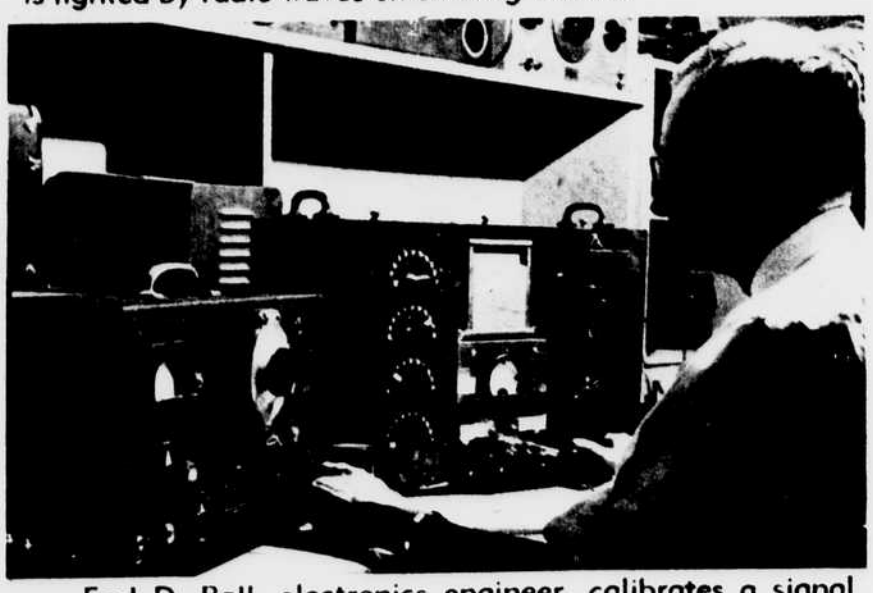
Interference tests on color television are run by W. K. Roberts (right), assistant chief of the FCC laboratory, and F. D. Craig, radio engineer.

John E. Knight sets controls on a diathermy machine being tested. The light bulb held by Radio Engineer A. G. Craig, although not connected to the drum of the machine, is lighted by radio waves emanating from it.



Earl D. Ball, electronics engineer, calibrates a signal generator (left), part of the equipment used by FCC field men. *Star Staff Photos by Elwood Baker.*

'Silencing' the Radio

By Stanley Baitz

THAT diathermy machine your doctor uses for your aching back can be a pain in the neck to radio listeners.

And even that radar range you've installed in your supermodern kitchen can knock your neighbor's television galley west.

These are samples of the tid-bits one gleans from a few hours in the technologically rarified atmosphere of the Federal Communications Commission Laboratory at Laurel, Md.

That laboratory is housed in a small brick building atop a knoll 4 miles northwest of Laurel—a clay pot amidst flowering antennae.

Here a small group of radio and television technicians make studies designed to keep the air traffic in neat and well-defined avenues. If it weren't largely for their research the log-jam in the ether would have radio listeners thinking they'd tuned into a lion-jaguar fight with a horde of banshees at ringside.

Interference with your radio and television reception is their main concern. They approach the problem by testing sending and receiving equipment before it gets on the market. It's easier to do that than to try to look into each case of interference after faulty equipment has been released to the public.

Their tests also help the commission in allocating frequency bands to broadcasters; they indicate how close together stations might be placed without the listener receiving several stations at once.

Now television interference problems are beginning to beset the researchers. They've found, for example, that starting automobiles raise hob with receivers, so they've begun to make overtures to car manufacturers to cut down on ignition potency.

Then there's something called "oscillator radiation." It's best explained this way: All radio and television sets transmit as well as receive signals. This fact, little known to the non-technician home user, has begun to give television owners trouble in certain areas because of spacing of the channels. For example, in Laurel, where it is particularly bad, if one tunes in on WMAL-TV in Washington he gets the program all right, but his receiver also gives off a signal that raises ned with the reception of a neighbor who is tuned into a television station in Baltimore. And vice versa. It seems that television pictures are particularly susceptible to these signals, much more so than regular radio. The spacing of channels here is such that the problem does not confront Washingtonians to any great degree.

The FCC lab men have to try to figure out some standards for receiving equipment that will eliminate this nuisance.

Some of the things they look into get rather far away from the conventional idea of radio—such things as diathermy machines, neon signs, welding equipment and radio cookers. Radio frequency used for industrial, medical and scientific purposes has expanded so much in recent years that the total kilowatts of equipment exceeds the total transmitter kilowatt power used for radio communication. A startling statement, but the FCC says it's so.

Such equipment employs the same frequencies used by the communications industry, and if it is not properly designed and operated it will emit severe interfering signals. So the lab men have to test the equipment before manufacturers put it on the market in order to make sure it doesn't operate outside the band and foul up other traffic on the air.