

Local Reception

Ultra Shortwave Broadcasting

THE desire of broadcasters to be heard over as wide an area as possible has caused a large amount of unnecessary interference, due to the limited number of channels available on the broadcast band of wavelengths and the extraordinarily long range transmissions of many of the higher powered stations.

The problem has become an acute one in countries where broadcasting stations are numerous and remedial measures are being urgently sought.

Recent advices to hand from the Technical Department of Philips Lamps (N.Z.), Limited, indicate that extensive experiments are being carried out on wavelengths around 7 metres.

At these very short wavelengths the number of broadcasting channels available becomes very much larger, for example, staggering as it may seem at first sight, there are as many channels available between wavelengths of 7 metres and 7.10 metres as on the whole of the broadcast band—i.e., 200-550 metres, or between 7 metres and 8 metres there are no fewer than five and a half times the number of channels on the normal broadcast band.

Seven metre wavelengths have, however, another very noteworthy property which limits their effective range to some 10 to 12 miles—and it is practically impossible to hear any 7-metre station outside this radius. This means that stations separated by only 50 miles distance could transmit on the

same wavelength without possibility of mutual interference. Low power is quite effective; in fact, increasing the power a hundredfold or a thousandfold does not effectively increase the coverage area.

The receiving apparatus is simple and cheap, and for purely short range broadcasting these 7-metre developments will be well worth watching.

One of the pioneer stations is PPFE, on a wavelength of 7.85 metres.

ing really interesting work, and they have to contend with quite different conditions, for there are 600 stations in the ether and they have no listeners' revenue.

"I rather think it is not for me to say whether the B.B.C. or these two great broadcasting companies are doing the better work, but there are two things to which they aspire most of all in America. Their two great aims are

Coils for the Differential Series

AS correspondents from time to time ask for coil specifications for the Differential Series, we are publishing them in complete form below.

Reaction Condenser .00015-25.

Condensers .0005 or .00035 with .0001 in series. Wire, 26-28 d.s.c. Reaction and primary. 30-32 d.s.c.

Metres.	1.1	1.2	1.3
60-100	6	30	15
30-60	3	14	9
15-30	2	5	4
8-15	1	3	4

Broadcast—Valve Base Extensions.

Condenser, .0005.	Wire, 30 d.s.c.	Reaction and Primary, 30-34 d.s.c.
250-550	35	90 40
Condenser, .00035.	Wire, 30 d.s.c.	Reaction and Primary, 30-34 d.s.c.
250-550	40	110 50

Broadcast—2in. Former.

Condenser, .0005.	Wire, 26 d.s.c.	Reaction and Primary, 30 d.s.c.
250-550	30	72 35
Condenser, .00035.	Wire, 28 d.s.c.	Reaction and Primary, 30 d.s.c.
250-550	33	80 38

Interchange of Programmes

England and America

WIRELESS listeners in the British Isles can look forward to an increase very shortly in the interchange of broadcasting programmes between America and England.

Sir John Reith, Director-General of the B.B.C., who has recently returned from a visit to Canada and the United States, said that negotiations are proceeding satisfactorily and are expected to come to a head in the near future, so that in a very short time plans will be in hand for more interchange of programmes across the Atlantic.

"One of the fundamental principles which both sides are trying to carry out in the interchange of programmes is to select those items which are peculiar to one country and which that country does better than the other."

"For instance, the Ceremony of the Keys at the Tower of London might be a typical item to select for a broadcast to America, while from the States it might be that there would be an occasional relay of a University football match, not so much as a football match, but because of the recognised college cry and 'rooting' which would be interesting, and, no doubt, humorous to British listeners."

DISCUSSING the two great chains of broadcasting in America—the National Broadcasting Company and the Columbia—Sir John said 'they are do-

toward greater concentration of management, and, secondly, to increasing recognition of service obligation.

Comparing the number of wireless listeners in this country to the number in America, Sir John said it was difficult to say which country led.

"In the first place, the Americans had no means of checking their numbers, though it is said there are about fifteen million receivers as against 3,600,000 in this country. Probably pro rata to the population there are more receivers in this island."

Radio—a "Household Utensil"

RADIO receivers, the Danish Government has decided, belong in the category of articles which cannot be seized for debt.

This repeats a recent German ruling on the point, in which a Berlin court declared that a wireless set must be regarded as a "household utensil," legally exempt from seizure, since it fulfils an indispensable function in modern life.

r.f. coil, overlap and celluloid 1in. with cement, wrap twine over the whole length and set to dry; scrape the joint with a knife to remove the ridge. Cut the celluloid 3-8in. high for both coils.

The aerial coil is 30 turns of 26 enamel wound on a 1in. collar of celluloid to drop inside the r.f. coil and rest at the bottom; connect top end to earth and bottom to aerial prong through holes in bottom of r.f. coil. Bottom of r.f. coil connects to grid-pin and top is the highest tapping. Connect the arm to earth inside the coil. Inside connecting wires must be put in before the top is cemented on.

"Advance" Set

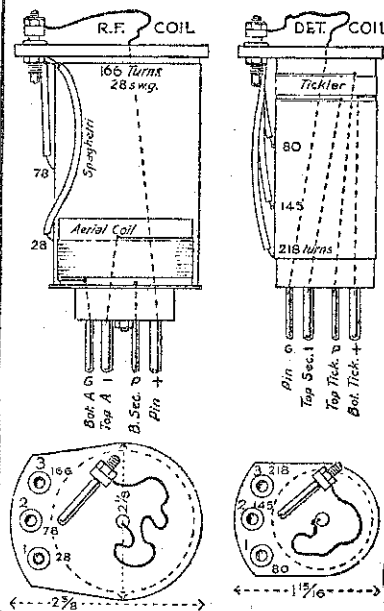
SEVERAL correspondents have inquired regarding the special broadcast coils for the "Advance" short-wave set described in the "Radio Guide." In the second edition certain changes have been made, so, to acquaint constructors with these, we are reproducing portion of the second edition relating to the coil.

ONE tapped coil for each stage will bring in all stations from about 200 to 500 metres. The diagram gives all the information required. The tapings are altered by pin and sockets. The top of each coil is a circle slightly larger in diameter than the coil, with an extension at the left-hand to accommodate the sockets, 1-8in. or 3-16in. ebonite being used, and secured to the top of the coil with celluloid cement.

No. 3 tap on each coil includes 7ZL as the highest and 2BL as the lowest station, readings on both dials be-

Turns for Valve-Base Coils

R.F. Coil	Detector Coil
Pri. Sec.	Tick. Sec. Range-Metres
1 3 4	1A 3 4 13-19
	1B 4 5 18-29
2 5 11	2A 3 8 28-40
	2B 4 13 39-60
3 5 26	3A 4 22 59-82
	3B 6 29 73-100



almost equal. No. 2 tap on each coil includes 4QG down to below 3YA, while No. 2 r.f. and No. 1 detector go down to 2NC, and changing to No. 1 r.f. reaches a few small stations below.

Few changes are necessary to cover the whole broadcast band, and good reception is assured.

Gauges of wire (s.w.g.) are 28 for the r.f. and 36 for the detector, both enamelled and quite closely wound. At each tap clean 1/2in. and twist into a small loop round a 1-inch nail.

The r.f. coil is 2in. in diameter, of celluloid, bolted on a valve-base reduced to 3-8in. high. The detector coil former is made by rolling celluloid round a complete valve-base, at the same time cementing the two; at the top end place the ring sawn off the (Concluded at foot of previous column.)

A money back guarantee covers every purchase

Use a Gramophone Pick-up; modernise your radio. Adapter, suitable for all A.C. Sets. Place under 5-prong detector valve. Introduction Price, 1/- ea., Post free.

Variable Condensers, single hole mount—

.0005 7/6 post free
.00035 7/6 post free
.00025 8/6 post free
.00015 7/- post free

B Battery Eliminators, suitable 230v. or 110 A.C. Delivers 22 1/2, 45, 100, 135v., at 90 mls. £5/17/6

Post or freight free, Egg Insulators 1/6 doz. Post free.

1in. Insulated Staples, 1/-

100 packet, post free.

1in. Insulated Staples, 1/2

100 packet, post free.

Igranite Transformers, 10/6, post free.

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Philips B443 Penthode, 18/9, post free.

Philips A442 S.G., 18/9, post free.

Bond Valves, 226 8/6

227 10/6

224 15/-

281 26/-

280 12/9

201A 6/3

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