

The deviation of the loop reading from the direct line toward the transmitter causes it to indicate the position of ore which affects radio waves.

without knowledge of local geological conditions. Working hand in hand, the geologist and the geophysicist can accomplish what neither could do alone. Not only can they work together for their mutual advantage, but the greater efficiency made possible by their greater success is reflected throughout the mining industry and (as the case with all such advances) the public at large eventually benefits as well. The pure science of yesterday is the applied science of today, and from every new application springs a new benefit to mankind.

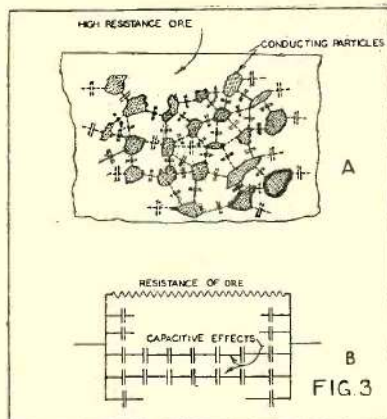
EDITOR'S NOTE—THE WAVELENGTH PROBLEM

The difficulties, also, confronting the independent prospector, in availing himself of this ingenious system of locating mineral deposits, are not decreased by the present battle-royal on the part of commercial interests over the allotment of frequency- or wavelength-bands. Hitherto, at least prior to the past year, the depletion of the available unused radio channels, like that of some other natural resources, had passed unnoticed, except by a few experts. Commercial exploitation of the short waves, following amateur demonstration of the practicability of systematic transmission below 200 meters, had been experimental only, and featured as such in the newspapers and technical journals.

In 1928, however, all industries seemed to awake together to the value of short-wave communication; and the rush to Washington to file claims on the utilizable channels recalled the stories of gold discoveries. The telegraph companies, the railroads, newspapers, financial institutions, put

forward their claims to recognition for paramount public service to be rendered. Manufacturers and distributors who sought private radio lines of communication between factories and offices found themselves elbowed into second place. There were more claimants than there were frequency-channels to distribute.

Reckoning up the available wavebands above ten meters, as they had been allotted by the international radio conference, the Radio Commission found that, instead of a surplus, as popularly supposed, there is a famine. Applications were scrutinized with the utmost care, and it became evident that no radio transmission licenses should be granted except with a public benefit in view. With others contesting for an allotment



A piece of ore, like that pictured below, is composed of tiny conducting particles set in insulating rock; creating small capacities.

of waves, there recently appeared the representatives of seven companies proposing to enter into the field of radio exploration for oil and other minerals; they enlisted in their behalf the testimony of the Geological Survey, the Bureau of Mines, and the Geodetic Survey as to the value of radio in surveying.

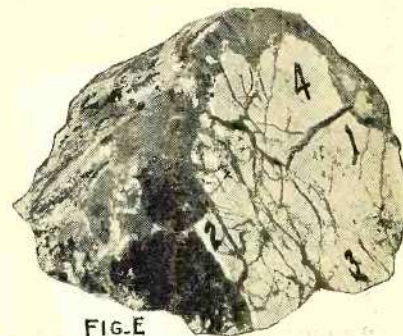
It was pointed out that, while the surface indications of the more accessible portions of the United States have been gone over by geologists, the problem of locating deeper deposits calls for the use of radio. "The continuing discovery of ore, oil and gas deposits is a matter which concerns the public welfare to an enormous extent, and is comparable in its importance to the continuation of transportation facilities. The need of the reservation of powers up to 100 watts is very great and will probably increase with time," it was stated on behalf

of the Bureau of Mines. "Most of the prospecting is done in regions remote from radio interference and therefore offers a minimum of interference."

On behalf of the oil industry, it was urged that better regulation upon a sound business basis could be obtained by radio surveying; rather than by drilling which results in wasteful competition, and depletion of the oil reserves. The issuance of radio prospecting licenses to the applicants was therefore urged as a patriotic measure, in view of the fact that Russian, German, Dutch and other European technicians are using radio in oil surveys, and that the national control of the petroleum reserves yet to be developed is involved.

Five channels, preferably in the vicinity of 200 meters, were requested by the applicants. The Radio Commission took the applications under advisement, pending a conference on short-wave allotments to be held at Ottawa by the official regulatory bodies of the North American countries—the United States, Canada, Mexico and Cuba—to determine on the policy which will be followed.

The situation which has been described above does not seem to hold out much cheer for the free-lance prospector who has been a traditional figure of the West. His opportunity of obtaining a wavelength seems small; and for him to operate an amateur transmitter in the amateur waveband for the purpose—if he had the geological as well as the radio education needed—would be a transgression of the rules, causing interference which would probably be soon detected. Of course, if he were ingenious enough to invent apparatus which he could use in the unallotted, ultra-high-frequency zone below five meters, he would probably get away with it.



This reproduction of a photograph of a piece of ore shows the little streaks of metallic compounds which set up a counter-action to a radio wave.

What Is Happening in the Television Field?

THERE were practically no new developments in the television field between the time when the January issue of RADIO NEWS was being prepared and the date on which this issue was closed. At this writing, the order of the Federal Radio Commission calling for restricted television broadcasting is still in effect, and no new plans are to be announced until the first of the year. In our March number we expect to be able to report further progress; that is, providing the Federal Radio Commission recognizes the value of experimental television broadcasting and allows it to continue on the broadcast band, as well as on the short-wave bands.

Television Fans!

RADIO NEWS is anxious to obtain from you descriptions of your television apparatus and of the results you are obtaining from stations WRNY, W2XAL, WGY, W2XAF, W2XAD, W1XAY, W1BO, WMAQ, W3KK or any others that have gone on the air recently with television. Drop us a line and let us know what you are doing.—EDITOR.

No new television transmitters have been made public since last month's number; although some of the stations that had announced tentative plans for television serv-

ices are now actually on the air. Of these stations, the most prominent are stations W1XAY, at Lexington, Mass., operating on 62.5 meters, and WMAQ in Chicago, Ill., operating on 447 meters. The RADIO NEWS stations in New York, WRNY on 296.9 meters and W2XAL on 30.91 meters, have been continuing their pioneer television broadcasting without interruption, although the time available for these broadcasts has been reduced.

There has been little activity in the commercial field of television, for the reasons outlined in our last month's number. The outstanding development of the month of

(Continued on page 762)



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Television Happenings

(Continued from page 719)

December was the formation of a \$10,000,000 concern to finance the sale of television transmitters and receivers developed by C. Francis Jenkins, the noted Washington inventor, whose activities have been given much space in RADIO NEWS. It is not yet known just what specific instruments this company intends to market.

The Jenkins company is being backed by a group of financiers whose names are so well known in the financial world that great things are being expected of the organization. Mr. A. J. Drexel Biddle, Jr., chairman of the board of directors, has issued a conservative statement in which he predicts, without mentioning specific dates, "the early realization of practical television reception in every home." In referring to one of Mr. Jenkins' latest achievements (obviously the picture board described on page 536 of RADIO NEWS for December, 1928) Mr. Biddle states: "Mr. Jenkins has provided a television system whereby magnified images are available for the home, so that the entire family can see them at one time. A further development permits of projecting the television images on a large screen so that they may be shown in a small theatre. It is only a question of refinement in attaining the proportions and the luminosity of the usual motion picture screen, so that our future theatre audience may see news events of the moment rather than of the past."

Use of Grid Leaks

THE values of grid leaks are usually specified in a hook-up, at from 2 to 5 megohms; the specified value depending, apparently, on what the constructor had handiest. The value is not very critical; the tube manufacturers set the limits between 2 and 9 megohms. It is to be borne in mind that the grid leak regulates the value of negative charge which can accumulate on the grid. The higher the resistance of the leak, the greater the charge; and in some cases, on strong signals, it may block the tube. With a low-resistance leak, the charge drains off quickly, and the tone quality is less subject to distortion; on the other hand, the detector is less sensitive to weak and distant signals. On a DX hunt, therefore, a grid leak of very high value may well be used. Either an assortment of grid leaks of the usual type, or a single variable (carbon-compression) grid leak may be used; but if the latter is employed, it must be of the quiet type.

HOW ABOUT NORTH DAKOTA?

NE: "Television ought to be a big hit in Missouri."

ON: "Why so?"

NE: "Well, you know, you've got to 'show them' in that state!"

—Wm. G. Mortimer.

WHETHER NEEDED OR NOT

MUSICALLY-INCLINED CUSTOMER: "And how often will I have to have it tuned?"

SALESMAN (furniture "expert"): "Er, ah—well, it would be a good thing to have it tuned whenever the tuner comes around."

—Morris Cavanah.

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