

construction, 280 have announced plans for building stations, 150 increased power, 70 announced plans to increase power, and 104 old stations changed their wavelengths. Only those of the 150 who increased power without changing wavelengths have any real priority rights to their channels.

The Network System Grows

PRESIDENT COOLIDGE'S Washington Birthday speech was well broadcast by thirty-eight stations, including six in New England, eight in the north Atlantic states, one in the south Atlantic, twelve in the central west, three in the south central states, one in the west and seven on the Pacific coast. Three southern stations, WSM, Nashville, WSB, Atlanta, and WHAS, Louisville, have been added to the "blue network," bringing wire programs to a large area heretofore relying on local talent.

On the Pacific Coast, a chain, including KGA, Spokane, KJR, and KEX, Seattle, KYA, San Francisco, and a new station in Los Angeles, is to be placed in operation in the near future. This chain hopes to establish relations with the National Broadcasting chain, although it is unlikely that commercial broadcasters will find it profitable to radiate their programs on a national scale because of the time difference.

Upon the heels of that announcement comes word of the formation of an N. B. C. chain on the coast, including KPO, San Francisco; KGO, Oakland; KFJ, Los Angeles; KFOA and KOMO, Seattle; KGW, Portland; and KHQ, Spokane. Perhaps we shall see two rival chains fighting for program superiority. It is unfortunate that there is no such competition in the east, but so long as congestion remains in its present state, that situation is inevitable.

Well Administered Canadian Radio

OUR northern neighbors have succeeded in managing their radio affairs with a competence which is a marked contrast to our own methods. Unfortunately, American wavelength pirates have destroyed the interference-free reception conditions which prevailed in Canada prior to the loss of the WJAZ case in Chicago. The Radio Branch of the Department of Marine and Fisheries provides at

cost, equipment to suppress radiation from electrical apparatus which interferes with broadcast reception. It aids interested persons to locate the sources of interference and advises how to remedy them. The interference suppression service of the Canadian Government is the only one like it in the world and is a remarkable evidence of helpful government coöperation. A total of 134,486 broadcasting receiving stations are licensed at an annual fee of one dollar, this providing the principal revenue for radio regulation. At the time of writing 22,831 bearings have been furnished by radio beacon stations and the average number per month is continually increasing and is now at about 1900 per month. One hundred and forty-five ships, plying from Canadian ports, are equipped with direction finders.

filament rheostats, sockets, panels, and other small parts. Both the set constructor and the manufacturer will profit by standardized mountings and wiring color codes. It is very unfortunate however, that two competing trade associations are establishing standards and indulging in a stupid war upon each other, thus defeating the usefulness of the work of each of them. This is another demonstration of the radio industry's deplorable lack of foresight.

The Weak Radio Listener "Organization"

WE ARE in receipt of data from the Iowa Radio Listeners' League and several petitions circulated by listeners in various cities of the central west, indicating several attempts at listener organization. The broadcasting situation could be immeasurably helped if listeners themselves raised their voices with a little vigor now and then. Although there have been a few petitions, some of them supporting dangerous proposals, there is not a single person who stands out, except in his own mind, as the representative of large bodies of listeners. One or two men are spokesmen for groups of two or three hundred listeners, but only an infinitesimal proportion of the 20,000,000 enthusiasts has ever given voice to their desires



THE EXTERIOR OF A JAPANESE BROADCASTING STATION
Station jock at Nagoya, Japan. The apparatus is of English manufacture, and six kw. is the power input. The station operates on 832.8 kc. (360 meters)

The Lethargic Radio Industry

RADIO RETAILING states that 1,750,000 sets were sold during the last season, as compared with two million the year before, a decrease of twelve and a half per cent. The average price, however, has risen from \$83 to \$115 so that gross sales for the year will be larger than last year. Considering, however, that the radio market is only twenty-five per cent. sold and that this year's ether conditions were twice as good as last year's, two and a half million sets should have been distributed this season. The industry's apathy about the broadcasting situation has cost it a pretty penny.

Conflicting Radio Standards

THE Radio Manufacturers' Association announces that tentative or permanent standards have been adopted by it on fifteen items, including

in matters of broadcasting regulation. We doubt very much if the radio listener can ever be organized. During the last season, he has been faced with the virtual destruction of broadcasting by wanton publicity seekers, with hardly a sound of protest.

Interesting Field-Intensity Measurements

APAPER by Lloyd Espenschied, of the A. T. & T. Company, supplementing earlier papers on radio broadcast coverage of city areas, appearing in the January *A. I. E. E. Proceedings*, illustrates in a startling and conclusive way the effect of slight changes in location upon signal intensity in different directions. A half-kilowatt broadcast transmitter was installed on a motor truck and field strength measurements were made in all directions from a number of broadcasting station sites. The measurements prove beyond any doubt that to locate a broadcasting station in the