the same.

The frequencies are spaced 300 cycles per second apart, making possible 22 simultaneous currents on a single circuit. As a result of methods previously in use, each frequency can be made to carry a number of messages, making possible the total of 96.

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MEDICINE

More Research Needed On Infantile Paralysis

MUCH research must still be done before infantile paralysis can be brought under control, it appears from deliberations of a group of experts who recently conferred in New York City. In fact, Dr. Thomas M. Rivers, of the Rockefeller Institute for Medical Research, told the group that:

Epidemics of infantile paralysis are caused by a filterable virus. However, all cases occurring in an epidemic of paralysis may not be caused by the

same virus. Furthermore, different viruses may be operative in different epidemics.

This means that the muscles must be carefully handled and protected during the very earliest stages of the sickness.

"Skillful protection before wrong positions are assumed and weakened muscles overused or stretched has meant the difference between the resulting disability and restitution to normal life," a report from the U. S. Public Health Service states.

In order to assist physicians, nurses, physiotherapists and parents in protecting muscles weakened by this ailment and in restoring them by proper exercise to full usefulness, this same government bureau has issued a lengthy bulletin giving detailed instructions on care during the period of recovery from infantile paralysis. One of the points emphasized in this bulletin and by authorities generally is the importance of not starting corrective exercises too soon. Another important point is to avoid the slightest fatigue.

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CHEMISTRY

Bread Without Crust Made in New Type Pans

REBELLIOUS small boys who don't like to eat crust will be freed of this bane of the table as soon as a recent invention, by A. Horlebeck and Dr. C. Wiesmann of Wuppertal-Barmen, comes into general use.

The Horlebeck-Wiesmann device consists of a baking pan with a cover which can be fastened down tightly by means of screws. It is lined with an absorbent layer of cellulose or other material.

Dough baked in this pan gives off its moisture, alcohol, and other substances to the absorbent lining. At the end of the baking the lining is damp or even wet, and the dough has become bread that is all "inside"—no crust.

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