

RADIO

# Radio Stations' Moving Day Is Coming on March 29

## After 3 A.M. on That Date, Most of Your Favorite Stations Will Have New Dial Setting; Push-Buttons Off

See Front Cover

**S**ATURDAY, March 29, will be "moving day" for the country's radio broadcasters.

After 3:00 a. m., on that date, most of your favorite stations will come in at a different dial setting from the one they have had for many years.

If you have a set tuned by push-buttons, they will no longer work properly.

For the radio station engineers, it will mean a good deal of work, and a complete change of at least one small but important part.

The result of all this, however, will be greatly improved reception throughout the nation, especially in rural areas.

Through the Federal Communications Commission, the U. S. government carefully polices the ether. From several monitoring stations in different parts of the nation, they watch all the broadcasters, to make sure that they stay in the band to which they are assigned.

On this account, the stations have taken careful pains to stay where they should be. But beginning on the 29th, almost all will have to make a change. Only those with present frequencies below 740 kilocycles will be unaffected. In most instances, the shifts will be slight, generally a little higher. In a few, however, the jump will be half way around the dial. A station at 1090 kilocycles, as an example, will go to 1310. On the other hand, one at 760 changes only to 770.

A small crystal of quartz, about as big as a lump of sugar, provides the control of frequency at the transmitter. Such a crystal, carefully selected, precisely cut to size, can be made to vibrate so that it yields exact electrical vibrations of any desired frequency. Such a circuit is used to run some of the most accurate clocks.

But the frequency determines the dimensions of the crystal, and that means that each of the 700 stations which will change must get a new one. It might be imagined that some swaps could be effected. A station now on 1190 kilocycles, that has to move to 1210, might

send its crystal to one at 1160, which is changing to 1190. This, unfortunately, is not practicable. The stations are in widely scattered parts of the country. On Friday evening, March 28, they will still be at the old position, with the old crystal still in use. But that evening, you may be sure, they will all have the new equipment ready to change over by the throw of a switch.

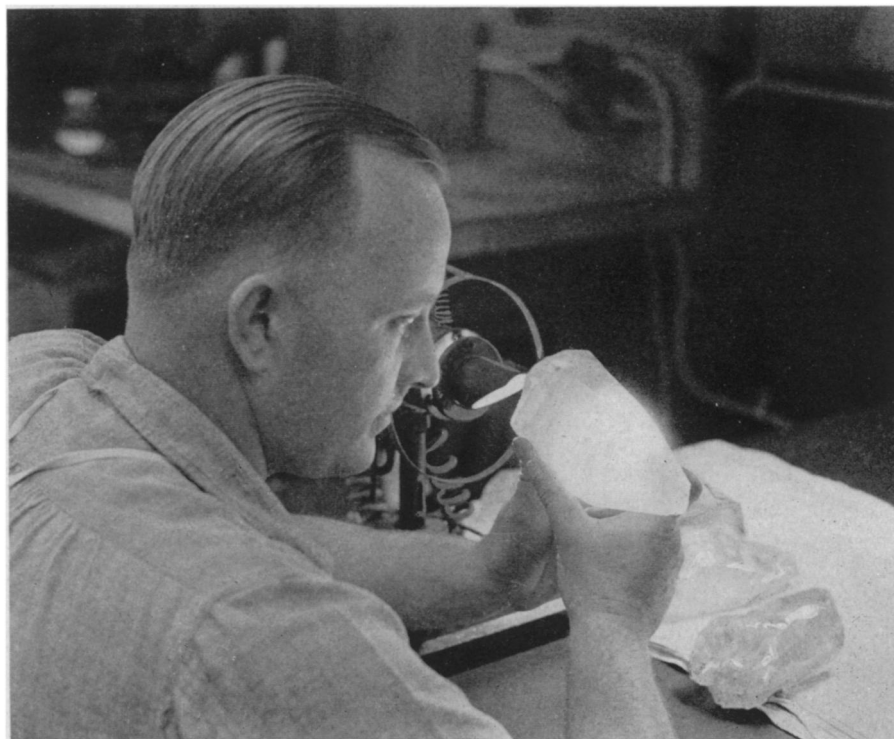
The reason for all this trouble is to improve reception, and as a gesture of good will to our southern neighbors, in Central and South America. Present broadcasting assignments were made in 1928. Then there were no big stations south of the border, so small ones in Latin America could operate freely on

the same channels as U. S. stations. Now they have big ones. Most powerful station in the western hemisphere is in Mexico City. Its power is 350 kilowatts, seven times the 50 kilowatts maximum allowed in the United States.

Some of these stations continued to operate on the same frequency as the U. S. stations, but their higher power interfered with them, except within fifty miles or less of the transmitter. Others tried to slide in between two American stations, but this was even worse. Already as close as practicable for them to be, with channel separations of 10 kilocycles, this meant that two U. S. broadcasters were affected.

To remedy this, an international conference was held in Havana in 1937 and new assignments were harmoniously worked out. Now Canada will have six exclusive channels, Mexico six, Cuba one, and the United States more than 40. In addition, certain channels are shared, where distances between stations are enough to prevent interference.

Changing push-button sets to operate on the new frequencies, is not a diffi-



### PRELIMINARY TEST

*A crystal of Brazilian quartz, weighing about six pounds, is given a preliminary examination under an arc-lamp by a worker of the General Electric Co. Many defects are thus detected. Perfect sections are ground and the crystals used to control the nation's radio transmitters. Not only broadcasters, but also Army and Navy stations, vital link in national defense, use a great many of them.*