



RADIO CANADA

New Radio Centre

by ROY PATRICK

The new home of the International Service of the Canadian Broadcasting Corporation was officially opened in May, 1951. For in the course of little more than two years the Ford Hotel has been converted into the World's biggest and best equipped broadcasting headquarters. By mid-May the C.B.C. had taken the last wraps off. Thirty bathtubs, 700 wash-basins, several walls and umpteen miles of pipes and wiring together with 54,450,000 of public money.

This building is the latest link in the development of radio in Canada, it provides for all the operations of the C.B.C. in Montreal, including facilities for broadcasting to Canadians in English and French as well as the International service, the "Voice of Canada" which broadcasts in fourteen languages, the latest addition being that of a Russian who offers straight newscast and press comments to any listener in the Soviet caring to listen.

In the building, facilities are provided for programmes to be fed from any part of the Continent. A direct landline is maintained for constant communication with the United Nations in New York and with the American networks of N.B.C., A.B.C., and C.B.S.

This twelve-storey building is equipped with 29 studios of different shapes and sizes and each decorated in a different pastel shade, contain modern devices like muffled air-conditioners and acoustically designed to provide the best possible sound reproduction.

At the back of the main building, C.B.C. have planned a five-storey television building with three studios. Television for three hours nightly will begin in the Spring or Summer of 1952 and will be broadcast in English and French for residents of the Montreal area. Centre of all broadcasting operations is a bright mechanical child of this scientific age, the master control room which can be handled in all its activities by one man. The Control board handles five transmitters, eight outgoing networks, seven incoming networks and 29 studios. Announcements in several different languages can be combined with the same musical programme, so that listeners, say, in England, Brazil and France will hear a standard broadcast with announcements in their own language.

Next in importance in the technical operation of this radio world is the recording room—one of the busiest in North America,

for here there are twenty machines both disc and tape recorders. For all special occasions all twenty recorders can record the same programme simultaneously.

Among new developments designed to save equipment and personnel is a "delay operation" system. If a programme comes in at 5 p.m. and is to be broadcast at 6 p.m., the operator records it on tape, winds the tape back to the starting point, and connects his machine to the studio from which the programme announcements will come. Then at 6 p.m. the Operator in the studio needs only to push the "tape start" button at his elbow and the programme will be played back automatically in the recording room. The programme then goes through Master Control panel to a transmitter.

More than 1,000 valves are used in the electronic equipment of the building. Five hundred of these are in Master Control, 200 in the recording room and 900 in studio equipment.

Six years ago (in 1945) the late Prime Minister, Mr. Mackenzie King, inaugurated the C.B.C. International Service. From morning till midnight every day, Canada broadcasts in fourteen languages to Europe and Latin America. Twice weekly a special programme is beamed to Australia and New Zealand. All this done through the medium of the International Service of the C.B.C., the Voice of Canada being carried forward to the World audience over two powerful transmitters at SACKVILLE, N.B. Radio Canada has received more than 150,000 letters from listeners the World over since the service began, and the letters arrive regularly now at a rate of between three and four thousand a month.

Each month Radio Canada publishes a free programme schedule—one for European listeners in English, French, Dutch, Danish, Norwegian, Swedish, Finnish, German, Italian, Czech and Russian; the other for Latin-America in Spanish, English, Portuguese. The combined circulation of this free booklet is nearing the hundred thousand mark and is still growing.

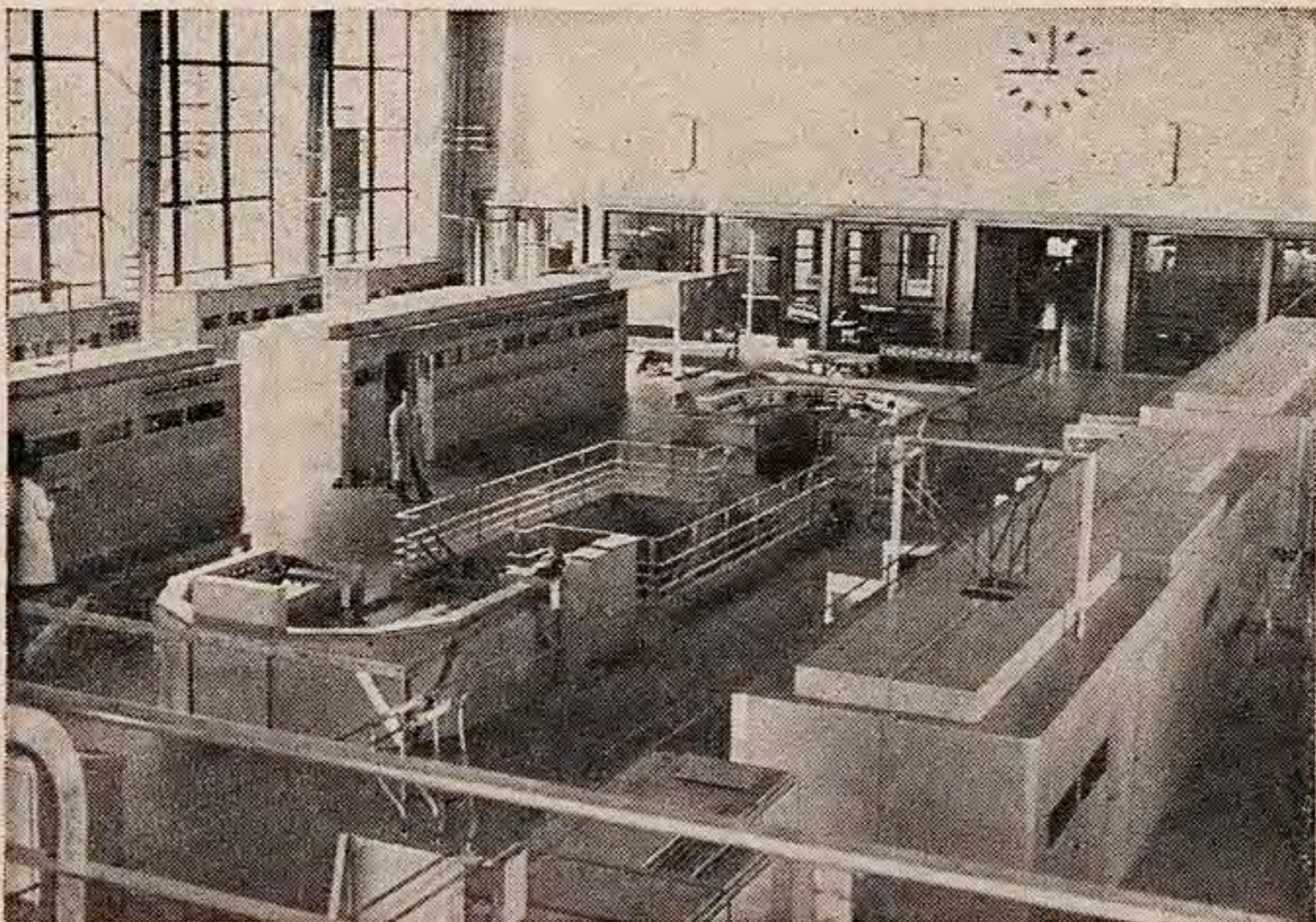
The Canadian Broadcasting Corporation regards this new building as an instrument to help to promote the interest of the nation within Canada and the Canadian nation's interest in promoting international goodwill in the distant countries of the World.

OUR FRONT COVER shows the compact Master Control Room of the Radio Canada building. One man can keep track of everything coming in and going out of the studios. The Master Control can handle 27 individual programmes simultaneously.

OTC to ORU

by Roy Savill

A Story of Goodwill



View of the transmitting hall

When a few months ago the Belgian National Broadcasting Service opened up the broadcasts from the new ORU transmitters at Wavre they were making history with the first international shortwave transmissions in the country. For despite the fact that OTC, Leopoldville, in the Belgian Congo, had, as the official world-wide voice of Belgium, become one of the most popular of the international shortwave stations, no such transmissions had hitherto emanated from the mother country itself.

It is worthy of reflection, too, that this latest service has sprung from seeds actually sown here in Britain in the early war years. When Belgium was overrun, one of the two transmitters of the INR was voluntarily destroyed, the other was dismantled for use elsewhere. The only Belgian shortwave transmitter, situated at Ruisselede, was also destroyed. When France and Belgium capitulated, nobody could tell when or where the Belgian radio would start again. The BBC, however, made room in its European Service for Radio-Belgique and Radio-Belg , which rapidly became very popular.

Then came OTC. It had been felt that free Belgium should have a world voice of its own—a voice with which to broadcast to its own occupied peoples, to its servicemen, then scattered in war theatres all round the world, and to every country with ears to listen. The Belgian Congo, in darkest Africa, had everything to commend it. Not only was it far away from the threat of bombs and invasion, but it was also an ideal spot for siting a world broadcasting station. There on the Equator it was possible to send out signals which, as we all know, would be heard at utmost strength and consistency in practically every country.

The task of building up this new Belgian broadcasting service was given to one of the directors of Radiodiffusion Nationale Belge, who had escaped to London, and who was joined by Mr. Frans Zoete, now Director of the Overseas Service of RNB.

As I have said, the primary object was to provide a voice for free Belgium; but very soon the Goodwill idea set in, and OTC became a voice of friendship. In addition to the broadcasts in French and Flemish (actually these were and still are in non-dialect Dutch),

THE RADIO AMATEUR

English programmes were instituted, to be followed by Portuguese and Spanish. More recently, Swedish has also been added to the list.

OTC had its own staff and was a self-contained station in every way. From the end of the war an English staff, including ex-BBC man Bill Ashley as announcer, was established there, and from that time most of the programme material, other than news and music, was tape-recorded in Brussels and flown to Leopoldville. Anything else could be taken from agency reports or transmitted from Brussels and monitored by OTC.

As the years passed, however, work was going on at Wavre, about 15 miles from Brussels, on new and powerful transmitters to carry both the two medium wave home services and the world shortwave service. In Brussels itself there was already one of the finest broadcasting houses in Europe, in the Place Eugene Flagey. This had been built just before the war, and as the latest of any on the Continent it incorporated all the best features of the others.

It was into this building that I walked one Saturday afternoon. I was greeted by one of the English editors, John Johnson, formerly of commercial radio and the Forces Broadcasting service. He told me all about the new set-up and showed me round the studios, including the great concert hall, where I sat for

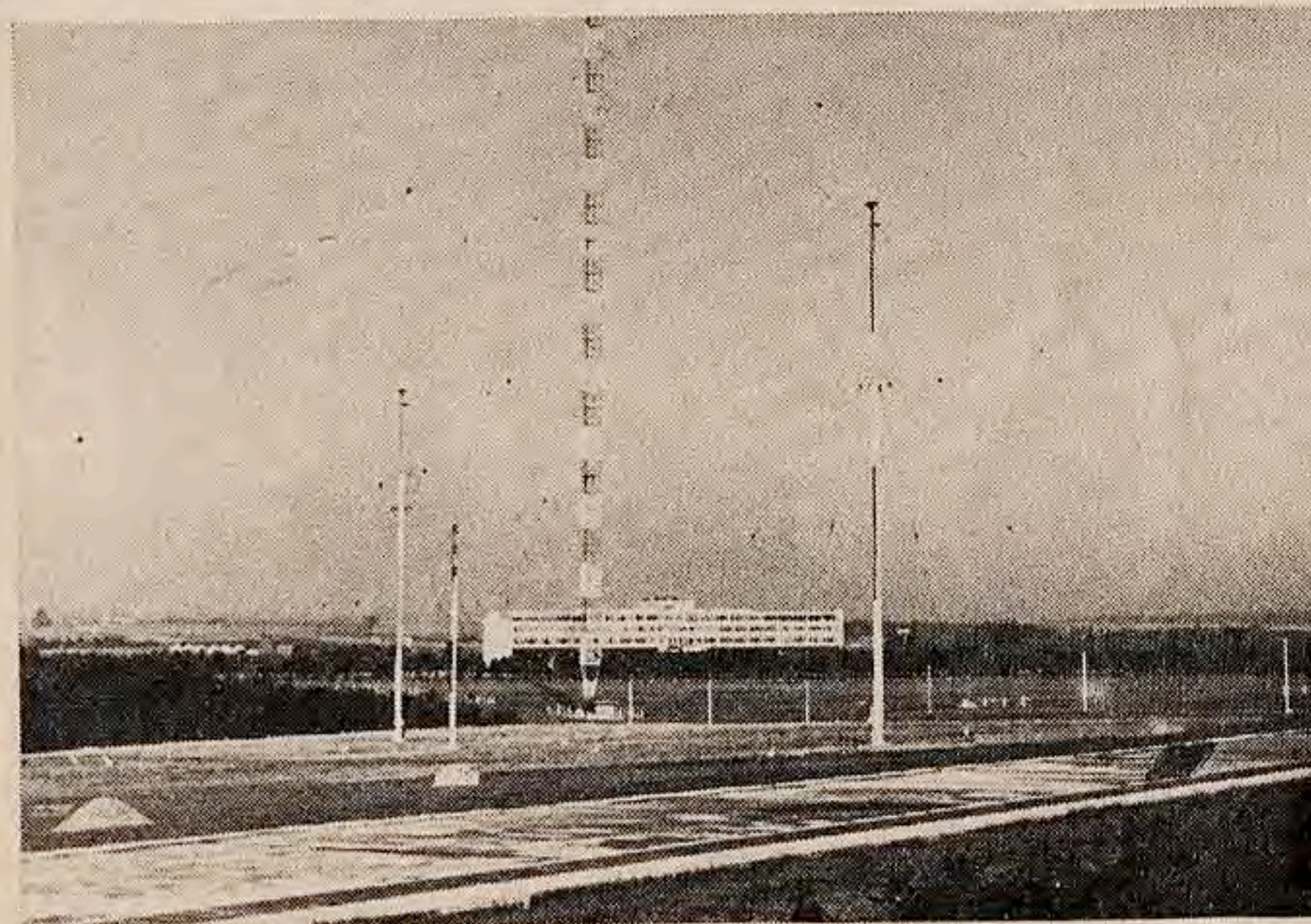
a short time during a broadcast by a French girls' choir.

So far as the shortwave transmissions are concerned they are split into two parts, John explained: the International service and the Colonial service; the latter including the broadcasts to men at sea, missionaries and Belgians abroad. OTC is still in use, as a relay station from 2315 GMT, when the beam is mainly to North America. The power there is 50 kW, compared with ORU's 100 kW and 20 kW.

Apart from the French and Flemish home-service studios, there is a separate studio for both the International and Colonial services, each with its own control room. In the International studio are two American "Presto" tape-recorders and three German "Magnetophone" recorders; also three play-back turntables equipped with normal and slow-speed mechanism. The Colonial studio is very much the same, but smaller.

Each studio can, by means of a telephone-type dial, bring in any other studio in Broadcasting House, putting the programme over on its own circuit or recording it for future transmission. The Colonial service quite frequently relays a home programme completely; the International service, on the other hand, usually records the programme then

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General view of station buildings and aerial masts

OTC to ORU (*Contd. from p. 173*)

edits out the announcements in French or Flemish and substitutes any other language required.

So far as news is concerned, the source is the normal agency services—including Reuter from our own Fleet Street.

There is a staff of four on the English service, including Bill Ashley and John Johnson. The other two are Andre Charlier, formerly with the BBC Belgian Service, and Joseph Kadijk, a Belgian educated in England.

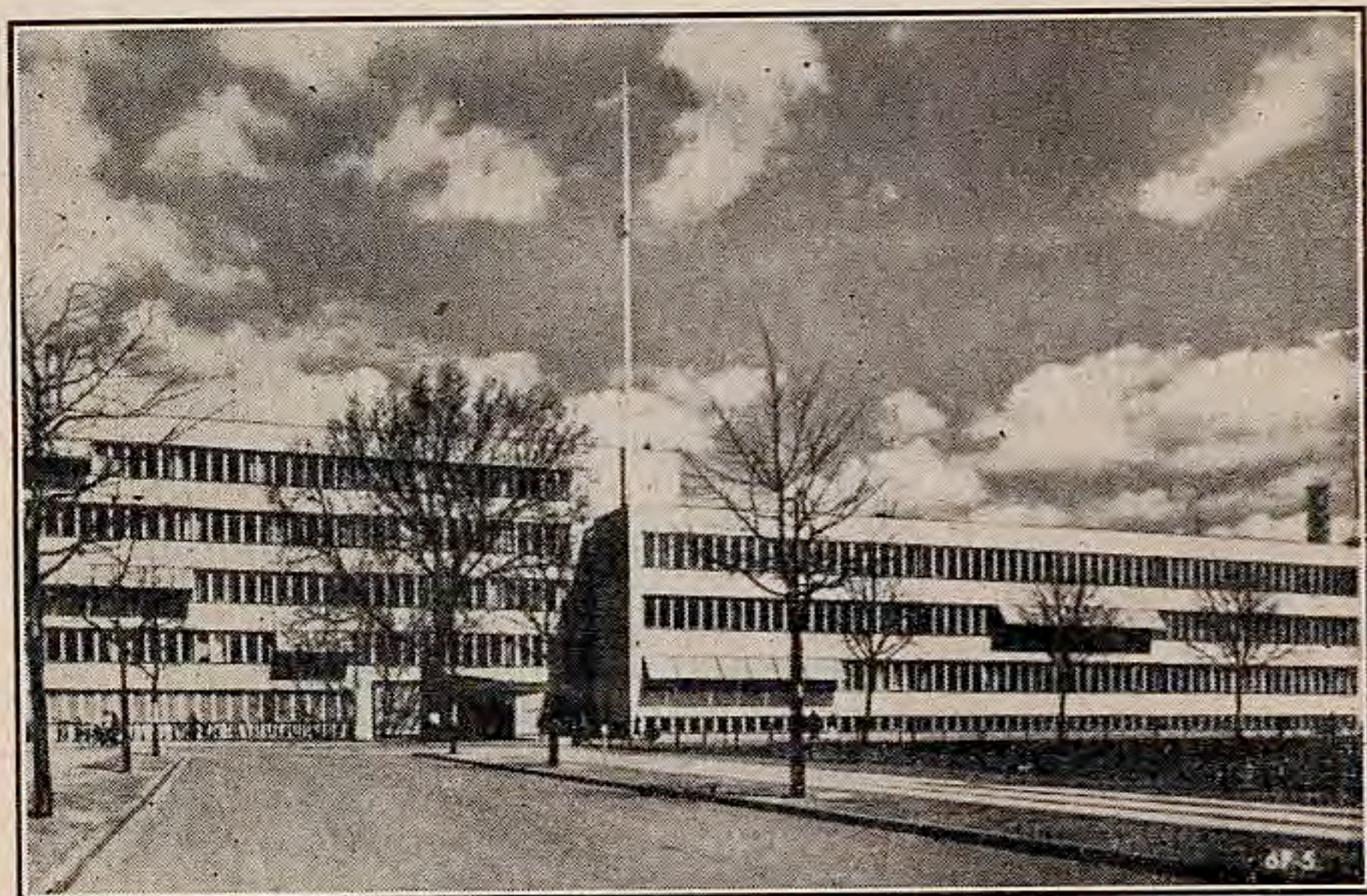
Most popular programme for a long time has been "Amongst Friends," broadcast in English, French and Dutch. The very title of this programme is an expression of the nature

of that which was OTC and which now is ORU. This programme is associated with the ORU Club (formerly OTC Club), which acts as an international friendship club, fostering such things as stamp collecting and amateur photography. It also exchanges correspondence between pen-pals.

This is a story of Goodwill. As with OTC, the newer ORU has nothing to do with propaganda as it is generally understood. It seeks to give news—unbiased news—entertainment and an idea of the cultural, social and economic life of Belgium. It is a great supporter of international tourism and understanding—in short, of international Goodwill.

THE VOICE OF DENMARK

Compiled by ROY PATRICK



THE little Kingdom of Denmark has obtained a significance throughout the world out of all proportion to its size, due primarily to the fact, it practically leads the world in agriculture and that many Danes abroad have made a mark in science, art and inventions.

The Danish State Radio's International service, now in its 23rd year of operation, is the short wave voice of Denmark. Through it, Denmark can maintain contacts with 10,000 Danish sailors and Danes living abroad and also tell the peoples of other nations about life in Denmark. Since its inauguration in 1929 the "Voice of Denmark" has steadily expanded its service to include European, N. American and S. American areas. Three times a week a special programme is beamed to Australia and New Zealand area.

From studios in Radio House in the heart of Copenhagen, programmes in English, Spanish, Danish, Greenlandic and Faroese are channelled daily to powerful short wave transmitters at Herstedvester, which is on the outskirts of Copenhagen.

The "Voice of Denmark" operates on the following frequencies and power:—

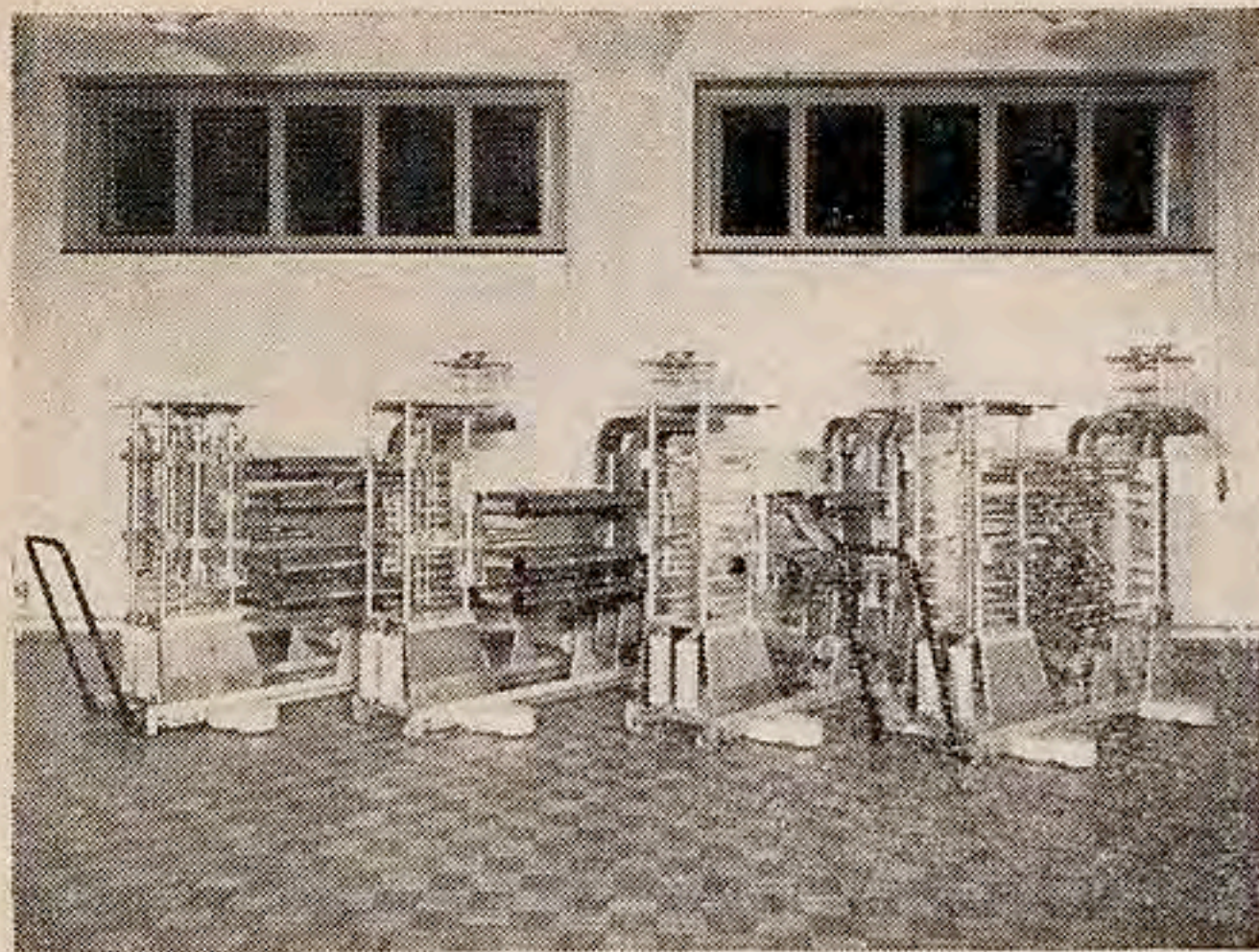
15320 kc/s.	19.58 m.	50 kw.
15180 kc/s.	19.76 m.	50 kw.
9520 kc/s.	31.51 m.	50 kw.
7260 kc/s.	41.32 m.	50 kw.

The transmitters are in operation for seven hours twenty minutes daily, which includes four hours fifty minutes of relays of Home Service. These programmes are broadcast especially for Danish sailors and Danes living abroad.

I think it is important to stress the fact that "Voice of Denmark" is not concerned with propaganda, official or otherwise. It offers its listeners musical programmes, items of a purely entertainment value alternate with popular educative programmes, reportage and items of topical interest. A special Dx bulletin is broadcast on Tuesdays at the end of the two North American programmes.

Though Denmark "aims" her short wave broadcasts primarily at certain countries or areas, the mail regularly received by the short wave service is clear indication that these programmes are not only listened to widely, but also appreciatively. The Danish State Radio are anxious to hear from listeners in all parts of the world about reception conditions and comments on its transmissions. All correct reception reports are confirmed by QSL card. Return postage is not necessary.

All reports and letters should be sent to "Voice of Denmark", Radio House, Copenhagen, v.



Different coils mounted on trolleys for the final circuits of one of the 100 kw transmitters at S.S.S., made by Hasler A. G., Berne.

THE SWISS SHORTWAVE SERVICE

IN its 15 years of existence, the Swiss Shortwave Service's transmitting centre at Schwarzenburg, near Berne, has changed a farmer's field into an immense network of 10 rhombic aerials surrounding an ultra-modern station with 10 transmitters.

But even before Schwarzenburg was constructed in 1937, the Swiss Shortwave Service was on the air, using the League of Nations' transmitter at Prangins near Geneva.

Now, the Swiss Shortwave Service has daily programmes in 9 languages beamed to all corners of the world. For Europe, two dipole antennas relay the home programmes in the four national languages of Switzerland (Schwizerdütsch, French, Italian and Romanche) as well as High German and Esperanto to the continent. In addition, special features of international interest are added from the studios of the Shortwave Service situated in Berne.

The exact location of the transmitting centre of Schwarzenburg is $46^{\circ} 49' 2''$ North latitude and $5^{\circ} 2' 20''$ East longitude; it is 2,600 feet above sea-level. In the transmitting shack, which is L-shaped, there are two main halls. The ten transmitters are located on the ground floor, five of which are in use for shortwave broadcast and five for the outgoing telephone channels of the Swiss Postmaster General's Department. Below are the machine rooms, including those for filament heating as well as the high-tension rectifiers for grid bias and for anode voltages for the transmitters, as well as the water cooling system which uses the rain water caught by the roof. On the first floor is the

antenna podium, where the lines from the transmitters below are switched to the feeder lines. All antenna and transmitter lines are interchangeable, so that any transmitter can be switched to any antenna. The power of the transmitters is as follows:

- 3 transmitters of 100 kW high frequency power.
- 2 transmitters of 25 kW high frequency power.
- 1 transmitter of 10 kW high frequency power.
- 4 single sideband transmitters for telephone Service, of $2\frac{1}{2}$ and 4 kW.

The 100 kW transmitter is in three units, two of which contain the high frequency stages and one the modulator. In the higher stages, wire cannot be used for the coils, because of the skin effect of the high frequency current. Copper tubing is, therefore, used to reduce coil heating. Nevertheless, frequency changes have to be made swiftly because sometimes only five minutes are available. Therefore, in the higher stages, before the final amplifiers, the coils and condensers for the final circuits are mounted on trolleys which run on rails and can be smoothly pushed into place in a minimum of time.

The ten rhombic antennas beam the overseas programmes of the Swiss Shortwave Service to distant countries. These antennas can be reversed, so that, for example, the beam fixed on Sydney can be reversed to cover South America; one on Winnipeg can also be used for North-East Africa; the antennas are beamed as follows:

- 1 on Winnipeg ;
- 3 on New York ;
- 2 on South America ;
- 1 on Melbourne ;
- 1 on Tokyo ;
- 1 on Sydney.

Beam direction can be very simply changed by bringing the feeder line to one or other of the opposite points on the longer axis of the rhomboid. The average height of the antenna masts is 25 m, which provides the required 10-20° angle for the field. If the mast is shorter, the angle is proportionally greater, while if the mast is higher, the angle decreases. Antennas of the new stacked dipole system are now in construction and are expected to be in operation in Spring of next year.

It may be wondered why Switzerland, a country of only 4½ million people in the middle of Europe, with no colonies and with what is sometimes considered a passive international role, should broadcast to the Pacific and South America; why this tiny country, with no raw materials, should wish to explain its policy to Canada and the United States; why it is glad to have an increasing number of listeners in Japan; or why appreciative letters from listeners in India and Pakistan are so welcome.

One reason for the foundation of the Swiss Shortwave Service was to act as a link between the 7.7% of its population living abroad and their homeland. Another and very important reason is the fact that a shortwave service with an enlightened policy can do much to break down the isolation of distance. Further, this tiny country has, because of its very economy based on free trade, contacts with all corners of the world—not to mention those created by such organisations as the Red Cross and other similar societies.

However, Switzerland has something of far greater importance to offer to the whole world. For Switzerland is part of Europe, surrounded by France, Germany, Austria and Italy; its four languages and nearness to its neighbours make it not only capable of understanding them, but of explaining their differences and doing something towards a rapprochement. And understanding is already a step towards peace. That is what Switzerland can express about Europe.

About itself, there is a good deal to say. Politically, neutrality permits a certain objectivity in news comment and this neutrality normally applied only to international affairs even plays its part also in home affairs, in that objective news writing and comment can be found in the 3,000 newspapers and periodicals flourishing in Switzerland, even when dealing with home affairs.

This is reflected in the talks by Switzerland's most capable home and foreign news commentators over the Swiss Shortwave Service.

Neutrality itself, often abused, is therefore often misunderstood and one of the tasks of the Shortwave Service is to explain the positive, constructive and active side of Swiss neutrality, not only as exemplified by the Red Cross which originated in Geneva, but as a political force.

Democracy, too, in these days seems to require a great deal of explanation in some quarters and from this oldest democracy in the world where, in some parts, the direct democracy of the parliament of citizens voting on affairs of local importance is still alive and where on a federal level the citizens can call for a general referendum on any federal law which they do not approve of—this country is surely one of those most indicated to fulfil the task of explaining democracy.

Then again, Switzerland is the most advanced country, sociologically speaking, of Europe. Thus, its way of life can be used as an indication of what can be done by hard work and humanity. That is why the Swiss Shortwave Service has set about reflecting daily life in Switzerland, talking of its industries, its sports, its mountains and its politics—not in a bombastic "I told you so" manner, but coolly, calmly and objectively.

To do this, a programme layout has been designed which keeps a balance as even as possible between spoken word and music. Request programmes, classical concerts, gay mountain melodies and radio games with music are presented in addition to vivid outside broadcasts, interviews with home and visiting experts on various matters of Swiss activities, studio programmes dealing with current aspects of Swiss life. Up-to-date news commentaries complete the mosaic of the Swiss Shortwave Service's programmes.

ECONOMY.

The present high cost of publishing is in part due to the price of paper. Some of the circuits in this issue are not as large as we should have liked, but they are big enough to serve their purpose. In order to give our readers as good value for money as possible, we have, too, restricted our page margins and we use a medium size type. The paper thus saved goes to provide more space for reading matter.