

RADIO

# New Ocean Phone Circuits To Bind Nations More Closely

## Wire Connections Promise to Become Continental Links As Solutions Are Sought For Time and Language Barriers

**I**N THE BRIEF five years that have passed since the first commercial telephone circuit between Europe and North America was put in operation, great progress has been made toward the ideal of making it possible to talk from any telephone to any other telephone in the world.

The international telephone system is of importance to world understanding in the same sense that the postal system and the cable networks promote good will and commerce.

### Telephone Cable Planned

There are now thirty-seven intercontinental telephone circuits totaling 168,000 miles in length. All of them are radio circuits, all but one operating on short waves. But plans have already been made to supplement the important route between Europe and North America with a telephone cable. Wire instead of wireless links between the continents promise to be important in the future.

At present the following ocean-bound areas can communicate directly with each other; North America and Europe, North America and South America, Europe and South America, Europe and Eastern Asia, Europe and Australia and Java, North America and Hawaii, Eastern Asia and Java. The Americas communicate with Australia and Java by way of Europe. Proposed direct connections to be established in the near future include links between North America and Eastern Asia and between Europe and South Africa.

### Time Difference Difficulty

Some of the difficulties in intercontinental telephony are time differences and language barriers. Considering an eight-hour business day, for any city there is a third of the earth's surface on which the time is so different from that city that there is no overlap of the business day. Western United States has time differences of more than eight hours with a large part of Europe, Asia and Africa. Western Europe has few important centers in the world with which it cannot communicate within the

business day because the Pacific Ocean conveniently swallows the third of the world which would be inarticulate during European business hours. However, during the waking day there is an overlap of any two world points.

### Neutral Language Needed

Often telephone operators at two distant world points cannot talk to each other directly, even if they are competent in several languages. The subscribers often have difficulty in conversing from distant localities because both may be using a language not their mother tongue. This causes the telephone engineers to strive to make standards of transmissions still higher in order that the difficulties of using unfamiliar languages may be minimized.

As world telephoning becomes more general, it may even be necessary to use some sort of neutral world language, like Esperanto, in the routine conversations between trans-continental operators. A relatively small vocabulary of several hundred words would probably suffice and this might be a powerful impetus to the adoption of an international auxiliary language.

*Science News Letter, January 21, 1933*

PHOTOGRAPHY

## Invisible Light From Flat-Irons Takes Picture

**A**N EXCELLENT demonstration of how infra-red rays take pictures in the dark with a newly developed photographic emulsion is contained in the accompanying illustration. The lower view was taken in the usual way with visible light, while the upper picture was developed after an hour's exposure in total darkness. During this time the two electric irons were turned on but they did not glow as they appear to do in the picture. Infra-red rays that they gave off, closely associated with their heat radiation, were responsible for success.

The new emulsion was developed by

Eastman laboratories. With these negatives, photographs of groups of persons have been taken in the dark under a strong flooding of invisible infra-red light, and carbon dioxide has been discovered "with reasonable certainty" in the atmosphere of Venus through examination of photographs made by light from the planet.

Mt. Wilson Observatory reports that greater sensitivity to infra-red portions of the spectrum have made possible researches previously quite impractical, and have extended spectroscopy into a new and most important region.

*Science News Letter, January 21, 1933*

AVIATION-PHOTOGRAPHY

## Aerial Photography Taught At Harvard University

### GEOGRAPHY 36.

This is the prosaic title of a new course in aerial photography offered during the second half of the present school year at Harvard University. The instruction will be under the direction of four Army officers, Capt. A. W. Stevens, Capt. D. M. Reeves, Capt. B. C. Hill, and Lieut. J. F. Phillips, on leave from Wright Field, Dayton.

The latest photographic equipment, including a five-lens camera, will be used and plans are being considered for actual aerial work by students.

*Science News Letter, January 21, 1933*



FLASHED BY FLATIRON