

Sets to Build to receive Television Sound!

2^D

VOL. 1

and TELEVISION

NO. 3

TO DOMINGO, D. N. P. O. BOX 912 REP. DOMINICANA,

5 continents plus
4 Countries
PA, EA, LA, CT, CN, ON, HB, LQ, VE, PY, QX, CF

Power: 30 watts

PARO A COLOM

UR POST not ON 7-11-925 at 2:15a gmt

EA7BC

AMTR XTAL 7615 7050KC 9 STGS AERIAL ZEPP RCVE 1 V 2

REMARKS

COUNTRIES **EWAC**

QSL IN USE

ST. MATHEWS, KENTUCKY
5935 GILMAN AVENUE

W9PLM

RADIO 6770

ON 14-15-20 BAND YOUNG

REMARKS: 928.8 watt

ROBERT B. PARMENTER

Q530 WKB 241 061 MC 9 52 EST QM 5 R5 QRM SOME QRM

REMARKS: 6 bands very much for the FABER. I am proud of it.

QSL DM 736

João Ant^o de Souza Ribeiro
Rua Santana Vianna, 93
Cidade Postal, 1390

SÃO PAULO

DATE 27/8/93 LOCAL TIME 21 hours

TO RADIO: Q530

ORX R47 ORI T9 OSA 5

F8ZJ

Votre Réception:

AC. RAG. MC.

T. ON 14-15-20

QSA 5 QREK

QRO: 7

QSB: QM

QSL: 5

ENTER: P.P. 210 - T.N.T. - Q50 no SW

REB: NATIONAL SW 45

TO RADIO: Q530

TO CW: 14 MC

BRASIL

PY 2 EA

AERIAL: ZEPP

SIGS WRD HR 25.5.93 QSA SR 1 TONE

QX. QRM. QRN. QSS. QY

Be gel van 73

well. Oh yes, it was a real pleasure for me to G50 you. I hope to repeat it soon. Cheers - port land

PY-2 BA

BEST 73.5 DX. PSE. QSL

RENE COCITO

ROA PAULA SOUZA 74 • BOX 1511

SÃO PAULO BRASIL SOUTH AMERICA

HAVANA - CUBA

Band 27 QSA ✓ R Date 3-3-93

Julio Llanas, Ope.

BOX 382 73



F.8 FA

PIERRE DELERIN, MALAUNAY TO RADIO Q.527 NR.

FOR: HRD

UR SIGS WRD HR ON R.P. 1836

CARD RCO

OCT 14 1993

ORGT QAS R6 ORI Q5 OR

RECVR: Schwall

X MITTER: C.C. INPUT 5 WATTS

Mod. HEINROD Bismarck Ant. ZEPPERIN

PSE QSL vs REF or DIRECT

Best 73 de fb Lack de om

VISITEZ • VISIT • BESUCHT

ROUEN

VILLE - MUSEE • MUSEUM CITY • MUSEUM STADT

COZLL

PSE QSL

NY2AE

VERIFYING YOUR RECEPTION OF OUR TWENTY METRE PHONE SIGNAL

EAST YORK, ONTARIO

Radio G530 ur Sigs WRD hr 15.8.1935 at 18.55m

R-ST 5.5.9 QRM on 1/4 MC Band

Nmtr 150 WTR

5626 N. Maryland Ave., Portland, Ore., U. S. A.

RADIO G530 UR SIGS WRD ON 15.8.1935 AT 2215 P

OSA 0-5 R 6 TONE 7.4K ORG 1/4 MC COMDX

FROM

VK-2JU

16523

DATE 1935

MADE TO MAKE 17A 930

CBS OF THIS WAVE

VE3UG

REMARKS: 700 Wm Bar 10.5.1935 on G5L

252 WESTLAKE AVE

4750 Clm

W7AMX

RX: 6 tubes super det XMTR HK 354-500 wtr

REMARKS: 250 watt had had trouble for 7 APR. 6 tubes every

BD 3 tubes along with top for 900 watts it was on

DET QSL

73

ARTHUR H. BEAN

CONFIRMING Q50 WITH 9570 ON 1/4 MC

TIME 2017 KC 14300

ROT 549

QRM

W2GTZ

XMTR 47X-46-42A 300-W

PSE QSL-TNX

R.O. STROCK

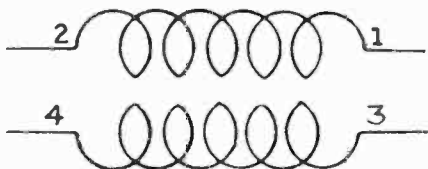
88-41 198 ST. HOLLIS L.I. N.Y.

Here are the New **LISSEN Hi-Q** Components



Hi-Q Decimal Dial and Slow-Motion Drive.—A slow-motion drive for ultra short and short-wave work with an entirely new type of dial divided into 1,000 divisions. The dial is divided into 10 divisions for approximate tuning by the small pointer, and each division is sub-divided by the large pointer into a further 100 divisions so that accurate calibration is possible by decimal readings. The reduction of the drive is about 25:1, while special spring gears eliminate all trace of backlash. Complete with condenser-fixing bracket

(Hi-Q-5655) 12/6

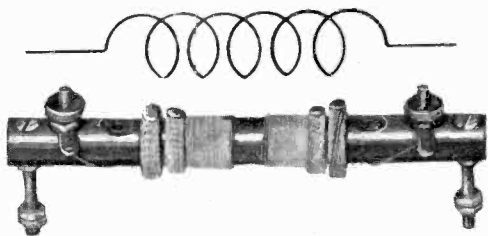


Hi-Q 4-Range Rotary Coil Unit.—Designed to ensure minimum losses. Four bands from 4.8-9.1 metres can be selected by a turn of the knob, while the positive contact of plug-in coils is retained. The insulating material is of low-loss ceramic. Switch contacts are solid nickel and self-cleaning.

(Hi-Q-5649) 15/6

Hi-Q Ultra Short and Short-Wave Choke.—A special double-wound, low resistance H.F. choke for use in the filament circuit. Specially designed for use in the types of circuit used with the Lissen rotary coil unit. The resistance of this choke is less than .05 ohms.

(Hi-Q-5645) 2/6

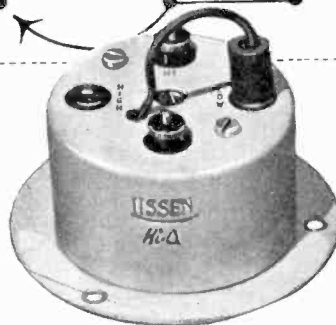
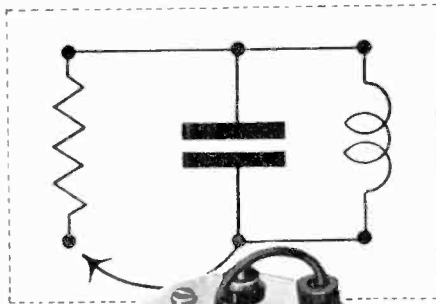


Hi-Q Ultra Short and Short-Wave Choke.—H.F. choke for use in anode or reaction circuits. Inductance 100 microhenries.

(Hi-Q-5656) 2/-

Hi-Q I.F. Unit.—A tuned anode coupling unit for an I.F. frequency of 50 k.c. specially designed for circuits incorporating the Lissen rotary coil unit. A device for damping the circuit and reducing the sharpness of tuning is incorporated for use on the ultra short-wave bands.

(Hi-Q-5654) 7/-

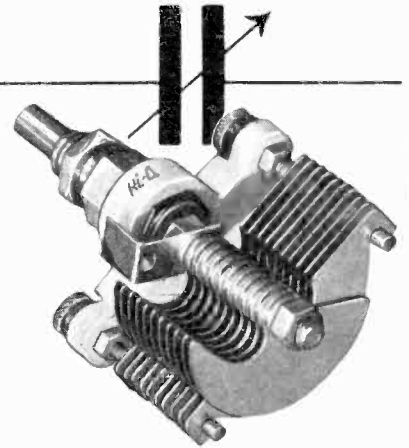
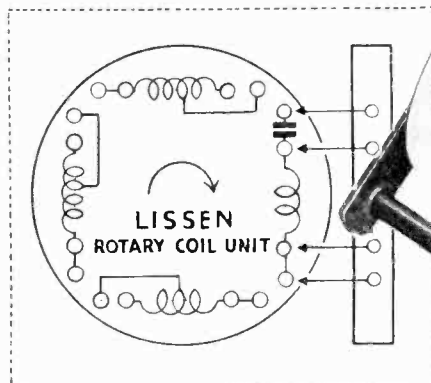


An extra coil for use with this unit to cover from 7.5-17.5 metres.

(Hi-Q-5647) 2/6

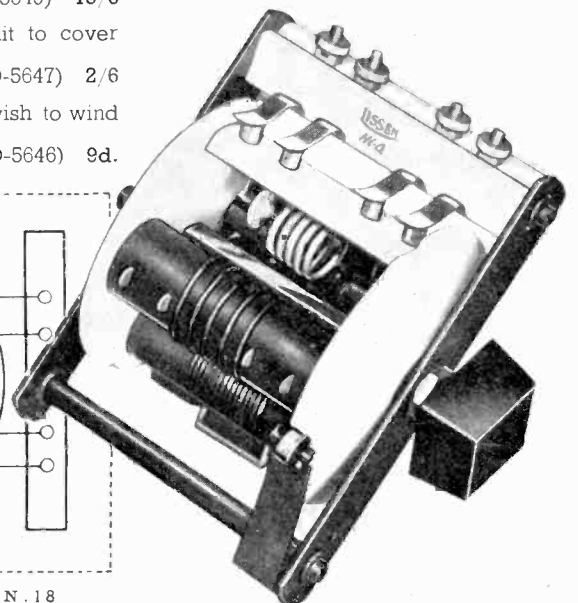
An unwound former for those who wish to wind their own coils.

(Hi-Q-5646) 9d.



Hi-Q Low-Loss Condenser.—A special low-loss condenser with a minimum capacity of 5 micro-micro-farads, absolutely noiseless in action even at 5 metres. Ceramic end-piece. Brass vanes soldered to their supports. Rotors provided with a special low-resistance direct contact which on test shows losses under half that of the old type "pig-tail." This condenser is made in two types:—

160 mmfd. ... (Hi-Q-5652) 7/6
20 mmfd. ... (Hi-Q-5653) 5/6



Three New
Hi-Q
Receivers
for 5—175 metres

Short Wave

Two New
Hi-Q
Transmitters
for 20 and 40 metre
bands

The first journal in Great Britain devoted entirely to the interests of the short wave listener.

Editorial and Publishing Offices:
"Short Wave," 63, Lincoln's Inn
Fields, W.C.2.

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No. 3.

TELEVISION Begins from Alexandra Palace.

Possible Date—Oct. 23rd.

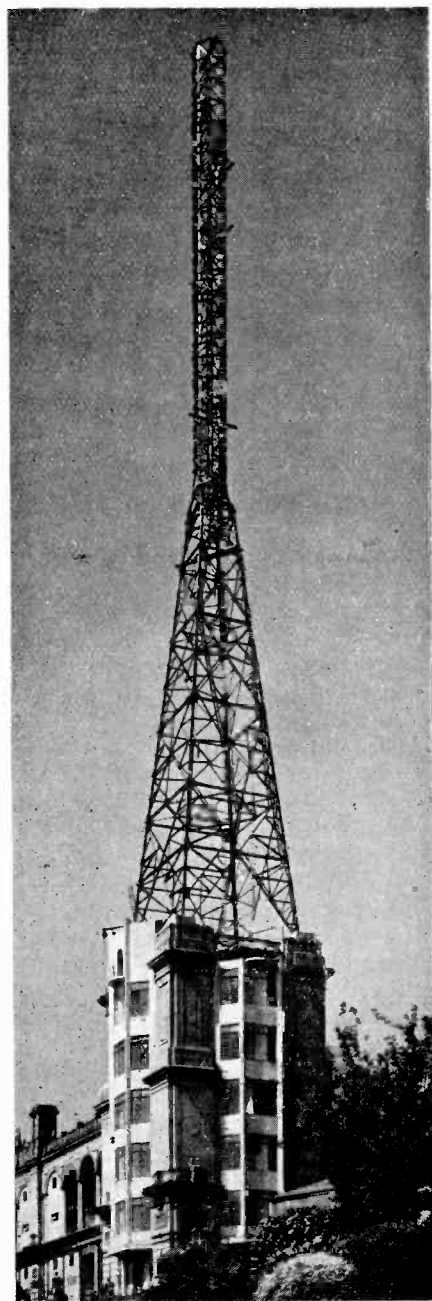
You can hear the Programmes on the new Lissen Hi-Q receivers, and on your present set with the Hi-Q Converter.

Daily transmissions are taking place during the Radio Show at Olympia so that the public can see actual transmissions of television reception and it is expected that television transmissions will begin in earnest in the Autumn.

Short Wave have it from good authority that the date on which these broadcasts are starting is

October 23rd. Three programme periods are contemplated daily at 3—4 p.m., 6.15—7.15 p.m. and 9.30—10.30 p.m. and the sound signals will be radiated on a frequency of 7.2 metres (41.5 Mc/s) on a power of 3 kilowatts.

Vision signals will be radiated on a frequency of 6.6 metres (45 Mc/s) on a power of 17 kilowatts peak during periods of maximum modulation.



SHORT WAVE presents a ONE ACT

All World Drama

Enacted in Broad Daylight
On Four Wave-bands

IN which take part three Players. The NOVICE, who has discovered the thrills of all world listening, The OLD HAND, one-time fanatic home-constructor, who has been out of touch with the trend of radio progress these last few years, and the LISSEN ALL-WAVE SUPERHET.



SCENE: A COMFORTABLE ROOM IN AN OUTERSUBURB. ONE CHAIR R.; AND A LISSEN ALL-WORLD SUPERHET ON A SMALL TABLE, L. CLOCK ON THE MANTLEPIECE POINTS TO 1 O'CLOCK. DAYLIGHT OUTSIDE, SO IT IS EVIDENTLY LUNCH TIME.

THE NOVICE glances at the clock and switches on the set.

Enter THE OLD HAND, a man of perhaps forty, who has been everywhere, done everything and looks the part.

Old Hand: So you've got the Lissen going. Let's hear what it can do.

Novice: Let me consult my Hour by Hour Short Wave Guide.* Ah—I see Pittsburg's working on 13.93 metres—I'll try.

Old Hand: Can you get that on the Lissen? I thought none of these commercial short wave sets went below 19 metres—but this tunes to 13 does it—wonder if it's any good down there? Have a shot.

Novice: There's something—is that it?

Old Hand (listening): No—that's an Empire transmitter, try a bit lower—just a degree or so—ah—there's a carrier. Hold it boy—he's coming!

Lissen All World: "programme comes to you from W8XK. the

Westinghouse International short-wavestation at Pittsburg, United States of America.

Old Hand: Well, no mistake about that. I must say it's very clear and very little swishing in the background. That music's good—gramophone I suppose, seeing it is only eight in the morning over there. Anything else on at the moment?

Novice: Nothing from America till two—the European short wavers are just too easy—there's Zeesen.

Lissen All World: Hallo dear friends and listeners of South East Asia, this is the short wave station D JN calling you . . .

Old Hand: Here—hey—how did you change from 13 to 31 metres so quickly?

Novice: Switch—there are two short-wave ranges on this. DJN's just one degree higher on the 30—80 metre scale than W8XK is on the 13—30.

Old Hand: Good quality, too by Jove. There weren't any German stations using short waves when I was on the job. In fact KDKA on a hundred was absolutely the only telephone short waver when I started. I recall one night—it

must have been round about Christmas 1924—when the B.B.C. relayed KDKA—but that is another story.

Novice: Well, come on let's go and eat.

Old Hand: Yes, and I'll tell you about some of the joys and sorrows of short wave listening a dozen years ago.

(Exit Novice and Old Hand. An hour passes. They return looking satisfied and cheerful.)

Old Hand: Well now, let's get to work. It has just gone Two—what about W3XAL from Bound Brook. He ought to be on. Hello, got him?

Novice: Sounds like him.

Old Hand: I am not so sure though, there is a bit of a wobble in that transmission, but I believe it is one of the Empire Stations. Just tune very slightly above, . . . that's him.

Novice: No, I think I have gone right through—it sounds like German.

Old Hand: But you've hardly

* Presented Free with Short Wave No. 2.

moved it and the two stations absolutely merge into each other.

Novice: Ah!—well you see I have got the selectivity control the other way. Look, I've turned it fully clockwise and now the German and English voices are completely separated.

Old Hand: Hm—that's good. Series aerial condenser I suppose?

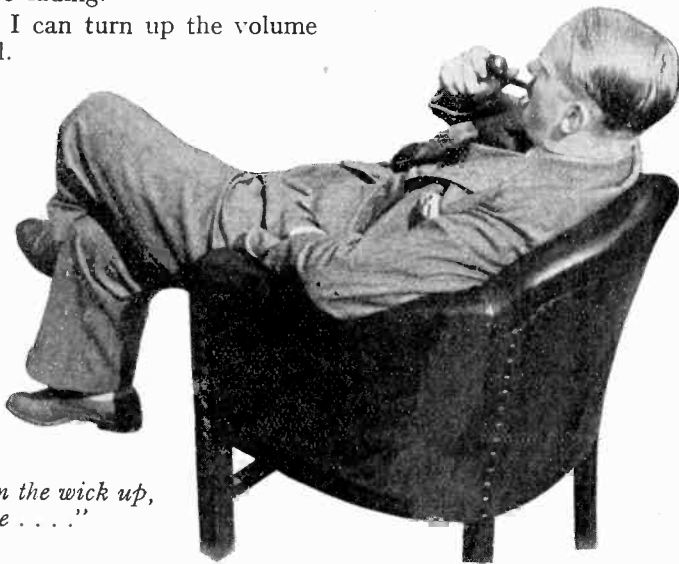
Novice: Something much better than that—variable coupling on the intermediate frequency amplifier—actual mechanical movement of the primaries and secondaries.

Old Hand: Oh, that's a smart idea. Well anyway, as there is 30 k/c.s. between the two, Bound Brook should be there. I believe you are on him.

Novice: I have got some morse—yes, yes, I have got the carrier wave—there he comes.

Old Hand: A bit feeble. Still he may be fading.

Novice: I can turn up the volume control.



"Turn the wick up,
Laddie . . ."

Old Hand: Yes, that certainly increases his strength amazingly!

Novice: Of course, once I have got him, I can widen the selectivity, but it may bring in more interference.

Old Hand: Yes it does. Wait—he is gaining strength every moment. My word, it is really good now, isn't it! Well, where do we go from here?

Novice: Not much variety on the short waves from now till three or four—would you like to have a look round the ordinary broadcast band?

Old Hand: Yes, I certainly should. One famous All-Wave set that I tried last year was fairly good

ALL stations mentioned in this dialogue were actually received on a Lissen All-wave superhet, Model 8114, working on an ordinary aerial 20 miles N.W. of London, between August 1st and 4th—a period, when short wave conditions were, according to the radio press, "very variable."

on the short waves, but I have never heard anything less selective on the medium and long waves.

Novice: Righto—over we go.

Old Hand: I must say I like this idea of being able to go over from 13 to 2000 metres with a switch. What is that coming in now?

Novice: Luxembourg, of course—the British Listener's Sunday Station.

Old Hand: Well, honestly I have never heard it so free from interference. How is your selectivity control?

Novice: About half way.

Old Hand: Try the effect of putting

again, the set doesn't overload, but my ear-drums have!

Novice: Now, there you see is Deutschlandsender absolutely clear from Droitwich! There's Radio Paris, and there's Lahti, there, my beloved hearers, is Hilversum.

Old Hand: I give this set full marks—if a station can be got, this will get it! Let's go back to the 19 m. band and pull in some of the distant stuff.

Novice: I will try for W2XAD and the 19 m. W8XK—they are sometimes quite good at this time of the afternoon. Schenectady is there but he is very weak—this ought to be Pittsburg. The music has stopped—now for an announcement—Oh, it's Eindhoven. Well, Pittsburg is the next channel up—yes, there he is!

Old Hand: He is not very strong.

Novice: Well, I can strengthen him a bit by widening the selectivity—there you see!

Old Hand: Yes, but now you are getting interference from Eindhoven or Zeesen—or both. Still Pittsburg is much stronger.

Novice: I am going to reduce the volume a bit, keeping the selectivity where it is. You see, that cuts out the interference for all practical purposes.

Old Hand: Well, I must say I am impressed. This Lissen leaves the control of interference in your hands. . . you've switched over—what are you after now?

Novice: Just wait a minute.

Old Hand: Hullo—the Lost Chord. I wish I had a pound note for every time I have heard that broadcast! Is that one of the German stations.

Novice: Patience, *cher maitre*, and all shall be made clear.

Lissen All World (brightly): This is - 2ME- Sydney - the - Voice - of-Australia.

Old Hand: Well I have heard him, but I always thought he was mixed up with morse.

Novice: I had him last Sunday about half past five, and a little

the selectivity at its widest. The quality is amazingly life-like! What happens if you turn the control fully clock-wise?—Oh, I see, it cuts out some of the top speech frequencies, but the tone still is excellent.

Novice: There's Warsaw!

Old Hand: And only a 6 k/c. separation!

Novice: There's Motala, and there, of course, is our old friend Droitwich.

Old Hand: Where is your volume control?

Novice: Right back.

Old Hand: Turn the wick up, Laddie, and see when she overloads. (*Shouting.*) Turn it down

Short Wave



1 & 2

Copies still available.
Price 3d. Each
Post Free.

From:—

Dept, SW3,
LISSEN LTD.,
113, Charing
Cross Road,
W.C.2.

Whether you are a "ham," an enthusiastic short wave listener or just "don't know much about wireless," you will find plenty to interest you in *Short Wave* Nos. 1 and 2.

Short Wave No. 1 contains articles about the Empire Transmissions from Daventry, How to learn the morse code, How to erect a short wave aerial, The activities of British amateurs, etc. It contains also complete building instructions for a remarkable 3-valve *Short Wave* receiver—the Lissen Bandspread 3. A blue print is supplied free, together with point-to-point instructions. Another free gift is a complete *Short Wave* Time-Zone map of the world.

Blue Print Free
with *Short Wave*
No. 1.



Price 69/6
Complete with
Valves

THE LISSEN
BANDSPREAD
SHORTWAVE 3

H.P. Terms: 20/- deposit and 10
monthly rentals of 6/6.

Short Wave No. 2 contains interesting and valuable information about American *Short Wave* broadcasts, Ship transmissions, The division of the ether spectrum, QSL cards, *Short wave* aerials and an Index of Call-Signs, etc. Further information is given about building and operating the Lissen Bandspread 3. Presented free with this issue is an Hour by Hour *Short Wave* Listening Guide which is of tremendous value to everybody who builds one of the new Hi-Q receivers or buys a Lissen All-Wave set.

"*Short Wave*" is the only journal in this country devoted entirely to the interests of the *Short Wave* listener.

jamming did come in. Do you mind if we wait on this and see what he gives us?

Old Hand: Some of the talks about Australian travel and conditions are thoroughly interesting . . .

(An hour passes)

Old Hand: Well, good morning, good afternoon and good evening to you 2ME! That has been extremely fine reception, and about the longest distance any wireless signal can travel in this world! I am beginning to think my own set will have to give way to something more modern. Getting Australia with mine means sitting with one hand on the tuning-knob—with a Lissen you set it on the wavelength, adjust your selectivity to get clear of interference, choose your volume—and then you sit back!

Novice: There's something that sounds queer—some station badly heterodyned by C.W. I suppose.

Old Hand: Half a jiff—I've heard noises like that before, it takes me back to—never mind.

Novice: What do you mean?

Old Hand: You listen my son—it's a transmission all right.

Novice: It seems to be going on and on endlessly.

Old Hand: "and the epitaph drear, a fool lies here who tried to hustle the East." Now it's over though—listen.

Novice: Heavens, what language was that—Mexican?

Old Hand: Guess again.

Novice: Why, there's 'God Save the King'—and now they've closed the station down, the carrier's off—where was it?

Old Hand: Bombay—VUB That was genuine Indian music.

Novice: I say, that's rather an achievement, isn't it.

Old Hand: It's a first class testimonial to the Lissen. Let's wander a bit more about the Empire—tune her just about 49 metres.

Novice: Two stations there.

Old Hand: Yes, Belgrade and Vienna, but push your selectivity knob hard over, and you'll find one between them.

Novice: Music—'Cavalleria Rusticana'—rather faint, is it Nairobi?

Old Hand: Faint, yes—but after all it's only half a kilowatt, and twice as far away as New York! The strength will improve as darkness falls.

Novice: Do you realise we've had

all the continents since lunch time?

Old Hand: Except *South America*, but you'll probably get plenty from there later on. Let's stick to *Kenya* for a bit, and then we'll take the dog for a constitutional.

(Later)

Old Hand: Well, now that it's thoroughly dark we have a new set of conditions to cope with. The 16 m. and 19 m. stations won't be much good for long, but 25 m. and 31 m. should improve steadily and towards midnight there will be a lot to hear on 49 m.

Novice: W2XAF is the best American station I've had so far.

Old Hand: Yes—but you can't be so sure of him now he shares a wavelength with Jeloy. Have you had W1XK—relays WBZ?

Novice: No—shall I try?

Old Hand: I should say it's early yet—remember it won't be dark in *America* till midnight by our time. You might have a look at 25 metres meanwhile.

Lissen All-World: . . . "aims at the complete suppression of the individual and the destruction of those democratic ideals . . ."

Old Hand: Propaganda!—that's W1XAL, Boston—a station more or less run by the *Christian Science Monitor*.

Novice: That's about the strongest and steadiest American I've had.

Novice: Well, now I'm going after W2XAF—the 31 m. Schenectady station. Here it comes.

Old Hand: Now try tuning a bit above—no, slightly higher than GSB—there you are.

Novice: Rio de Janeiro?

Old Hand: Yes—and from now on you could probably hear about a dozen other *South Americans*. Well, I'm going to leave you to it. The real beauty of the short waves to my mind, is that you listen to the whole world and still go to bed before midnight.

Novice: And you approve of the Set?

Old Hand: Laddie—it has opened my eyes—both on it's performance and in the way it makes short waves listening child's play. If anyone asked me to write an advertisement for it, I should say that it makes short wave listening simple as A.B.C., and that if any set can get a station a Lissen will get it! Good night!



*Photograph by courtesy
of the Australian Trade
Publicity.*

This is a Call Sign you won't forget

HAVE you ever heard a bird laugh? Listen to the Kookaburra bird, native of Australia — sometimes called the Laughing Jackass. Its shrieking demoniacal laughter is the call sign of Sydney, New South Wales.

“The Voice of Australia”

WE had the opportunity recently of discussing short-wave broadcasting with one of the leading engineers from Amalgamated Wireless of Australasia. He was of the opinion that Australian broadcasting of all types was as good as any in the world, and was particularly surprised and not a little hurt, to find that British listeners were inclined to listen mostly to American stations on their short-wave receivers.

It must be admitted that most listeners do instinctively listen to Schenectady, Pittsburg, Boston and other prominent American stations, and tend to ignore the remainder of the world.

Feeling that listeners may have got into a rut, and that the Australian was correct, we decided to listen awhile to the three Australian stations that are actively putting out reliable programmes.

SYDNEY

First of all we checked up on the wavelength of these stations so as to get the approximate dial reading. Sydney, with a call sign of VK2ME, uses a frequency of 9590 Kc. equal to 31.28 metres, and a power of 20 Kw. The American station, Schenectady, on 31.48 metres, is very close in wavelength to Sydney, so find one and the other will not be far away.

Sydney, during September, will be radiating from 6 to 8 a.m., 9.30 a.m. to 2.30 p.m., and 4.30 to 6.30 p.m. In October, the scheduled times for transmissions will be slightly altered to 5 to 7 a.m., 9.30 a.m. to 1.30 p.m. 3 to 5.30 p.m. These are all on Sundays, so that listeners will have a good opportunity of trying the three sessions and listening to some of the programmes radiated. The interval signal is the call of the Kookaburra bird which, once heard will never be forgotten.

Programmes are very similar in make-up to those broadcast from the B.B.C. Picking typical items at random, the following programmes can be heard on a Sunday. A radio revue for half-an-hour during the evening session, Vladimir Rosing, tenor, singing a selection of songs, and several other artistes well-known to English listeners. (Vladimir Rosing is, of course, the father of Val Rosing, one-time crooner with Henry Hall.) To finish off the evening session are some records featuring Jack Jackson and his orchestra.

MELBOURNE

These programmes are certainly lighter than those to which we are already accustomed on Sunday. We noticed some very good items from Melbourne too. This station, VK3ME, operates on a wavelength of 31.55 metres equal to a frequency

of 9510 Kc. Although the power is only 1.5 Kw., this station can be received quite well if conditions are at all favourable. The transmitting times are 9 p.m. until noon, Monday to Saturday. These are the most convenient for if you can't listen in the evening, try before breakfast.

An item worth hearing is the Hollywood news reel which comes on about 9.45 and the dance bands which usually start about 10.30. Occasionally records are used featuring famous American dance orchestras.

LYNDHURST

Lyndhurst on a frequency of 9580 Kc. 31.2 metres can be heard using a call sign of VK3LR. This is a brand new station and has only been actively on the air for a short time. It is coming in in this country at great strength and appears to be one of the most popular Australian stations on the air. The best time to hear this station is during its morning session. This spreads from 8.15 p.m. until 12.30 a.m., but the only time it is really worth hearing is between 6 and 8 a.m. This station is situated in the research section of the Post Office in Melbourne and relays many of the commercial medium wave stations. For that reason one can never be sure of what programme will be heard, but they are generally worth hearing.

How to make Head



CODE abbreviations are all descended from the days when morse code was used exclusively, and for the sake of speed some of the code is still retained.

Amongst the codes used by amateurs at the present time are the International "Q" signals, the QSA, R, and T systems. These codes are very easy to remember and particularly useful even to the broadcast listener.

" R " CODE

If, for example, you wanted to send a report to an amateur station, and merely said that he was coming through very well at good strength, it wouldn't convey very much, and yet you would be very hard put more fully to explain the strength and quality of the signals. That is where the R or audibility code comes in. Here is the code. It is self explanatory.

- R1 faint signals just audible
- R2 weak signals, barely readable
- R3 weak signals, just readable
- R4 fair signals, easily readable
- R5 moderately strong signals
- R6 good signals
- R7 good strong signals that would penetrate interference
- R8 very strong signals that can be heard several feet from headphones
- R9 full loud-speaker strength

On the rare occasions when the amateur station overloads the loud-speaker, a report of R9 plus is given.

" QSA " CODE

It is quite an easy matter mentally to split up the volume into

nine sections and give an accurate report so that the recipient would know how he was coming through. But, on the other hand, a very strong station might be almost unreadable if the atmospherics were particularly bad. For that reason a qualifying code is used. This is the readability or "Q" code, and is as follows.

- QSA1 almost unreadable
- QSA2 weak, intermittently readable
- QSA3 fairly good, readable with difficulty
- QSA4 good readable signals
- QSA5 very good signals, word perfect



R9 Full loud-speaker strength

It is quite obvious to everyone that a report R9, QSA5 would indicate that the station was putting out a signal that could be heard at full loud-speaker strength and word perfect, whereas R3, QSA3 means hanging tightly on to the headphones, the slightest noise overriding the weak signals. These codes are really most useful, and it would be almost impossible accurately to give a proper report without them.

" T " CODE

The "T" code is for CW or morse code only, and is used to indicate the quality of the note. It was originally introduced by the American station, WSRY, but is now in general use. This "T" code is:—

- T1 very bad 25 or 50 cycle A.C. ripple
- T2 rough, 50 cycle A.C. ripple
- T3 bad ripple on note
- T4 small ripple on note
- T5 nearly D.C. but bad key thumps
- T6 good note, but not quite pure
- T7 pure D.C. note, but key clicks noticeable
- T8 pure D.C. note, but not equal to T9
- T9 fine steady crystal controlled D.C. note

When listening to a CW station, for example, a report could read, R8, T9, which means strong signals and pure note, whereas phone station would be R8, QSA5. Try practising these codes and when sending out the next batch of report codes use them sensibly and then the report will be of more value.

" Q " CODE

How often have you heard a station reporting "very strong signals, O.M., but bad QRM or QRN (QR Norway)?" QRM is another one of the standard International "Q" signals and is interpreted as interference from another station. In practice, QRM is used to indicate almost every type of interference that spoils the transmission. QRN, however, is atmospherics and similar static interference. Owing to the difficulty of distinguishing between M and N over the air, you will also hear QR Morocco and QR Norway.



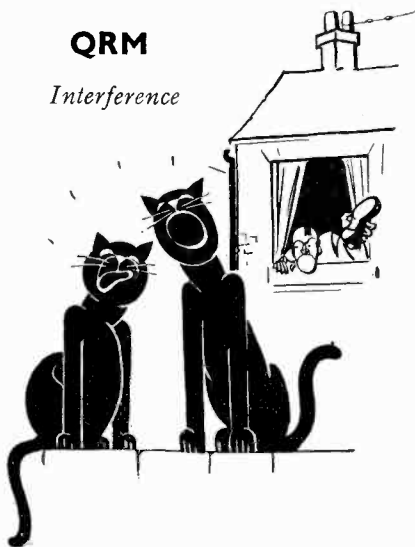
T3 Bad ripple on note

and Tail of the

The "Q" code is very extensive and covers almost every possible phrase but amateurs only use a few of these which refer to their particular work. Here are but a few of them.

QRM

Interference



QKC	What is your frequency?
QRA	The address or location of a station
QRG	What is my exact wavelength?
QRH	Does my wavelength vary?
QRK	An indication of strength
QRM	Interference
QRN	Atmospherics
QRO	Increased power
QRP	Decreased power
QRT	Stop transmitting
QRU	Is there anything further?
QRX	Wait
QRZ	Who is calling me?
QSA	Signal strength
QSL	Acknowledgment of reception
QSO	A communication or contact
QSY	Frequency change

These are but a few of the "Q" codes and they are easily understandable. They are used very flexibly but their meanings will always be apparent. A station will ask: "What is my QRK?" and the reply is R7 or R9 as the case may be. If a station finds that his transmission

"Q" CODE

—and the "R," code, "T" code and "QSA" codes.

LISTENERS who have not had very much experience with the reception of short-wave stations will be puzzled at some of the expressions used by amateur transmitters. For instance, you may hear "Yr YL comes in here very FB OM. Your signals OSA5 R9 OM."—and wonder what on earth it means! This article explains all.

is being interfered with he says: "Shall I QSY," meaning shall I alter my frequency to dodge the interference. At the end of a transmission an operator will call "I must QRT," meaning he is going to close down. When two stations work together it is called QSO and as an acknowledgment of the contact a QSL card is sent. If one station hears another station calling him but misses the call sign, he uses the "Q" code, QRZ. A low-power station is usually referred to as a QRP rig, while reversely, a QRO means high power.

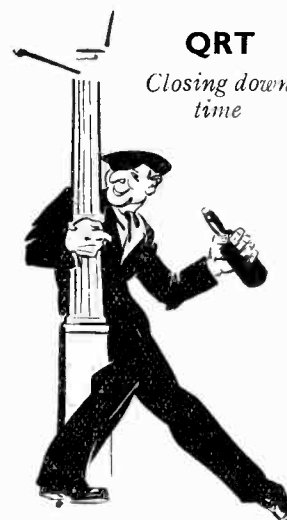


**Very
QRK**

Very strong

QRT

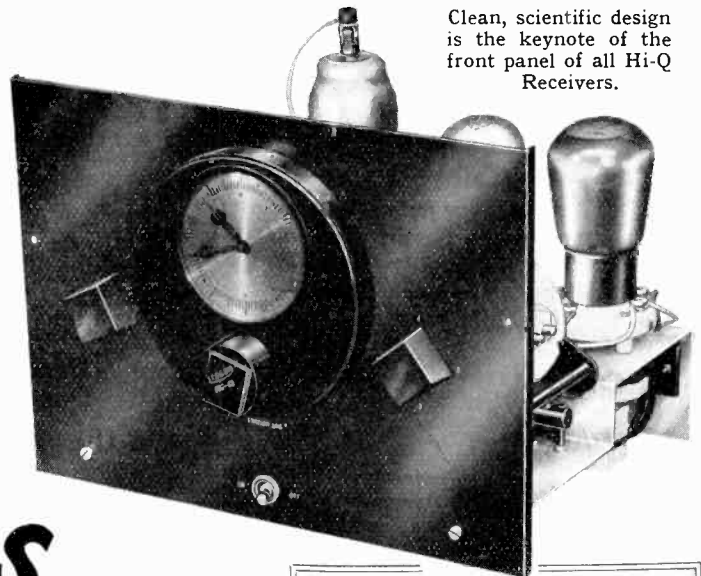
Closing down
time



Next time you hear an amateur station giving a report such as "Your signal is coming in here very FB OM R9 QSA5 no QRM no QRN," you will know that the signals are being received very well (FB or fine business, OM being the usual abbreviation for Old Man) at full loud-speaker strength and word perfect, free from interference and atmospherics.

These codes are international in character and all countries use the same abbreviations. For that reason it is quite possible to give reports to foreign stations and to receive reports without knowing any foreign languages at all.

All About the LISSEN Hi-Q Receivers For 5-175 metres!



Clean, scientific design is the keynote of the front panel of all Hi-Q Receivers.

WHAT DOES

Hi-Q

MEAN ?

Q is a technical term denoting the quality or "goodness" of a component or piece of apparatus.

High Q, or Hi-Q as it is generally known amongst technical people, means the highest possible "goodness" or efficiency.

IN designing these new Hi-Q receivers to tune from 5—175 metres Lissen have accomplished something which has been repeatedly and unsuccessfully attempted by many radio designers. Not only that, but they have gone one step further and made a tuning range of 5—91* metres possible without coil-changing and have so designed the receivers that a certain amount of latitude is left in the wiring to ensure that every home constructor can cover these wide wave bands.

The thing that has made all this possible is the new Lissen rotary coil unit. Hitherto losses encountered with the ordinary type of switched coil unit were so high that wavelengths below 6 metres were impossible.

Hi-Q Straight Four

The Hi-Q receivers are virtually designed around this rotary coil unit. Skilful design and clever chassis layout have reduced all stray capacities to a minimum.

In the straight receivers an electron coupled detector is used. You will notice that between the anode and the H.F. side there is an earthed suppressor grid and a screen grid which is earthed to H.F. through a .001 mfd. fixed condenser. Not only does this completely eliminate the old trouble of threshold howl, but it does away with all elaborate and expensive decoupling.

Furthermore it utilises that part of the valve where the internal capacities are lowest and incidentally cuts inches of wire which would be used to bring the anode of the valve to the oscillatory circuit.

The L.F. end has been designed to produce the best possible quality and it is adequately decoupled so that even with a badly run-down H.T. battery there will be no fear of "motor-boating."

The addition of the aperiodic H.F. stage in the Hi-Q straight 4 affords greater ease in tuning together with increased sensitivity. It also isolates the receiver from the aerial and eliminates "blind spots" due to aerial resonances.

Hi-Q Superhet

The first detector oscillator of this superhet is a normal adaptation of the already efficient H.F. side of the Straight 4. The unique feature in this receiver is the I.F. unit which is accurately pre-tuned on elaborate test instruments, before it leaves the factory. The low intermediate frequency of 50 k.c. was chosen after careful research as it gives the required selectivity together with a sufficiently broad band to ensure good quality reception.

A damping device is incorporated with the I.F. unit whereby selectivity can be lowered on the ultra short wave band to make for easier tuning.

The Hi-Q Superhet is probably the only kit superhet receiver produced in this country which requires no trimming by the home constructor who cannot be expected to have access to the expensive instruments required.

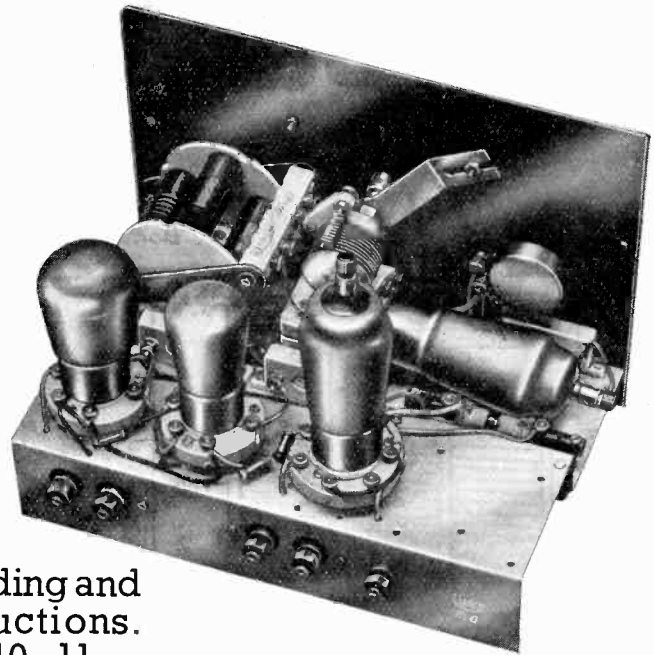
Hi-Q Converter

As in the case of the other Hi-Q Receivers, the Converter has been designed around the rotary coil unit and is unique in so much as it is the only Converter on the market tuning from 5—91 metres without coil changing. It incorporates also a switch device which enables the Converter to be cut out at will and your present receiver used on the ordinary broadcast bands.

With the Hi-Q Converter added to your present receiver, you can tune from 5—2000 metres almost without a break without touching a single wire! The Hi-Q Converter can be added to any existing receiver—battery, mains or universal—no matter whether it is a superhet or straight receiver.

* A further range of 75—175 metres is also possible by changing one coil.

The Hi-Q Straight 4



Operating Instructions.

Check the wiring, connect up the batteries, aerial, earth, etc., and insert the valves.

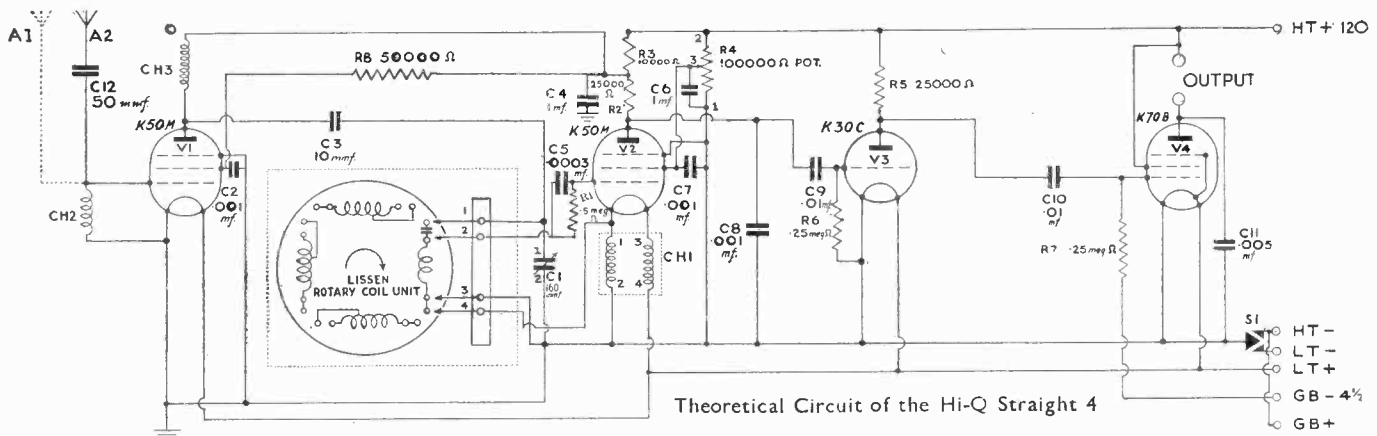
Using your left hand gently advance the regeneration (left hand knob) until a slight hiss is heard; while, with your right hand, you turn the pointer of the tuning dial. Rotate the regeneration knob in a counter clockwise direction, keeping the hiss at its lowest pitch. At a certain point speech or music will be heard. This is the critical regeneration point and is the position at which the receiver is in its most sensitive condition for this wave-length. In order to get the best results, you should always try to tune as closely as possible to this point.

On the two lower wave-bands, further advance of the regeneration control (clockwise) will produce super-regeneration, which greatly increases the selectivity, largely counteracting the effects of fading and frequency drift. Changing the aerial from A1 to A2 may often give increased volume.

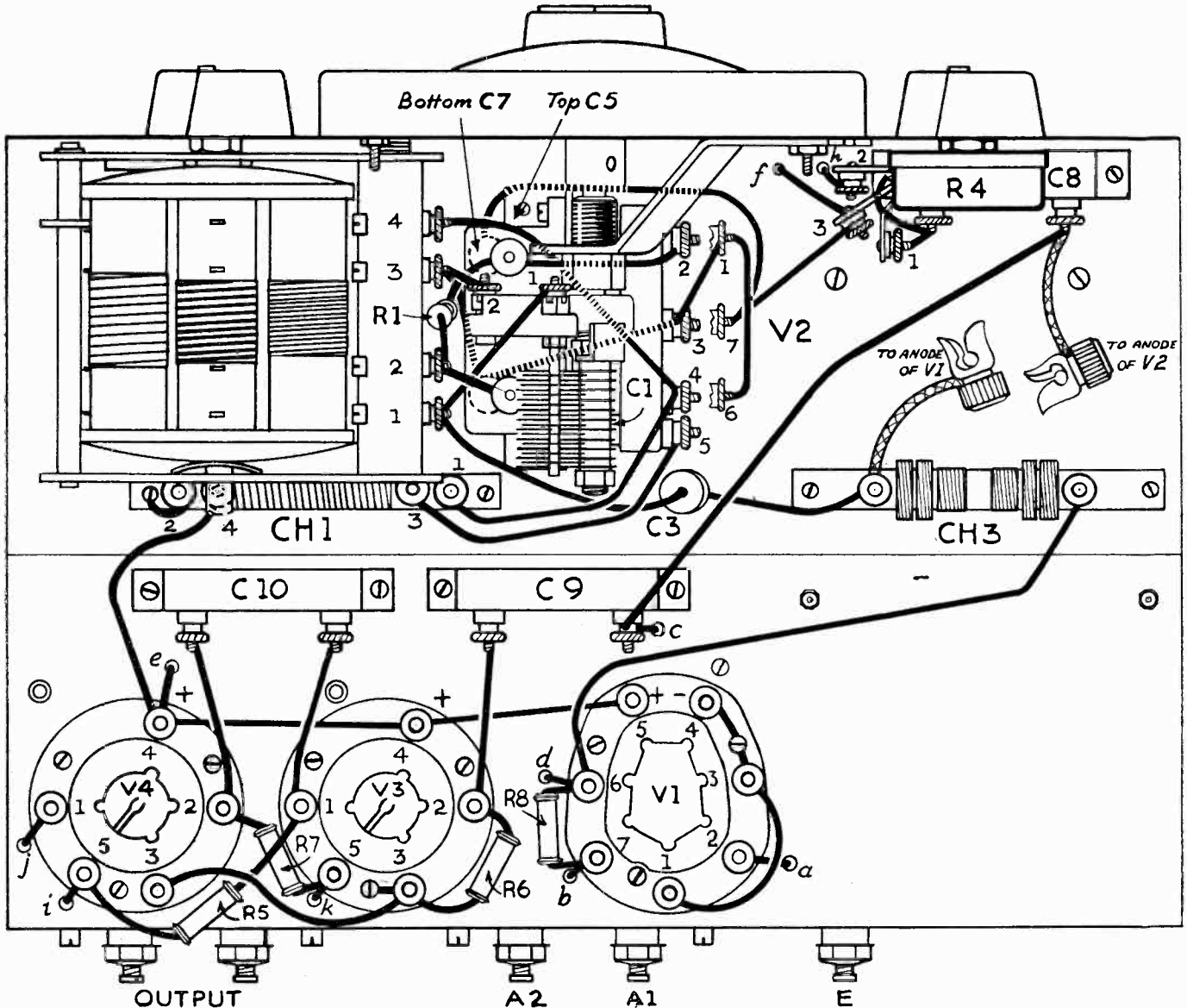
Complete Building and Wiring Instructions. See pages 10, 11.

Parts Required for the Hi-Q Straight 4.

Lissen Hi-Q Rotary Coil Unit (Hi-Q-5649) ...	15/6	C11—005 mfd. (Hi-Q-5637) ...	1/-
Hi-Q 75-175 metre Coil (Hi-Q-5647) (Optional) ...	2/6	C5—.0003 mfd. (Hi-Q-5640) ...	9d.
C1—Lissen Hi-Q Tuning Condenser, 160 mmfd. (Hi-Q-5652) ...	7/6	Fixed Condensers (Lissen Hi-Q Mansbridge Type):—	
Lissen Hi-Q Decimal Dial and Slow Motion Drive with Condenser Holding Bracket (Hi-Q-5655) ...	12/6	C4, C6—1 mfd. (Hi-Q-5642) each	2/6
Lissen Hi-Q Chassis and Panel, including Sub-Panel (Hi-Q-5660) ...	7/6	Fixed Condensers (Lemco Sprayed Mica Type) C3—10 mmfd.; C12—50 mmfd. ... each	9d.
CH1—Lissen Hi-Q H.F. Filament Choke (Hi-Q-5645) ...	2/6	Resistances (Metallised, 1/2 watt rating (Erie)):—	
CH2—CH3—Lissen Hi-Q Ultra Short and Short Wave H.F. Chokes (Hi-Q-5656) ... each	2/-	R3—10,000 ohms. ...	1/-
2 5-pin Low Loss Valve Holders (Lissen Hi-Q-5650) ... each	1/9	R2, R5—25,000 ohms. ... each	1/-
2 7-pin Low Loss Valve Holders (Lissen Hi-Q-5651) ... each	2/3	R6, R7—250,000 ohms. ... each	1/-
S1—3 point Switch (Bulgin),	1/6	R1—500,000 ohms. ...	1/-
Fixed Condensers (Lissen Hi-Q Mica Type):—		R4—Wire wound Potentiometer 100,000 ohms (British, N.S.F.).	5/6
C2, C7, C8—.001 mfd. (Hi-Q-5635) ... each	9d.	5 Terminal Sockets (Lissen Hi-Q-5648)	each 6d.
C9, C10—.01 mfd. (Hi-Q-5658) ... each	1/-	2 Ever Ready Valves K.50 M. ... each	11/-
		1 Ever Ready Valve K.30 C. ... each	4/9
		1 Ever Ready Valve K.70 B. ... each	11/-
		A small quantity of copper wire, 20 s.w.g. and 16 s.w.g.; rubber covered flex; insulated sleeving; 6 B.A. nuts, bolts, etc.; two screened anode connectors and terminal clips; 4 Lissen wander plugs; 2 Lissen spade terminals.	



Building and Wiring



FOLLOW THIS POINT-TO-POINT WIRING—AND YOU CAN'T GO WRONG

Before you bolt the front panel and chassis together, mount the following components on the chassis:—Valve holders V1, V3, V4; H.F. chokes CH1, CH2, CH3; Fixed condensers C2, C4, C6, C8, C9, C10, C11. Wire in this order.

Connect terminal 1 on valve holder V1 to terminal 3, holding-down screw and terminal 4 on same valve holder, connect terminal 3 on valve holder V3 to fixing down screw on valve holder V3 and to terminal 3 on valve holder V4.

Connect terminal 5 on valve holder V1 to terminal 4 on valve holder V3 to terminal 4 on valve holder V4 to terminal 4 on H.F. choke CH1; terminal 2 on H.F. choke CH1 to holding-down screw.

Connect terminal 2 on valve holder V4 to left-hand terminal on condenser C10; right-hand terminal on condenser C10 to terminal 7 on valve holder V3.

Connect terminal 2 on valve holder V3 to left hand terminal on condenser C9; right-hand terminal on condenser C9 to right-hand terminal

on condenser C8; holding-down screw on C8 to holding-down screw on C8, leaving a length of wire for connection to potentiometer R4 later.

Connect right-hand terminal on choke CH3 to terminal 6 on valve holder V1, then through chassis (hole d) to right-hand terminal on condenser C4; other terminal on C4 to holding-down screw.

Connect upper terminal on condenser C2 to holding-down screw; lower terminal on C2 through chassis (hole b) to terminal 7 on valve holder V1; terminal 2 on valve holder V1 through chassis (hole a) to right-hand terminal on choke CH2, then to aerial terminal A1 and to condenser C12; other side of C12 to aerial terminal A2; left-hand terminal on CH2 to holding-down screw.

Connect upper terminal of condenser C11 to holding-down screw; lower terminal on C11 to outer Output terminal, then through chassis (hole j) to terminal 1 on valve holder V4; terminal 5 on valve holder V4 through chassis (hole i) to inner Output terminal.

Connect left-hand terminal on CH3 to con-

denser C3; other side of C3 to be connected to coil unit later.

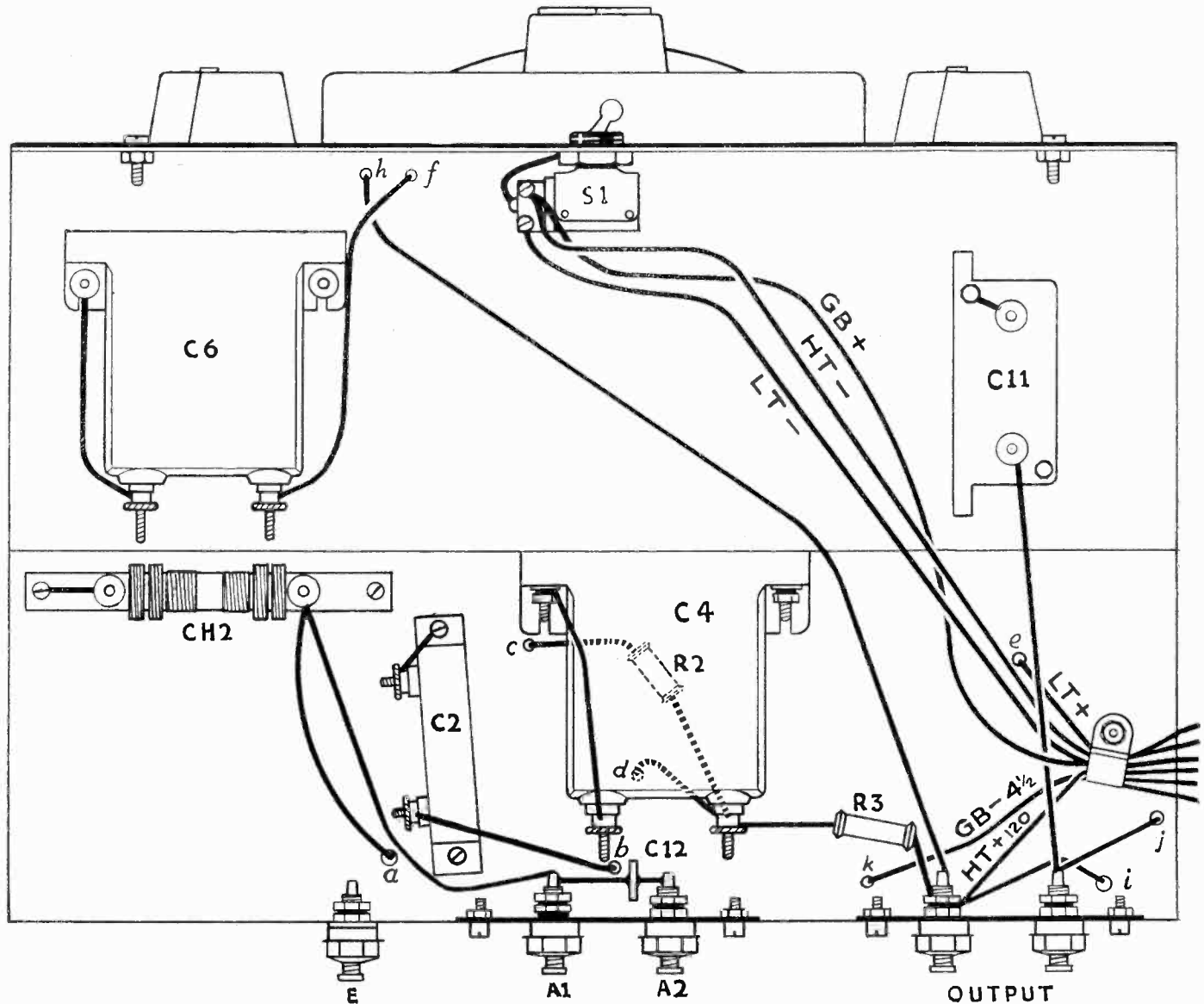
Now mount the two condensers C5 and C7 (C5 on top) and the valve holder V2 to the sub-panel connecting short lengths of wire to each terminal on C7 for connection to other components later. The sub-panel should in turn be mounted to the chassis and the following wiring completed:

Connect terminal 3 on choke CH1 to terminal 5 on valve holder V2; terminal 1 on choke CH1 to terminal 4 on valve holder V2, leaving a short length of wire for connection to coil unit later.

Connect terminal 6 on valve holder V2 to terminals 1 and 3 on same valve holder and to lower terminal on condenser C7, leaving a short length of wire for connection to coil unit later. Connect other terminal on condenser C7 to terminal 7 on valve holder V1, leaving a short length of wire for connection to potentiometer R4 later. Connect terminal 2 on valve holder V2 to upper terminal on condenser C5, then to one end of resistance R1, (green body, black tip, yellow dot) leaving the other end of R1 to be connected to coil unit

All connections between Coil Unit, tuning condenser C1 and valve holder V2 to be made with 16 S.W.G. Copper Wire. All other connections in 20 S.W.G.

the Hi-Q Straight 4



YOU CAN BUILD THE Hi-Q STRAIGHT 4 WITH A SCREWDRIVER AND PLIERS

later. Also connect a short length of wire to lower terminal on condenser C5 for connection to coil unit later.

At this point it is advisable to connect up the remainder of the resistances.

Connect one end of resistance R3 (brown body, black tip, orange dot) to inner Output terminal; other end of R3 to right hand terminal on condenser C4, to one end of resistance R2 (red body, green tip, orange dot); other end of R2 through chassis (hole c) to condenser C9.

Connect one end of resistance R8 (green body, black tip, orange dot) to terminal 6 of valve holder V1; other end of R8 to terminal 7 on the same valve holder.

Connect one end of resistance R6 (red body, green tip, yellow dot) to terminal 2 on valve holder V3; other end of R6 to terminal 3 on same valve holder.

Connect one end of resistance R5 (red body, green tip, orange dot) to terminal 1 on valve holder V3; other end of R5 to terminal 5 on valve holder V4.

Connect one end of resistance R7 (red body,

green tip, yellow dot) to terminal 5 on valve-holder V3; other end of R7 to terminal 2 on valve holder V4.

Next mount the Lissen Hi-Q rotary coil unit and the potentiometer R4 on the front panel and bolt the front panel to chassis. The following wiring can now be completed:—

Connect one end of condenser C3 to terminal 1 on coil unit, leaving short length of wire for connection to tuning condenser C1 later.

Connect terminal 2 on coil unit to one end of resistance R1 and condenser C5; lower terminal of condenser C7 to terminal 3 of coil unit, leaving a short length of wire for connection to tuning condenser C1 later; terminal 4 of coil unit to terminal 4 of valve holder V2.

Connect left-hand terminal of condenser C8 to terminal 1 of Potentiometer R4; terminal 7 of valve holder V2 to terminal 3 of potentiometer R4, then through chassis (hole f) to right-hand terminal of condenser C6; other terminal of C6 to holding-down screw.

Connect a length of wire to the inner Output terminal and pass it through chassis (hole h) and to terminal 2 on potentiometer R4 later.

Now mount the Decimal dial and tuning condenser C1 according to the directions supplied in the carton.

Connect terminal 1 on coil unit to terminal 1 on C1; and terminal 3 on coil unit to terminal 2 on C1.

Mount switch S1 through chassis and panel, connecting underside terminal of S1 to holding-down screw.

Connect the screened anode leads. Anode lead on valve V2 to right-hand terminal on condenser C8. Anode lead on valve V1 to left-hand terminal on choke CH3.

BATTERY CONNECTIONS.

(Use braided, rubber-covered flex for these.) Connect L.T.— to terminal on switch S1.

H.T.— and G.B.+ to other terminal on switch S1.

G.B.— 4½ volts through chassis (hole k) to terminal 5 on valve holder V4.

H.T. + 120 volts to inner Output terminal.

L.T. + through chassis (hole e) to terminal 4 of valve holder V4.

THE GREAT 5-METRE MYSTERY

★ "THE STORY of the travel of wireless waves is, in the main, a story of the radiotelegraphist surprising himself and others by doing things which he was hardly expected to achieve The mathematician's world is still too simple to be true."

HALF the fun of listening on the ultra-short wave-bands is that you never know what to expect. Less is actually known about these waves than of their longer brothers, and all kinds of surprising results keep turning up. For instance, not so long ago it was accepted that on wavelengths below 9 metres, radio waves obeyed optical laws, and that roughly speaking, their range was limited to the distance the eye can see.

According to popular theory, at such wavelengths the waves were not reflected back to earth from the various layers of the inosphere, but either penetrated through to outer space or else were totally absorbed.

However, in the face of this generally accepted theory, amateurs and others have continued experimenting and have transmitted and received on these ultra-short wavelengths over greater and greater distances and produced some really extraordinary results.

American stations working on 7-8 metres have been received quite consistently in Great Britain, while the German television and sound transmitters on 6 metres, have been picked up for some time in many parts of the country, and the Eindhoven transmissions are being heard on wavelengths of approximately 8 metres in various parts of the Eastern counties.

And immediately after the news that an amateur on the Pacific coast of America working on 5 metres had been heard on the Atlantic coast and as far south as Panama, it was reported that a two-way communication had been established between a New York amateur and an English amateur.

These results have been too consistent to class as freaks, and it would appear that the old optical law theory about ultra-short waves is very incomplete. So—put your Hi-Q receiver on the air and hear what you can hear!

What to hear on 5 metres

Provided your receiver is situated, not absolutely in a hollow surrounded by large steel buildings, there are all sorts of interesting transmissions that you are sure to pick up on the ultra-short bands.

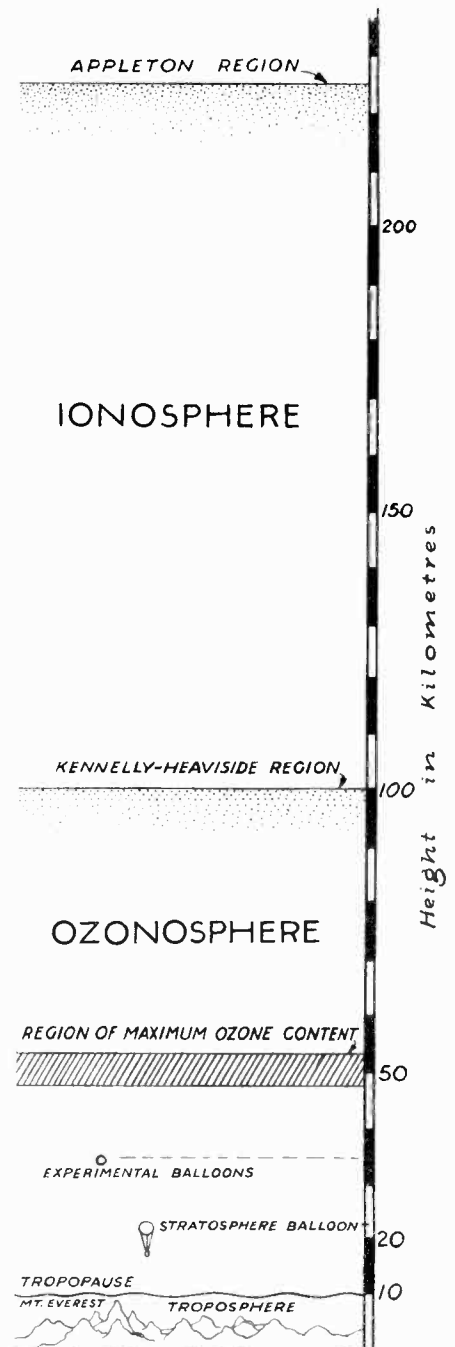
Some test transmissions sponsored by the Radio Society of Great Britain are being sent out at regular intervals. The following stations can be heard up to 20/30 miles, and in certain cases up to 200 miles according to conditions—and maybe they will be picked up even further away than that.

G2GB	Shortlands, Kent	Wed. & Sat.	11.3 a.m.—12 noon
G2HG	London, S.E.26	Sat.	2.30—5 p.m.
		Sun.	10 a.m.—1 p.m.
			2—6 p.m.
		Sat.	3—5 p.m.
G2VK	London, N.17	Sun.	11—11.30 a.m.
G5FN	Gillingham, Kent	Sat.	3—5 p.m.
G5LB	Beckenham, Kent	Mon., Tues., Thurs., Fri.	6.15—7 p.m.
		Mon., Tues. and Fri.	10.30—11 p.m.
		Sat.	4—7 p.m.
		Sun.	12 noon—1 p.m.
			2—5 p.m.
G5JU	Bristol	Sun.	11 a.m.—12 noon.

The Post Office Telephone Service provides another source of test transmission.

Listeners in the Port Patrick or Ballygomartin (Belfast) areas should be able to hear the P.O. ultra short-wave phone link. Similarly, listeners in Cardiff, Weston-super-Mare, Glastonbury and St. Helier. Scottish listeners can listen to the link between Lerwick and Skerries in Shetland Isles.

South coast listeners can con-



centrate on the station at Shaftesbury working Guernsey; and Lulworth Cove working Guernsey.

Any listener interested in ultra short-wave working who is fortunate enough to live close to a large town should make a point of getting in touch with the Secretary of the local Radio Society who would only be too glad to supply full details of amateur transmitters on 5 metres.

London listeners will, of course, be able to listen to B.B.C. television transmissions from the Alexandra Palace.

* Sir Frank E. Smith introducing a lecture before the Institution of Electrical Engineers

The Hi-Q Superhet

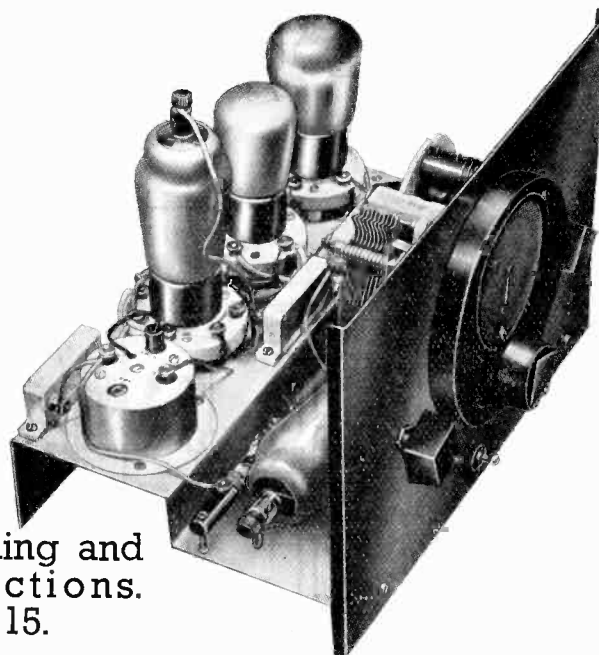
Operating Instructions

IN spite of the eagerness you will feel to put the Hi-Q Superhet on the air and start exploring the ultra-short and short wave-bands, it is wise to have a little patience and carefully check over the wiring.

Having really satisfied yourself that everything is O.K., connect up the battery leads to their respective batteries according to the directions on page 15. Insert the various valves in their proper valve holders and connect up the screened anode leads. Switch on, having turned the rotary tuning coil knob to range 4, and the volume control fully clockwise. Now carefully adjust H.T. 80—100 v, starting at 80 and moving up to 100 until a click is heard when you touch one of the fixed vanes of the tuning condenser with your finger. This click indicates that the receiver is in sensitive working condition.

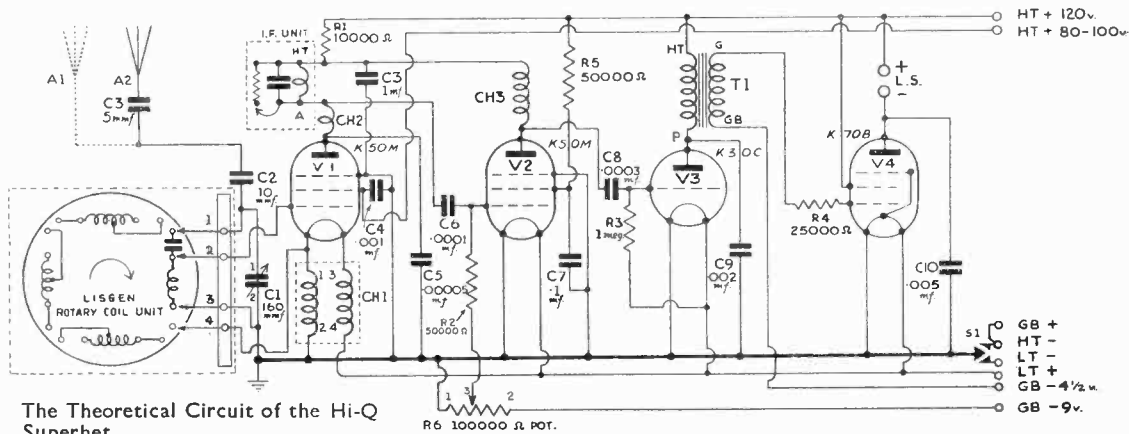
Now, plug the aerial lead into terminal A2 and rotate the tuning dial slowly until a station is heard. Repeat this procedure for all positions of the tuning coil knob, readjusting the H.T. tap in each case if necessary, and changing the aerial plug from A2 to A1 to obtain optimum results. From these adjustments you will be able to determine the best possible position for the H.T. tap and you are all set to go!

Complete Building and Wiring Instructions. See pages 14, 15.



Parts Required for the Hi-Q Superhet

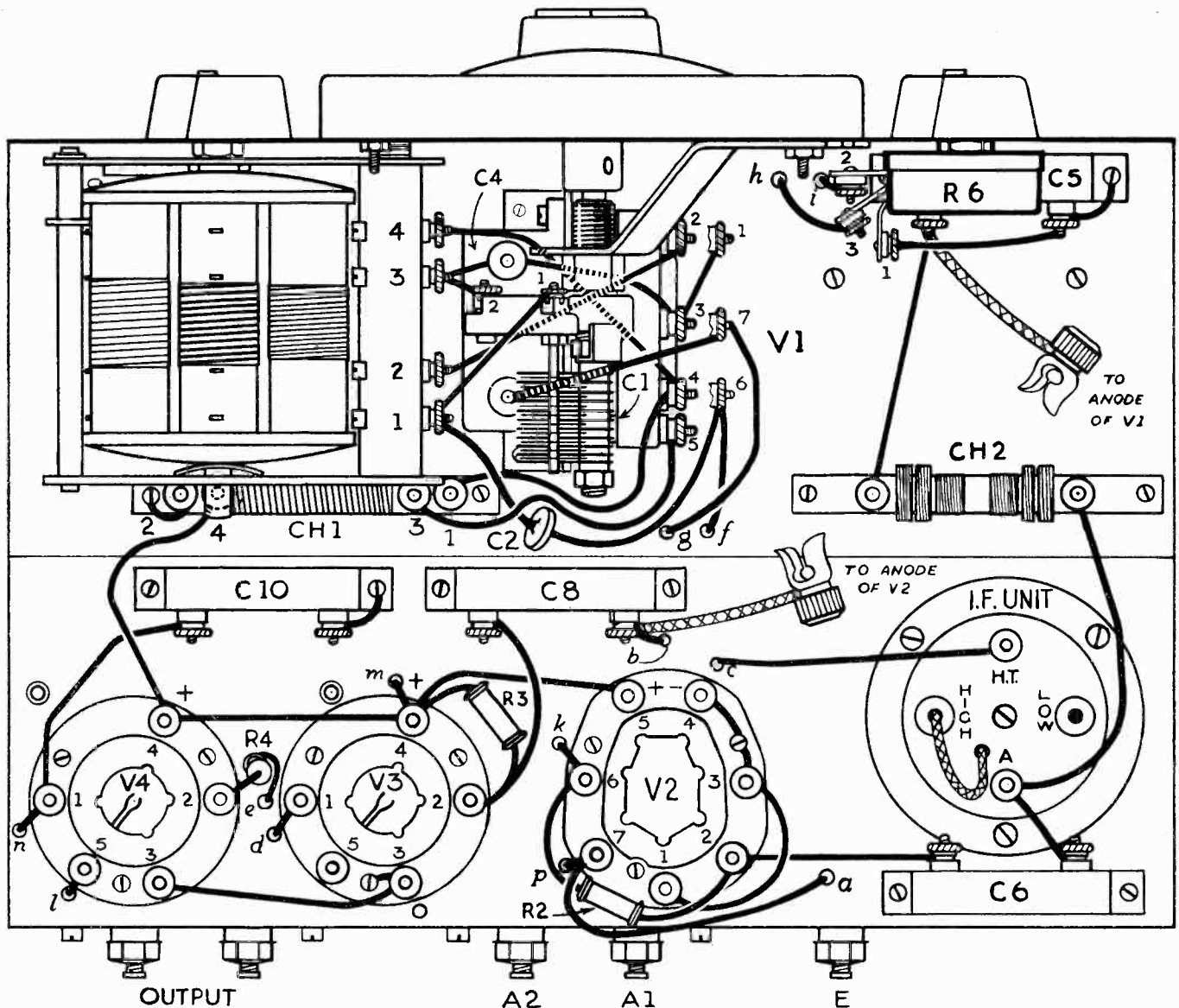
Lissen Hi-Q Rotary Coil Unit (Hi-Q-5649)	15/6	C10—.005 mfd. (Hi-Q-5637) ...	1/-
Hi-Q 75-175 metre Coil (Hi-Q-5647) (Optional)	2/6	C8—.0003 mfd. (Hi-Q-5640) ...	9d.
C1—Hi-Q Tuning Condenser, 160 mmfds. (Hi-Q-5652) ...	7/6	C9—.002 mfd. (Hi-Q-5636) ...	9d.
Lissen Hi-Q Decimal Dial and Slow Motion Drive with Condenser Holding Bracket (Hi-Q-5655) ...	12/6	C6—.0001 mfd. (Hi-Q-5638) ...	9d.
Lissen Hi-Q Chassis and Panel, including Sub-Panel (Hi-Q-5660) ...	7/6	C5—.00005 mfd. (Hi-Q-5641) ...	9d.
CH1—Lissen Hi-Q H.F. Filament Choke (Hi-Q-5645)	2/6	Fixed Condensers (Lissen Hi-Q Mansbridge Type):—	
CH2—Lissen Hi-Q Ultra Short and Short Wave H.F. Choke (Hi-Q-5656)	2/-	C3—1 mfd. (Hi-Q-5642)	2/6
CH3—Standard H.F. Choke (Lissen Hi-Q-5657)	2/6	C7—1 mfd. (Hi-Q-5659)	1/9
T1—L.F. Transformer, ratio 3:1 (Lissen Hi-Q-5643)	6/-	Fixed Condensers Lemco Sprayed Mica Type):— C11—5 mmfd.; C2—10 mmfd.	each 9d.
2 5-pin Valve Holders (Lissen Hi-Q-5650)	1/9	Resistances (Metallised, 1/4 watt rating (Erie):—	
2 7-pin Valve Holders (Lissen Hi-Q-5651)	2/3	R2, R5—50,000 ohms.	each 1/-
Lissen Hi-Q I.F. Unit (Hi-Q-5654)	7/-	R4—25,000 ohms.	each 1/-
S1 3 point Switch (Bulgin)	1/6	R3—1 megohm.	each 1/-
R6—100,000 ohms. wire-wound Potentiometer (British N.S.F.) ...	5/6	R1—10,000 ohms.	each 1/-
Fixed Condensers (Lissen Hi-Q Mica Type):—		5 Terminal Sockets (Lissen Hi-Q-5648)	each 6d.
C4—.001 mfd. (Hi-Q-5635)	9d.	2 Ever Ready Valves K.50 M. ...	each 11/-
		1 Ever Ready Valve K.30 C. ...	4/9
		1 Ever Ready Valve K.70 B. ...	11/-
		A small quantity of copper wire, 20 s.w.g. and 16 s.w.g.; a yard or two of rubber covered flex; several lengths of insulated sleeving; 6 B.A. nuts, bolts, etc.; two screened anode connectors and terminal clips.	



The Theoretical Circuit of the Hi-Q Superhet

R6 100000 Ω POT.

Building and Wiring



FOLLOW THESE WIRING INSTRUCTIONS CAREFULLY—

Before you bolt the front panel and chassis together, mount the following components on chassis:—Valve Holders V2, V3, V4; H.F. Chokes CH1, CH2, CH3; Fixed Condensers C3, C5, C6, C7, C8, C9, C10; I.F. Unit and Transformer T1.

Wire in this order:—

Connect terminal 1 on valve holder V2 to terminal 4 on valve holder V3, then to terminal 4 on valve holder V4 and to terminal 4 on choke CH1; terminal 2 on CH1 to holding-down screw of CH1.

Connect terminal 5 on valve holder V2 to terminal 4 on valve holder V3, then to terminal 4 on valve holder V4 and to terminal 4 on choke CH1; terminal 2 on CH1 to holding-down screw of CH1.

Connect holding down screw on valve holder V3 to terminal 3 on valve holder V3 then to terminal 3 on valve holder V4.

Connect terminal 2 on valve holder V2 to nearest terminal on condenser C6; other terminal on condenser C6 to terminal A on I.F. Unit, then to right hand terminal on short wave

choke CH2; other terminal on choke CH2 to left hand terminal on condenser C5.

Connect left hand terminal on condenser C8 to terminal 2 on valve holder V3 and connect screened anode lead of V2 to right hand terminal on C8.

Connect H.T. terminal on I.F. Unit through chassis (hole c) to right hand terminal on condenser C3, then to bottom terminal on H.F. choke CH3; other terminal on CH3 through chassis (hole b) to right hand terminal on condenser C8.

Connect left hand terminal on condenser C10 to terminal 1 on valve holder V4, then through chassis (hole n) to outer Output terminal; right hand fixing-down screw on condenser C10 to right hand terminal on condenser C10.

Connect terminal 1 on valve holder V3 through chassis (hole d) to terminal A on transformer T1 then to lower terminal on condenser C9; other terminal on condenser C9 to holding-down screw.

Connect H.T. terminal on T1 to inner Output terminal through chassis (hole l) to terminal 5 on valve holder V4.

Now mount condenser C4 and valve holder V1 to the sub-panel and mount the sub-panel to the chassis.

Connect terminal 5 on V1 to terminal 3 on CH1 and lower terminal on C4 to terminal 7 on V1.

Next connect one side of condenser C2 to terminal 6 on V1 and then through chassis (hole f) to aerial terminal A1, then to one side of condenser C3; other side of C3 to aerial terminal A2; (leave the other side of C2 unconnected until the coil is mounted).

Connect terminal 1 on CH1 to terminal 4 on V1, leaving a few inches of wire for connection to coil unit later.

Connect terminal 1 on V1 to terminal 3 on V1, then to upper terminal on condenser C4, leaving several inches of wire for connection to coil unit later.

Connect a few inches of wire to terminal 2

All connections between Coil Unit, tuning condenser C1 and valve holder V1 to be made with 16 S.W.G. Copper Wire. All other connections in 20 S.W.G.



IN the States, bills have been posted asking the general public to phone up the nearest police station if they should witness a crime. In the case of such a phone message the police operator puts out a call to the car which happens to be in the vicinity—and before the shopbreakers, or whoever they are, have been able to do very much, the police are on the doorstep.

"Calling all Cars!"

"CALLING all cars" is not merely an expression coined and boosted by the movies, but is a phrase very well-known by all American listeners.

Police Radio in the U.S.A. has reached a very high stage of efficiency and is put to greater use than can ever be considered possible in this country owing to the great distances covered by car.

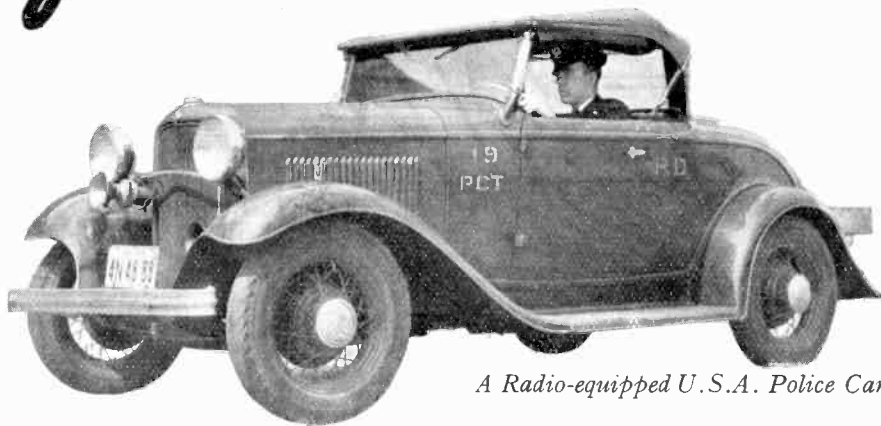
Without exception, all large cities are equipped with a complete police broadcasting station using high power of up to 10 Kw. These stations are ultra-modern and include such gadgets as direction-finders, and ultra high-frequency receivers and transmitters.

Generally speaking, American police stations operate on wave-lengths of 120 to 160 metres and listeners have become so used to tuning in these stations that all American all-wave radios are equipped with a police band.

Police cars are equipped with ultra short-wave transmitters which have a range of between 5 and 10 miles. These are low-power outfits of 10 to 20 watts, and no larger than the normal car receiving set.

No external aerials can be seen on an American police car. Under each running board is a large insulated copper plate which acts as an aerial, for transmission, while the receiving aerial is concealed behind the studding in the upholstery.

Those listeners who are able to receive 160 metre stations can hear the American police "calling all cars" quite reliably. During the



A Radio-equipped U.S.A. Police Car.

winter months police stations are heard at very good strength, particularly late at night. During last winter quite an interesting field was explored by listening in between 120 and 160 metres between 5 and 8 in the morning. Generally speaking, at least half-a-dozen of the larger police stations were receivable. Occasionally there is some excitement.

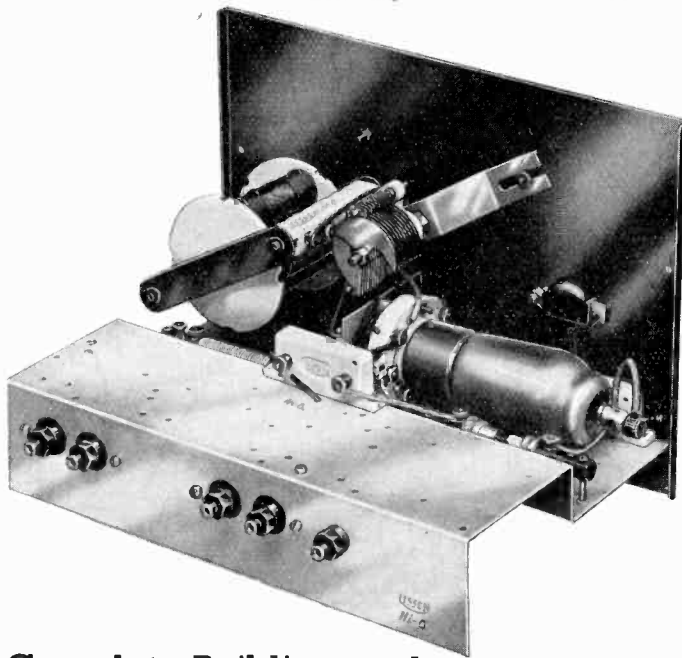
You can hear some of these American police broadcasts on your Hi-Q receiver fitted with the 75-175 metre coil. And if you are very lucky you may even hear a police car on the 5 metre band.

Amongst the more important British towns that actually use police radio are Liverpool, Nottingham, Manchester, Glasgow and Brighton. Brighton are already famous for their radio equipped police who have midget receivers capable of listening to the main station up to a distance of 3 to 4 miles.

Even the simplest of sets will pick up say Nottingham on 162 metres, which puts out a strong signal to all parts of the country. Two days ago I heard a police operator putting out a general call saying that a Morris-Oxford car, colour so-and-so, number, and all the details, had been stolen from some street or other. This announcement went on for about 10 minutes, and before the completion of the broadcast he mentioned that the car had been located.

London police use mainly morse code, so that the transmissions cannot be intercepted. But, make a point of listening to the provincial towns who are beginning to realise the value of the man in the street in detecting and preventing crime. Ultimately, we in this country may take an interest in police radio just as they have in America and listen to the almost continuous broadcasts from the local police radio station!

The Hi-Q Converter



5 to 2,000 metres on your present receiver!

With the Hi-Q Converter added to your present receiver, you can tune from 5—2000 metres without having to touch a single wire! The Hi-Q Converter can be added to ANY existing receiver—battery, mains or universal.

Operating Instructions.

Complete Building and Wiring Instructions—see pages 18, 19.

Parts required for the Hi-Q Converter.

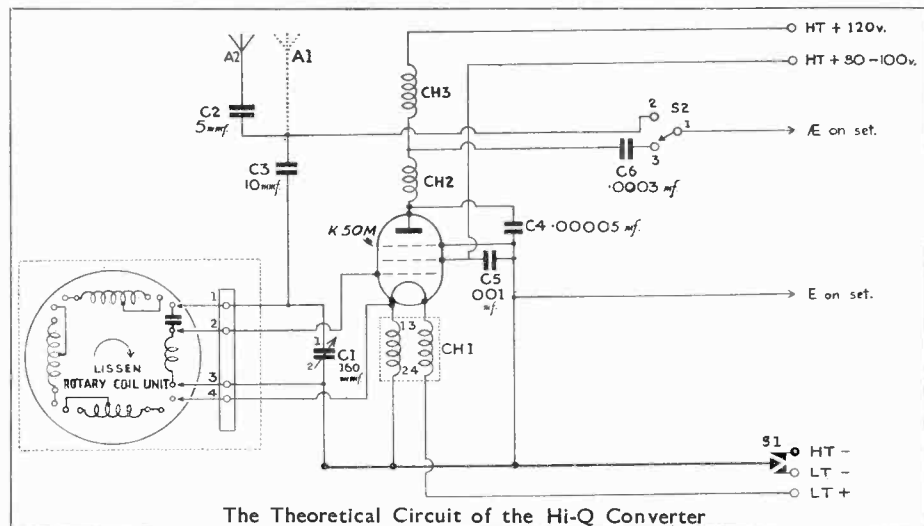
Lissen Hi-Q Rotary Coil Unit (Hi-Q 5649) ...	15/6
Hi-Q 75-175 metre Coil (Hi-Q-5647) (Optional) ...	2/6
C1—Lissen Hi-Q Tuning Condenser, 160 mmfds. (Hi-Q-5652) ...	7/6
Lissen Hi-Q Decimal Dial and Slow Motion Drive with Condenser Holding Bracket (Hi-Q-5655) ...	12/6
Lissen Hi-Q Chassis and Panel, including Sub-Panel (Hi-Q-5660) ...	7/6
CH1—Lissen Hi-Q H.F. Filament Choke (Hi-Q-5645) ...	2/6
CH2—Lissen Hi-Q Ultra Short and Short Wave H.F. Choke (Hi-Q-5656) ...	2/-
CH3—Standard H.F. Choke (Lissen Hi-Q-5657) ...	2/6
1 7-pin Valve Holder (Lissen Hi-Q-5651) ...	2/3
S1—3-point Switch (Bulgin) ...	1/6
S2—D.P.D.T. Switch (Claude Lyons)	3/6
Fixed Condensers (Lissen Hi-Q Mica Type):—	
C5—.001 mfd. (Hi-Q-5635) ...	9d.
C6—.0003 mfd. (Hi-Q-5640) ...	9d.
C4—.00005 mfd. (Hi-Q-5641) ...	9d.
Fixed Condensers (Lissen Hi-Q Mansbridge Type):—	
C4, C6—1 mfd. (Hi-Q-5642) each	9d.
Fixed Condensers (Lemco Sprayed Mica Type):— C2—5 mmfd.; C3—10 mmfd. ...	each 9d.
5 Terminal Sockets (Lissen Hi-Q-5648) each	6d.
1 Ever Ready Valve K.50.M. ...	11/-
A small quantity of copper wire, 20 s.w.g. and 16 s.w.g.; a yard or two of rubber covered flex; several lengths of insulated sleeving; 6 B.A. nuts, bolts, etc.; one screened Anode Connector and Terminal Clip.	

THE same remarks that apply to checking over the wiring of the Superhet and the Straight 4 apply to the converter, even though it is much simpler to build. Before connecting up the batteries and inserting the valves—make sure!

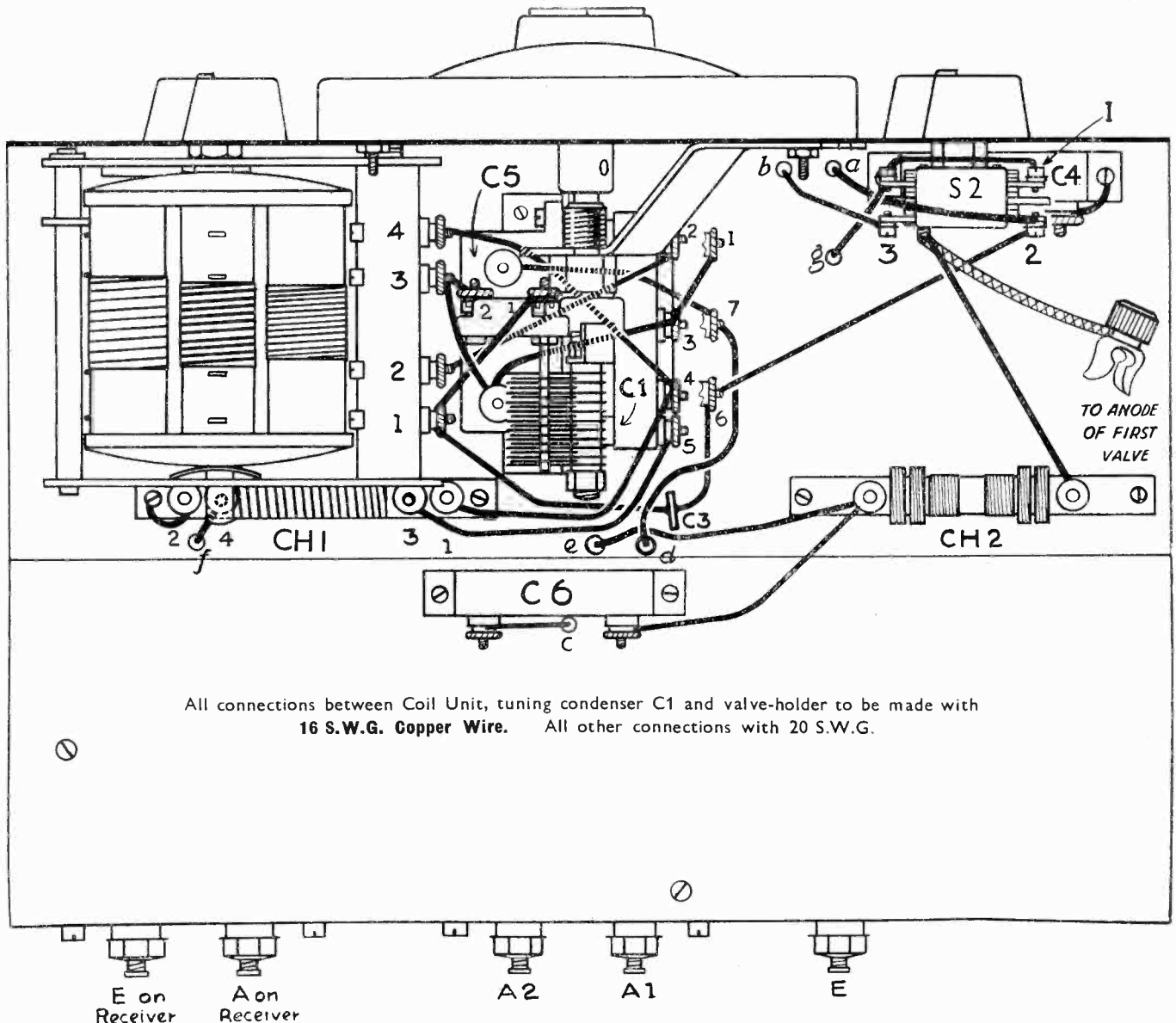
Detach your aerial and earth leads from your existing receiver and plug them into the A and E terminals on the converter. Now take a lead from the terminal marked A on Receiver to the aerial terminal of your set and a lead from E on Receiver to the earth terminal.

When switch S2 (left hand knob on dial) is turned to the left the converter is cut out so that you can receive medium and long wave stations in the ordinary way on your broadcast receiver.

Switch on your present broadcast receiver and tune to a point on the long wave band where no stations are received. You will find this position around 1900 metres. Switch S2 to right hand position and switch on the converter with switch S1 and follow the adjusting instructions as for the Hi-Q Superhet on page 13.



Building and Wiring



All connections between Coil Unit, tuning condenser C1 and valve-holder to be made with
16 S.W.G. Copper Wire. All other connections with 20 S.W.G.

YOU CAN BUILD THIS CONVERTER IN LESS THAN AN HOUR !

Before you bolt the front panel and chassis together, mount the following components on the chassis and complete the wiring as below: H.F. Chokes CH1, CH2, CH3; Fixed Condensers C4 and C6 (Condenser C5 and valve holder should also be mounted on sub-panel and this in turn bolted to chassis).

Wire in this order:—

Connect terminal 1 on choke CH1 to terminal 4 on valve holder, leaving a short length of wire for connection to coil unit later; terminal 3 on choke CH1 to terminal 5 on valve holder; terminal 2 of choke CH1 to holding-down screw.

Connect terminal 1 on valve holder to terminal 3 on valve holder, then to lower terminal on condenser C6 leaving a short length of wire for connection to coil unit later.

Connect upper terminal on condenser C5 to terminal 7 on valve holder.

Connect right hand terminal on condenser C6 to left-hand terminal on H.F. choke CH2 through chassis (hole e) to upper terminal on Choke CH3; left-hand terminal on condenser C6 through chassis (hole c), then back through chassis (hole b), leaving a short length of wire for connection to switch S1 later.

Connect one side of condenser C2 to aerial terminal A2; other side of C2 to aerial terminal A1, then through chassis (hole a), leaving a short length of wire for connection to switch S1 later.

Connect right-hand terminal on condenser C4 to holding-down screw; left-hand terminal on C4 to right-hand terminal on choke CH2.

Connect one end of condenser C3 to terminal 6 on valve holder, leaving a short length of wire for connection to switch S1 later; other side of C3 to be connected to coil unit later.

Connect terminal "E on Receiver" to

terminal E; connect a length of wire from terminal "A on Receiver" through chassis (hole g) leaving a few inches for connection to switch S1 later.

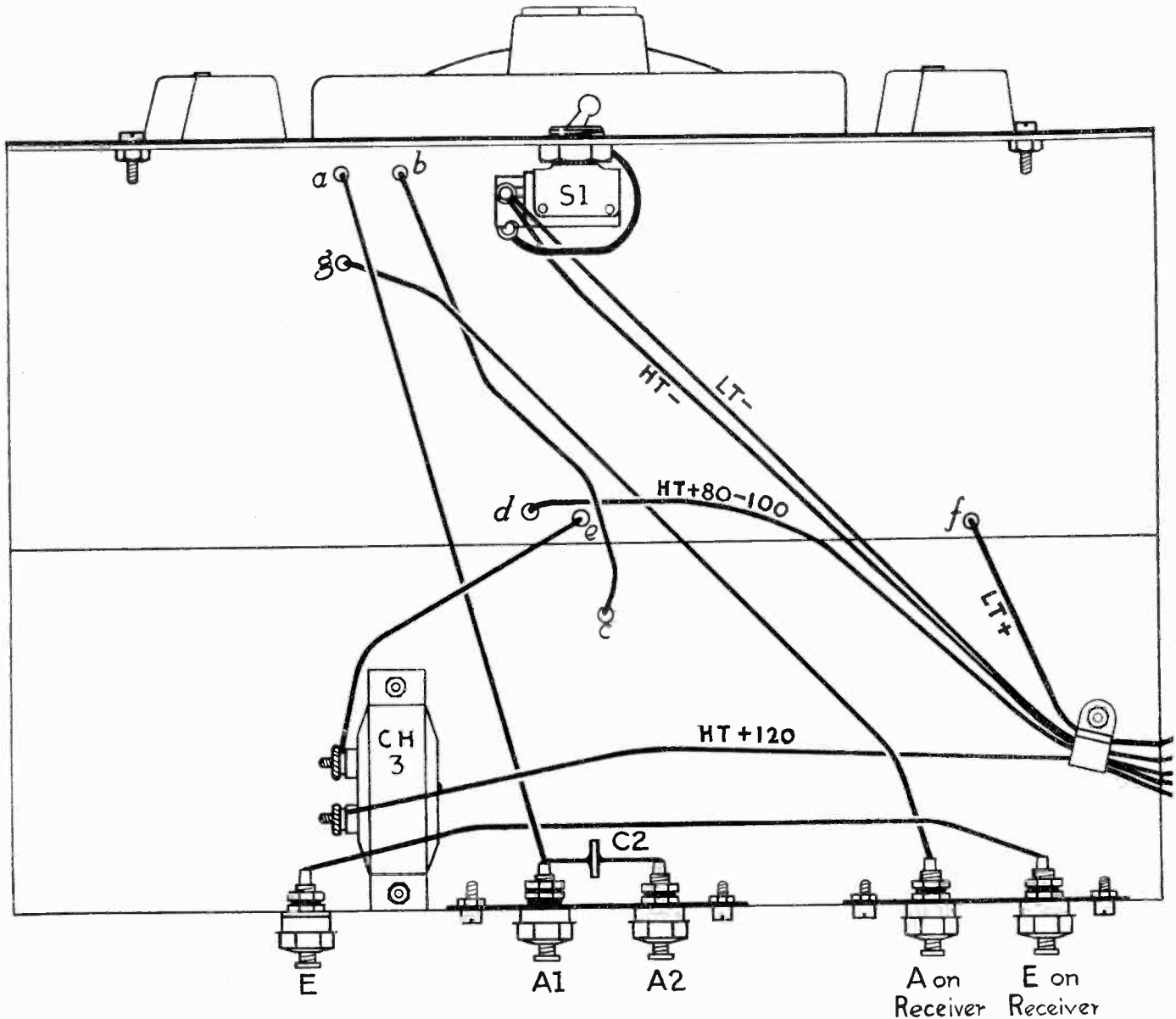
Now complete the necessary wiring to switch S1. You will find it easier to do this before S1 is actually mounted on the front panel.

Connect the wire through hole b (from condenser C) to terminal 3 on switch S1; the wire through hole a (from aerial terminal A1) to terminal 2 on switch S1; the wire through hole g (from terminal A on receiver) to the two inner terminals of switch S1.

Now mount the Lissen Hi-Q rotary coil unit to front panel, bolt panel to chassis and complete the wiring to coil unit.

Connect one side of condenser C3 to terminal 1 on coil unit, leaving short length of wire for connection to tuning condenser C1 later; terminal 2 on coil unit to terminal 2 on valve holder.

the Hi-Q Converter



THE SAME COMPONENTS CAN BE USED TO BUILD ANY Hi-Q RECEIVER

Connect lower terminal on condenser C5 to terminal 3 on coil unit leaving short length of wire for connection to tuning condenser later.

Now mount the Decimal dial and the tuning condenser C1, connecting terminal 1 on coil unit to terminal 1 on C1 and terminal 3 on coil unit to terminal 3 on C1.

Mount the switch S2 through the chassis and panel, connecting 1 terminal to holding-down screw.

BATTERY CONNECTIONS.

(Use braided, rubber-covered wire for these) Connect LT- to one terminal on switch S2; HT- to the other terminal on switch S2. LT+ through panel (hole f) to terminal 4 on choke CH1.

HT+80/100 volts through panel (hole d) to terminal 7 on valve holder.

HT+ 120 volts to lower terminal on choke CH3.

Calibration Chart for the Hi-Q Receivers.

Note: No two receivers will show exactly the same readings, so that the readings below, although serving as a guide, must be taken as approximate.

TUNING COIL RANGE	DECIMAL DIAL READING	WAVE-LENGTHS (in metres)	TUNING COIL RANGE	DECIMAL DIAL READING	WAVE-LENGTHS (in metres)	TUNING COIL RANGE	DECIMAL DIAL READING	WAVE-LENGTHS (in metres)
RANGE 1 (4.8-7 metres)	.3	5	RANGE 3 (16.6-42 metres)	.6	17	RANGE 4 (37-91 metres)	1.5	40
	3.2	6		.9	18		2.3	45
	8.5	7		1.3	20.5		3	50
RANGE 2 (6.6-17 metres)	.5	7		2.5	25		3.9	55
	2.5	10		2.9	26		4.9	60
	4.7	13.9		4.2	31		5.7	65
	5.5	14		4.7	32		6.4	70
	8.3	16		5.3	34		7.4	75
				5.8	35		8.5	80
					9.8		90	

Short Wave

Zeppelin Hindenburg starts regular Trans-Atlantic Service



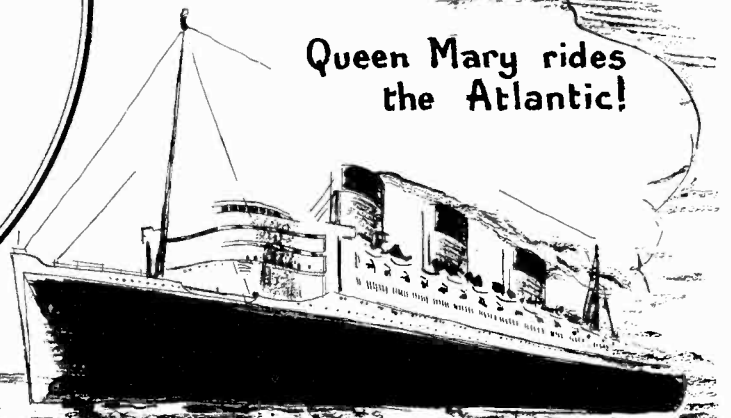
Although Zeppelin Hindenburg does not cross Great Britain, its transmissions can be received at great strength. It transmits on many wavelengths, according to location.

World's finest Athletes in Olympian battle at Berlin.



A specially built Short Wave station at Zeesen (DJD—19.74 metres) told the world the results of the Olympic Games. Many of the events were also televised.

Queen Mary rides the Atlantic!

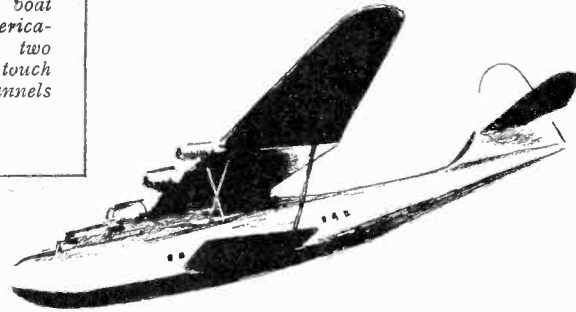


Thousands of Short Wave listeners heard the Queen Mary on her maiden voyage. She has the most powerful radio telephone equipment afloat. Her call sign GBT goes round the world.

News Reel

American Stratosphere balloon soars up 14 miles!

Giant American flying boat maintains regular America-China service with only two stops, and keeps in constant touch with land on the aircraft channels of 36 and 74 metres.



China Clipper flies USA mail across Pacific

Rob Baker's commentary on last Schmeling-Louis fight was a fine example of "putting across" a fight—without actually televising it. All American fights are broadcast on the short waves.

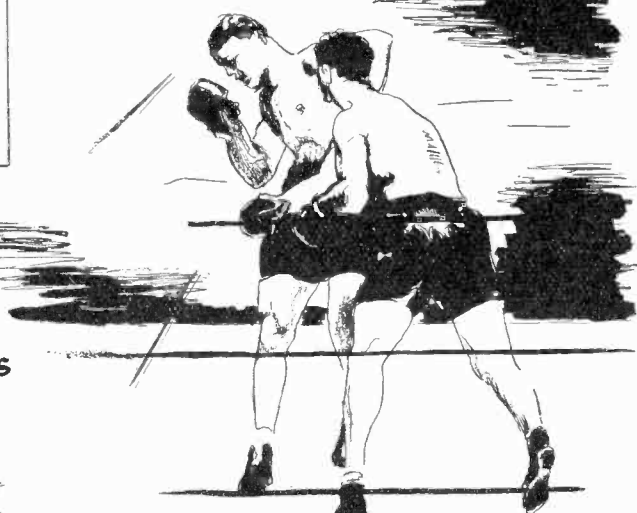
A commentary broadcast from the actual balloon in flight was picked up, re-broadcast all over America—and was heard by many short wave listeners in all parts of this country.



Floods devastate American States



Once again amateur transmitters came to the rescue during recent Pittsburg floods. 5-metre transmitters were hooked up and maintained excellent telephonic service between isolated towns.



Schmeling K.O's Louis in historic fight!

THE Artificial Aerial licence is the first step towards owning and operating a fully licenced transmitting station. If you go about it in the right way, this A.A. licence is not difficult to obtain.



So you're

MOST of the enthusiasts who take up radio as a hobby go through many stages within a short period of time. First comes the broadcast receiver and shortly afterwards the short-wave receiver.

But there are several thousands of short-wave listeners at the present time who feel that they want to go further than merely listening to other people transmitting, and wish for an official status so as to be able to transmit themselves.

Fortunately amateurs in Great Britain have a distinct advantage over amateurs in other countries. The Post Office, who have a monopoly on the issuing of transmitting licences, realise that there are many who would like to experiment with oscillators, microphones, and amplifiers. They also realise that it would be unwise to grant a full radiating licence to an amateur not conversant with the design, construction and operation of a transmitter. (Imagine the chaos that would be caused in the 40 metre band by somebody using a powerful transmitter without knowledge of how to operate and adjust it!) So as to kill two birds with one stone, the Post Office do issue an artificial aerial licence, which is the intermediate stage between the short-wave listener and the transmitting amateur.

It is to the advantage of all listeners to obtain one of these licences, for a call sign is issued consisting of a number and three

letters, so that a QSL card can be printed in a similar way to the fully licensed amateur. This permit enables the constructor to build a complete 10-Watt transmitter with modulator and speech amplifier, and to operate on the 20, 40 or 160 metre bands. The only restriction is that no external aerial should be connected to it and all tests have to be on an enclosed aerial.

THE FIRST STEP

The first step is to write to the Office of the Engineer in Chief, Radio Section, General Post Office, Armour House, Aldersgate Street, and ask for an application form for an A.A. licence.

In the course of time this form will arrive and must be very carefully filled in. Full name and address, age, occupation, two references as to nationality and integrity, are but a few of the requirements; but these are all perfectly straightforward.

A clear reference must be made on the form that an artificial aerial licence is required, otherwise the Post Office will ask you to sit for a morse code test. No such qualification is needed for an artificial aerial. A brief description of the

proposed transmitter and receiver to be used must be furnished, but the actual circuit should be written on an accompanying sheet of paper and pinned to the application form.

The important item in this form is the one where you are asked to describe the purpose and nature of the experiments you intend to carry out. This should be very fully covered and the applicant should say just for what reason the transmitter is required. Don't let this question scare you. What the Post Office actually want to know is whether you are really interested in radio experimenting and do not just want a transmitter for a frivolous purpose. Typical reasons are the design and construction of transmitters; checking the performance of frequency doublers; or modulation methods.

When this form has been filled in it should be returned to the Post Office with a fee of 10s. If the authorities feel that you are a person of some substance, and really do want the transmitter for experimental purposes, and will not turn out to be a foreign spy in time of war, then a call sign will be issued.

Going to Build your own Broadcasting Station!

When the licence is received and not before, construction of the transmitter can begin. The owner of an A.A. licence or three letter

Microphone terminals on the transmitter and listening to the results on your Hi-Q receiver. Such adjustments as bias and H.T. voltages

USING THE Hi-Q DUMMY AERIAL

call, can build a complete transmitting station just as if a full radiating licence had been issued. There are no restrictions on the design, other than the fact that the maximum wattage should be 10 or less.

After the station has been built and is all ready for action, the Hi-Q dummy aerial has to be constructed. This is easy to build from the instructions on page 30.

It is then placed beside the transmitter, the A and B terminals being connected to the corresponding terminals on the transmitter. The transmitter is then adjusted according to the directions on page 25.

The experiments that can be carried out with these transmitters and artificial aerials have no limit. The efficiency of the transmitter, i.e., the power in the aerial measured against the power taken from the H.T. supply is of primary importance. When your transmitter is put on the air, this ratio will decide whether you will contact DX regularly or just when conditions are favourable.

Modulation experiments should also be carried out. A very good way of doing this is to hook up the pick-up of your radiogram to the

can be carried out to determine the best values of these under your working conditions. In the same way experiments can be carried over the microphone—only, of course, getting some one else to speak into it or by placing it in front of your broadcast receiver.

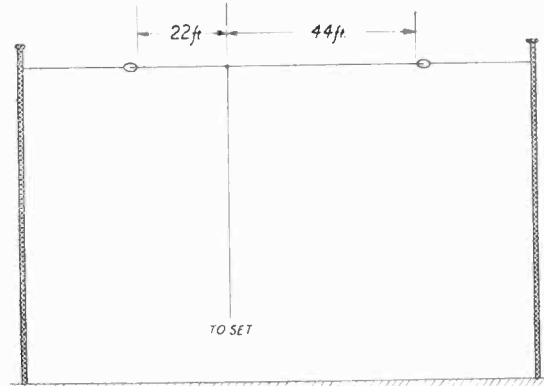


Fig. 1

NOW FOR THE REAL THING!

Every conceivable type of experiment can be made in this way and actual figures obtained on the efficiency of the transmitter. All these tests will probably take from six to eight months, and

during this time the morse code can be learnt, until a speed of 12 words a minute at both sending and receiving is obtained. (An article on learning the Morse Code will be found in "Short Wave No. 1")

Then is the time to think of obtaining a radiating licence. After the artificial licence has been in operation for a few months, the Post Office will be more disposed to grant the full licence providing the morse test can be passed. This morse test can be taken at any Post Office by appointment and costs 5s. When a certificate of proficiency has been obtained, another form is supplied from the Post Office which has to be filled in all over again, and in due course the transmitter can be attached to the aerial and operated in the normal way.

Once you have obtained a full radiating licence, a very simple and efficient form of transmitting aerial for these transmitters is the Hertz aerial illustrated in figure 1. It is worth while going to the little trouble involved in erecting this aerial as it is about four times as efficient for transmitting as the ordinary "L" type aerial.

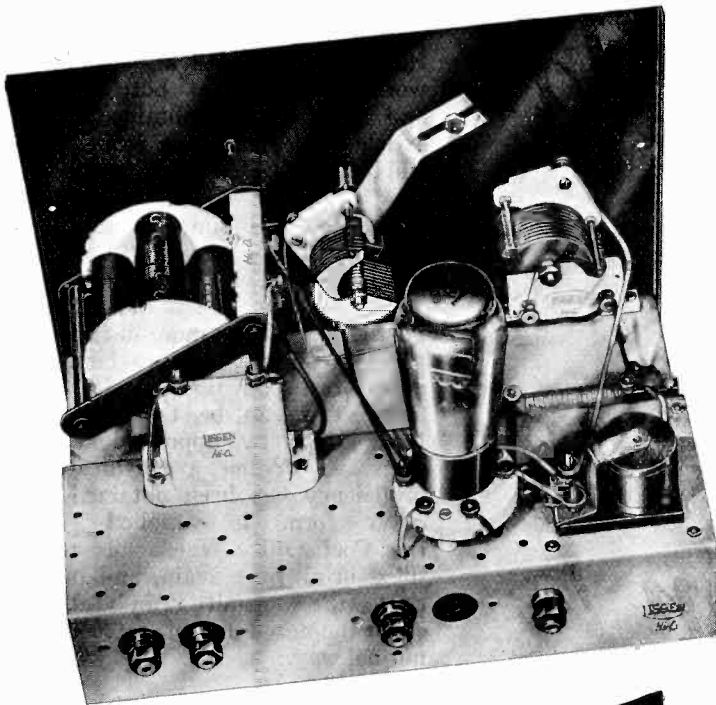
GET YOUR A.A. LICENCE FIRST

The artificial aerial licence should be more widely used for it does give the short-wave listener an insight into the design and construction of transmitting apparatus. It is comparatively easy to obtain and the owner of such a licence will find it much easier to obtain the full licence later on. It can be taken for granted that it is almost impossible to obtain a full radiating

licence straight away, even though the morse code can be tackled in flying style.

For details of the
Hi-Q TRANSMITTERS

See Pages 24 & 25



THE Tri-Tet circuit has been adopted for the Hi-Q transmitters because it fulfils all the conditions of simplicity and efficiency. Much of the excellent design embodied in the Hi-Q receivers has been incorporated.

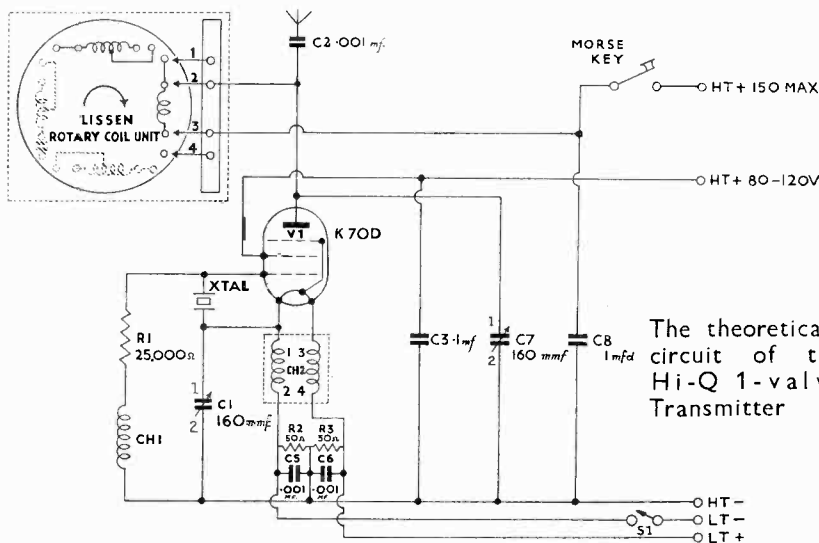
The Hi-Q 1-valve Transmitter

Complete Building and Wiring Instructions. See pages 26, 27.

THERE is a widespread and mistaken idea that a small radio transmitter is an elaborate and expensive affair to build. Actually, these Hi-Q transmitters are easier to build than the Hi-Q receivers, and no more expensive. In spite of their extreme simplicity and low power they are not "toys." They are highly efficient instruments, and remember that amateurs with

transmitters as low-powered as these have worked Australia.

Like the Hi-Q receivers, these transmitters have been designed around the rotary coil unit. Only 2 coils are used on the unit, however, for to comply with P.M.G. regulations the Hi-Q transmitters only use the fundamental frequency of the crystal, which is 40 metres, and the second harmonic, 20 metres.



Parts Required for the Morse Transmitter

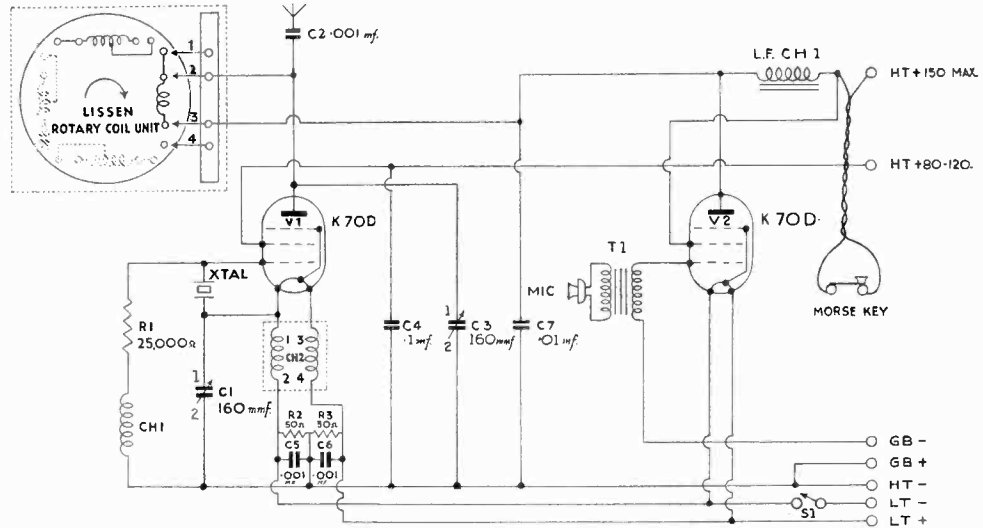
Lissen Hi-Q Rotary Coil Unit (Hi-Q-5649) ...	15/6
C1, C3—Hi-Q Tuning Condenser, 160 mmfds. (Hi-Q-5652) ... each	7/6
Lissen Hi-Q Decimal Dial and slow Motion Drive with Condenser Holding Bracket (Hi-Q-5655) ...	12/6
Lissen Hi-Q Chassis and Panel (Hi-Q-5660) ...	7/6
CH2—Lissen Hi-Q H.F. Filament Choke (Hi-Q-5645) ...	2/6
CH1—Lissen Hi-Q Ultra Short and Short Wave H.F. Choke (Hi-Q-5656) ...	2/-
L.F. CH1—L.F. Choke, 50 Henries (Lissen Hi-Q-5644) ...	7/6
1 5-pin Valve Holder (Lissen Hi-Q-5650) ...	1/9
40 metre Crystal (Quartz Crystal Co., Brookes Measuring Tools) ...	15/-
Crystal Holder (Quartz Crystal Co., Brookes Measuring Tools) ... from	4/6
S1—3 point Switch (Bulgin) ...	1/6
Fixed Condensers (Lissen Hi-Q Mica Type):—	
C5, C6, C2—.001 mfd. (Hi-Q-5635) each	9d.
Fixed Condensers (Lissen Hi-Q Mansbridge Type):—	
C8—1 mfd. (Hi-Q-5642) ...	2/6
C3—1 mfd. (Hi-Q-5650) ...	1/9
Resistances (Metallised, 1/4 watt rating) (Erie):—	
R2, R3—50 ohms. ... each	1/-
R1—25,000 ohms. ...	1/-
1 Ever Ready Valve K.70 D.	11/-
4 Terminal Sockets (Lissen Hi-Q-5648) each	6d.
A small quantity of copper wire, 20 s.w.g.; a yard or two of rubber covered flex; several lengths of insulated sleeving; 6 B.A. nuts, bolts, etc.	
Accessories	
Morse Key (Quartz Crystal Co., etc.)	
0—50 millimetre, moving-iron type. (Shaftesbury Supplies).	

Extra Parts required for the Hi-Q Telephony Transmitter

The same parts used for the One Valve Transmitter are used for the Telephony Transmitter with the addition of the following:—
 C7—.01mfd. Mica Fixed condenser (Lissen Hi-Q 5658)... 1/-
 1 Five-Pin Valve-holder (Lissen Hi-Q—5650) ... 1/9
 L.F.Ch.1.—L.F. Choke, 50 Henries (Lissen Hi-Q—5644) 7/6
 1 Ever Ready Valve, K.70.D 11/-

Extra Accessories Required

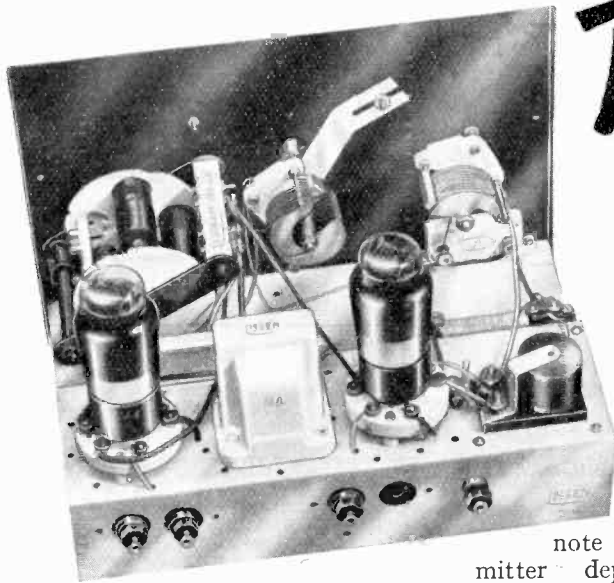
Microphone (Shaftesbury Supplies, Claude Lyons, etc.).
 T1—Microphone Transformer (Shaftesbury Supplies, Claude Lyons, etc.).
The 1mfd Mainsbridge condenser used in the one-valve Transmitter is not required for the Telephony Transmitter.



The Circuit of the Telephony Transmitter. The same oscillator arrangement as the one valve transmitter with a second valve added as an modulator.

and Telephony Transmitter

Complete Building and Wiring Instruction—see pages 28, 29



THE CRYSTAL

The Post Master General has laid down certain regulations about transmitters. The most important of these is that the transmitter must not wander out of the wave bands allotted to amateur use. In order to make sure that he does not do this, the P.M.G. insists that either a crystal-controlled transmitter is used or a crystal wave-meter is

The Hi-Q Telephony Transmitter—easier to build than the ordinary receiver!

employed for checking. As a crystal wave-meter is an expensive piece of apparatus and also because the steadiness of the

note radiated by the transmitter depends on frequency stability, a crystal-controlled transmitter is most desirable.

The crystal is clamped with light spring pressure between metal electrodes, and the surface of the crystal and the electrodes must be free from grease or dirt. The crystal must never be handled, but if this does occur (or if it does not oscillate), it should be given a bath of "Thawpit." Petrol should not be used as this always leaves a film of oil.

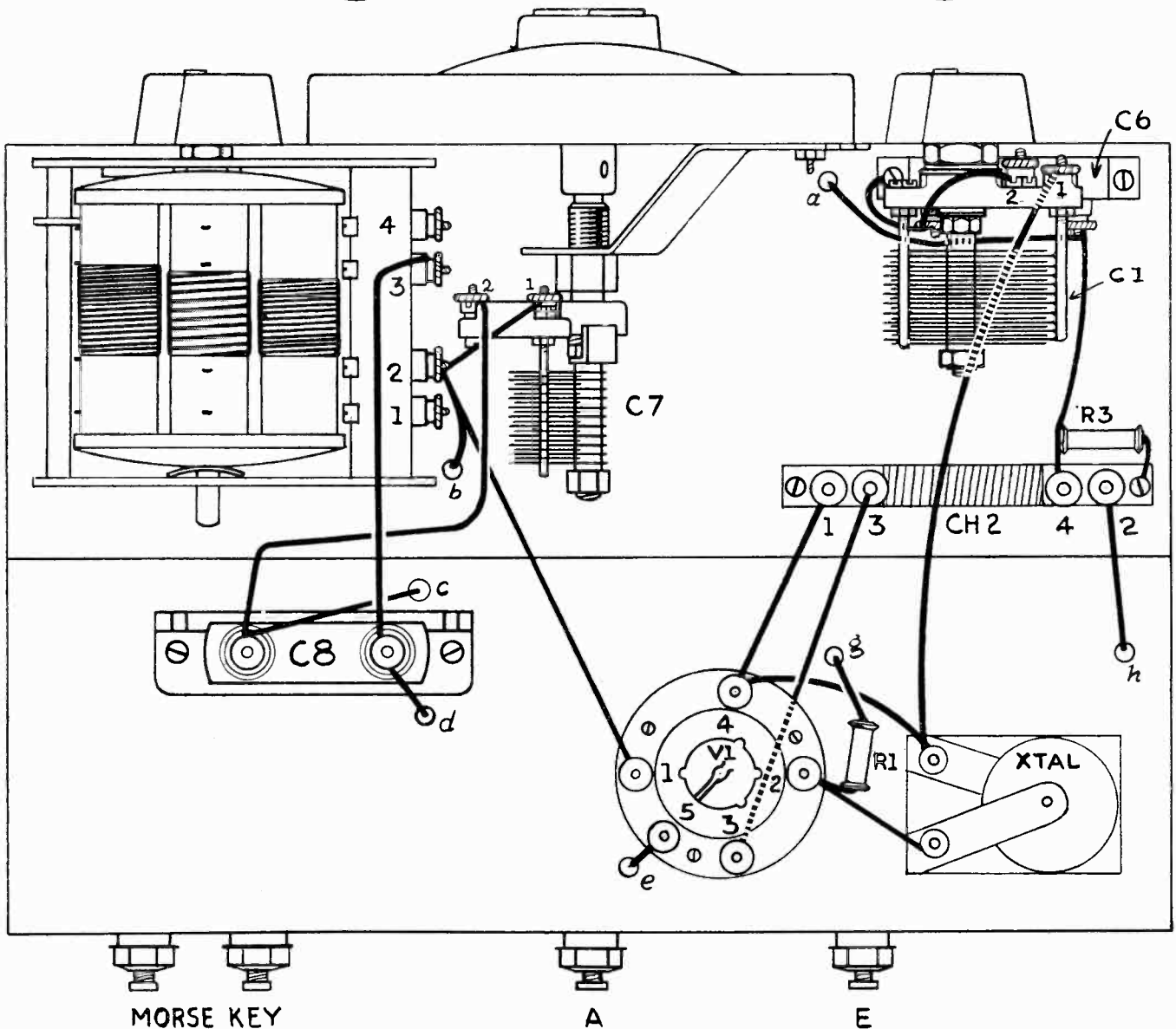
ADJUSTING AND OPERATING THE HI-Q TRANSMITTERS

Connect up the batteries, the morse key, and the dummy aerial (also the microphone transformer and microphone in the case of the speech transmitter) according to the wiring diagrams on pages 26—29.

Now turn the rotary coil knob to position 4, plugging the dummy aerial tap to the 40 metre socket. A 0—50 millimetre should be connected in the high tension positive lead and the condenser C1 tuned until a deflection of the needle is observed. The condenser C1 should now be tuned until a deflection of the needle reaches its lower point.

For transmitting on the 20 metre band the coil unit knob is switched to position 3, the dummy tap plugged to the 20 metre socket, and these instructions repeated. It will be found that the tuning of condenser C1 will be very flat, but a noticeable deflection can be seen.

Building and Wiring the



A TRANSMITTER IS SIMPLE TO BUILD—

Before you bolt the front panel and chassis together, mount the following components on the chassis: valve holders V1; fixed condensers C2, C3, C5, C6, C8; short wave chokes CH1, CH2; crystal holder with crystal.

Wire in this order.

Connect terminal 1 on choke CH2 to terminal 4 on valve holder V1, then to upper terminal on condenser C1 later.

Connect terminal 3 on choke CH2 to terminal 3 on valve holder V1, taking the wire underneath the valve holder.

Connect holding-down screw of condenser C6 to left-hand terminal of condenser C6, leaving a short length of wire for connection to tuning condenser C1 later.

Connect terminal 2 on valve holder V1 to lower terminal on crystal holder.

Connect terminal 4 on choke CH2 to right-hand terminal on condenser C6.

Connect terminal A to lower terminal on condenser C2; connect a length of wire to upper terminal on condenser C2 and then through chassis (hole b) for connection to coil unit later.

Connect terminal E through chassis (hole c) to left-hand terminal on condenser C8 and leave a short length of wire for connection to condenser C7 later.

Connect terminal 2 on choke CH2 through chassis (hole h) to left-hand terminal on condenser C5 and leave a length of wire for connection to switch S1 later.

Connect terminal 5 on valve holder V1 through chassis (hole e) to right-hand terminal on condenser C3; left-hand terminal on condenser C3 to fixing-down screw.

Connect inner Morse Key terminal through chassis (hole d) to right-hand terminal on condenser C8, leaving a short length of wire for connection coil unit later.

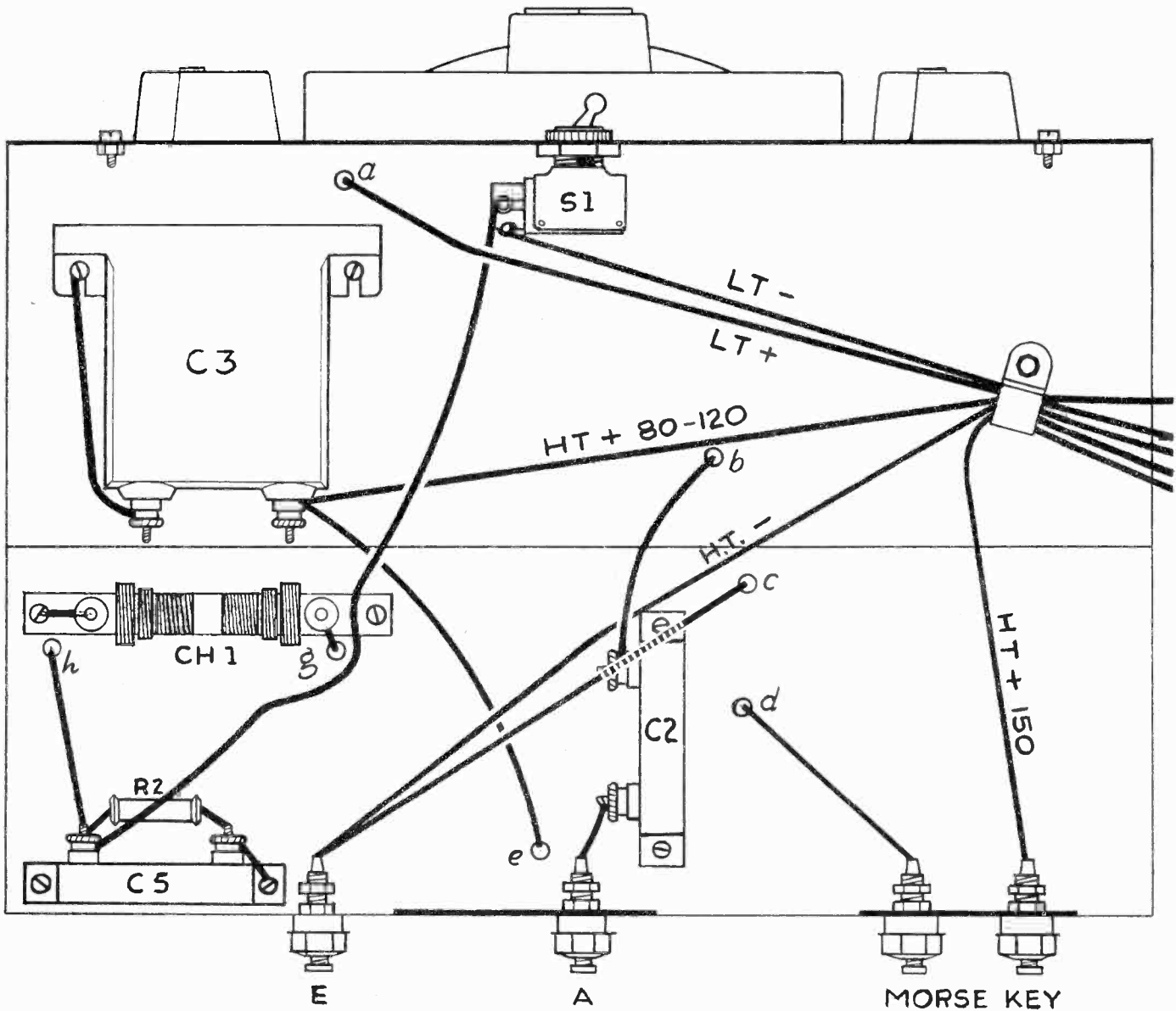
Now connect up the three Resistances.

Connect one end of resistance R3 (red body, green tip, orange dot) to holding-down screw on condenser C6; other side of R3 to terminal 4 on choke CH2.

Connect one side of resistance R1 (green body, black tip, black dot) to terminal 2 on valve holder V1; other side of R1 through chassis (hole g) to right-hand terminal on choke CH1; left-hand terminal on choke CH1 should be connected to holding-down screw on CH1.

Connect one end of resistance R2 (green body, black tip, black dot) to left-hand terminal of condenser C5; other side of R2 to right hand terminal on condenser C5, then to holding-down screw on condenser C5.

Hi-Q Morse Transmitter



—AS THESE WIRING DIAGRAMS SHOW.

Mount the coil unit on the panel and bolt the panel to the chassis.

Now connect the wire from the right-hand terminal on condenser C8 to terminal 3 on the coil unit; and the wire through the chassis (hole b) (from the upper terminal of condenser C2) to terminal 2 on the coil unit, leaving a short length of wire for connection to condenser C7 later. At the same time take a wire from terminal 2 on the coil unit to terminal 1 on valve holder V1.

Condenser C7 (together with Decimal dial) and condenser C1 should next be mounted on the panel. Perhaps you will find it easier to make the necessary connections to condenser C1 before you actually bolt it on.

Connect the wire from the upper terminal on the crystal holder to terminal 1 on condenser C1; connect a wire from the left-hand terminal on condenser C6 to terminal 2 on condenser C1.

BEFORE you build this transmitter or the Speech transmitter, you must obtain from the Post Office an A.A. transmitting licence. Full directions how to obtain this will be found on page 22.

Connect the wire from terminal 2 on coil unit to terminal 3 on condenser C7; connect the wire from the left-hand terminal of condenser C8 to terminal 2 on condenser C7.

Mount Switch S1 through panel and chassis and connect one terminal to the wire from the left-hand terminal of condenser C5.

BATTERY CONNECTIONS.

(Use braided, rubber-covered wire for these.)
Connect L.T.— to the unused terminal on switch S1.

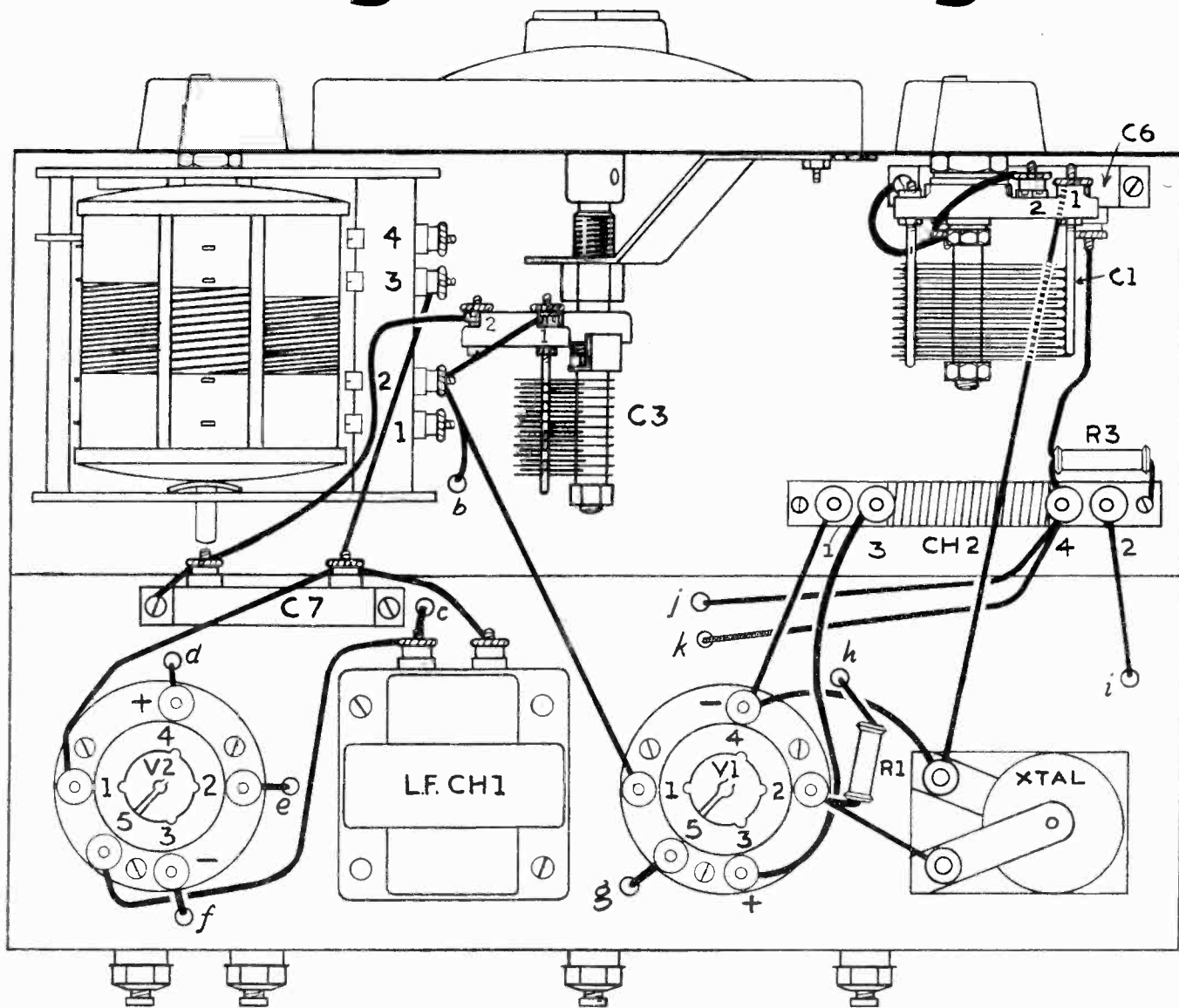
L.T. + through panel (hole a) to right-hand terminal on condenser C6.

H.T.— to terminal E.

H.T. + 80/100 volts to right-hand terminal of condenser C3.

H.T. + 150 volts to outward Morse Key terminal.

Building and Wiring the



MIC. TRANSFORMER

A

E

ONCE YOU HAVE BUILT THE MORSE TRANSMITTER YOU NEED

Before you bolt the front panel and chassis together, mount the following components on the chassis; valve holders V1 and V2; fixed condensers C2, C4, C5, C6, C7; H.F. chokes CH1, CH2; L.F. choke CH1; crystal holder with crystal. Wire in this order.

Connect right-hand terminal on condenser C6 to terminal 4 on H.F. choke CH2 through chassis (hole j) then back again through chassis (hole d) to terminal 4 on valve holder V2.

Connect terminal 2 on H.F. choke CH2 through chassis (hole i) to left hand terminal on condenser C5, then through chassis (hole f) to terminal 3 on valve holder V2.

Connect terminal 3 on H.F. choke CH2 to terminal 3 on valve holder V1; connect terminal 1 on H.F. choke CH2 to terminal 4 on valve holder V1 and then to upper terminal on crystal holder, leaving a length of wire for connection to condenser C1 later.

Connect terminal 2 on valve holder V1 to lower terminal on crystal holder.

Connect terminal 5 on valve holder V1 through chassis (hole g) to right hand terminal on condenser C4; left-hand terminal of condenser C4 to holding-down screw.

Connect holding-down screw on condenser C6 to left-hand terminal on condenser C6, leaving a short length of wire for connection to condenser C1 later.

Connect terminal 5 on valve holder V2 to left-hand terminal on L.F. choke CH1.

Connect terminal 1 on valve holder V2 to right-hand terminal on condenser C7 and then to right-hand terminal on L.F. choke CH1. Connect terminal 2 on valve holder V2 through chassis (hole e) to inner Microphone Transformer terminal.

Connect terminal A to lower terminal on condenser C2; take a wire from upper terminal

on condenser C2 through chassis (hole b) for connection to coil unit later.

Next mount the three resistances.

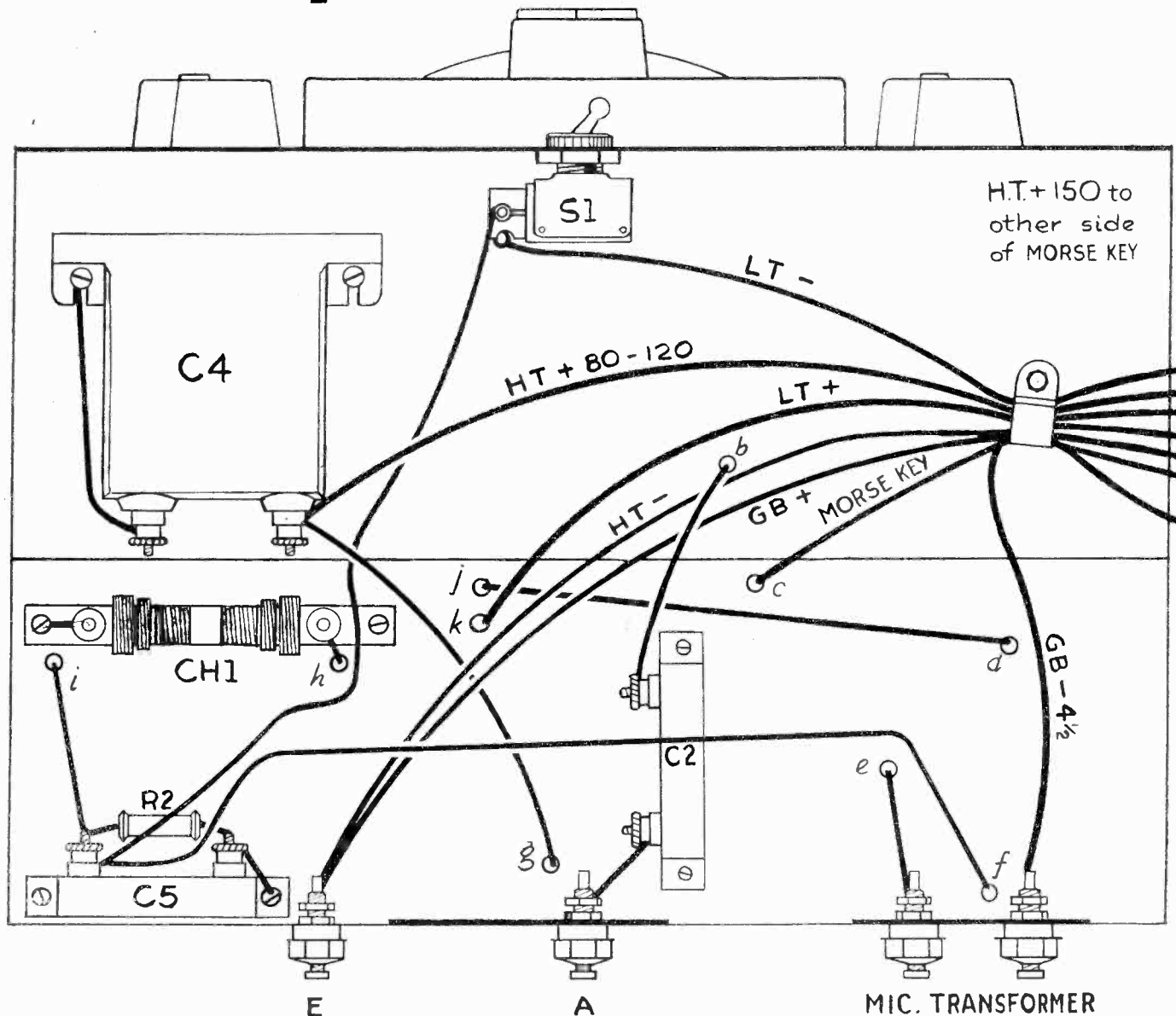
Connect one end of resistance R3 (red body, green tip, orange dot) to terminal 4 on H.F. choke CH2; other end of R3 to holding-down screw on choke CH2.

Connect one end of resistance R1 (green body, black tip, black dot) to left-hand terminal on valve holder V1; other end of R1 through chassis (hole h) to right-hand terminal on H.F. choke CH1; left-hand terminal on H.F. choke CH1 to holding-down screw of CH1.

Connect one end of resistance R2 (green body, black tip, black dot) to left-hand terminal on condenser C5; other end of R2 to right-hand terminal on condenser C5 and then to fixing down screw on condenser C5.

Mount the coil unit and the panel and bolt the panel to the chassis.

Hi-Q Speech Transmitter



ONLY A FEW EXTRA PARTS FOR THIS SPEECH TRANSMITTER

Connect terminal 3 on coil unit to right-hand terminal on condenser C7; connect the wire through chassis (hole b) (from the upper terminal of condenser C2) to terminal 2 on coil unit, leaving a short length of wire for connection to condenser C3 later; at the same time connect a wire from terminal 2 of coil unit to terminal 1 on valve holder VI.

Mount the condenser C3 (together with Decimal dial) and condenser C1 on the panel. Perhaps you will find it easier to make the necessary connections to condenser C1 before you actually mount it.

Connect the wire from the upper terminal of crystal holder to terminal 1 of condenser C1; connect the wire from the left-hand terminal of condenser C6 to terminal 2 of condenser C1.

Connect the wire from terminal 2 of coil unit to terminal 1 on condenser C3; connect terminal 2 on condenser C3 to left-hand terminal

BEFORE you build this transmitter or the Morse transmitter, you must obtain from the Post Office, an A.A. transmitting licence. Full directions how to obtain this will be found on page 22.

of condenser C7, then to fixing-down screw on condenser C7.

Mount the Switch S1 to the chassis and panel.

Connect one terminal of switch S1 to left-hand terminal of condenser C5.

Battery connections.

Connect L.T.— to the unused terminal on switch S1.

L.T.+ through chassis (hole k) to terminal 4 on H.F. choke CH2.

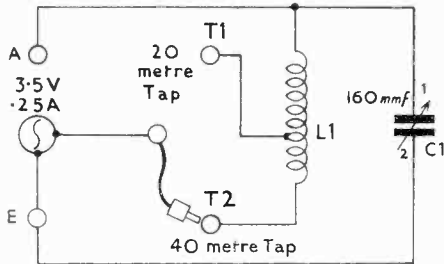
Connect H.T.— and G.B.+ to terminal E. G.B.— 4½ volts to outer Microphone Transformer terminal.

H.T.+ 80/120 volts to right-hand terminal of condenser C4.

H.T.+ 150 volts should be connected to one terminal on the morse key.

The other terminal on the morse key should be taken through chassis (hole c) to left-hand terminal on L.F. choke CH1.

The Hi-Q Dummy Aerial



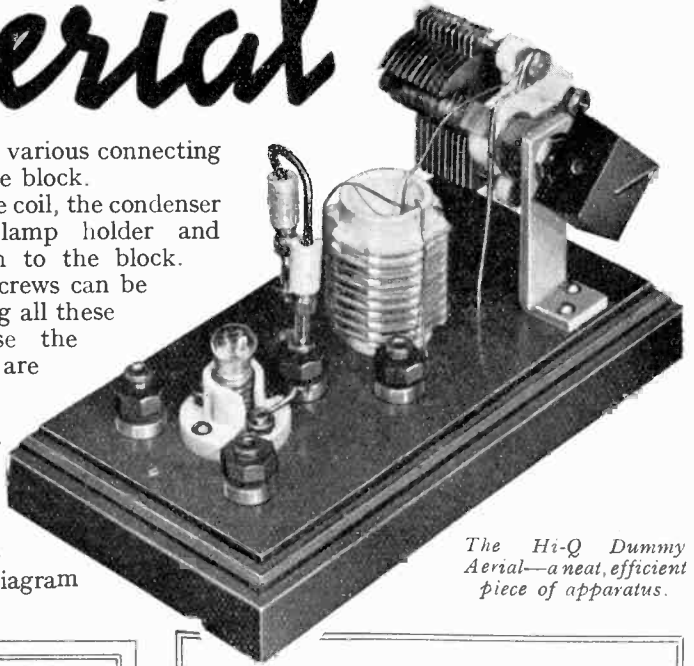
THE Dummy Aerial is easy to build and can be completed in just over half an hour.

The first job to tackle is winding the coil, which consists of 20 turns of the D.S.C. wire with a tap at 15 turns. Next drill the switch block to take the Hi-Q terminals. The positions of these terminals are not critical and a good idea of where the holes should be drilled can be had from the wiring diagram. At the same time drill the necessary

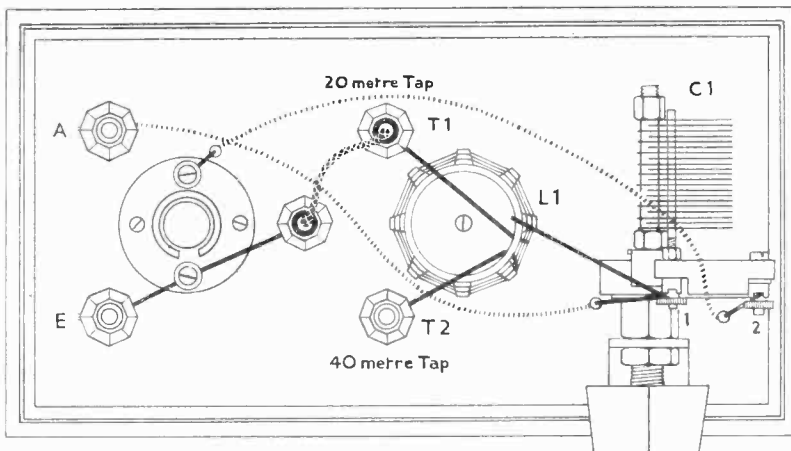
holes to take the various connecting wires through the block.

Now mount the coil, the condenser bracket, flash lamp holder and the terminals on to the block. Ordinary wood screws can be used for mounting all these except of course the terminals which are bolted down. Next mount the tuning condenser on its bracket and clamp it tightly.

The wiring can now be easily completed from the diagram below.



The Hi-Q Dummy Aerial—a neat, efficient piece of apparatus.



Parts required for the Hi-Q Dummy Aerial.

- C1—Lissen Hi-Q Variable Condenser 160 mmfds. (Hi-Q-5652) ... 7/6
- 1 Universal Bracket (Bulgin, etc.) ... 3d.
- 1 Flash-lamp bulb, 3.5 v. .25 a. Lissen 3d.
- Flash-lamp bulb holder (baseboard mounting type, Bulgin, etc.) ... 3d.
- Ceramic or Ebonite ribbed Coil Former 1½ in. diameter ... about 6d.
- 2 oz. D.S.C. 24 gauge copper wire about 1/-
- 5 Lissen Hi-Q Terminal Sockets (Hi-Q-5648) ... each 6d.
- 1 switch mounting block (obtainable from any electricians) ... about 6d.
- A small quantity 16 s.w.g. copper wire, rubber covered flex, two Lissen wander plugs.

ACCESSORIES for the Hi-Q Transmitters.

Microphone.—Microphone Transformer.—0.50 millimeter.

Microphones can be purchased at all prices from even as low as 10/- but if you want really excellent results it is worth while spending a little more money on this. The Shaftesbury Bio-tran microphone (on the left) will give really excellent results and is not too exorbitant at its price of £2 15s. The Microphone Transformer which you will also require is 10/- extra. A cheap, efficient 0.50 millimeter which is also necessary for the transmitters can also be obtained from the Shaftesbury Supplies, price 6/6. The address to write to is: 224, Shaftesbury Avenue, W.C.2.



Crystals—Crystal Holders.

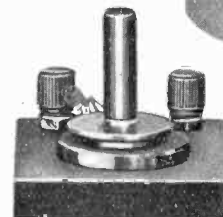
Both Hi-Q transmitters use a 40 metre crystal which costs 15/- and is obtainable from either Brookes Measuring Tools, 51-53, Church Street, Greenwich, S.E.10 or the Quartz Crystal Co., 63-71, Kingston Road, New Malden, Surrey. Holders will also be required and these are obtainable in many patterns and prices from the same firms from 4/6.

Morse Key.

To begin with and for practice purposes an excellent morse key at 5/- can be obtained from the Quartz Crystal Co.



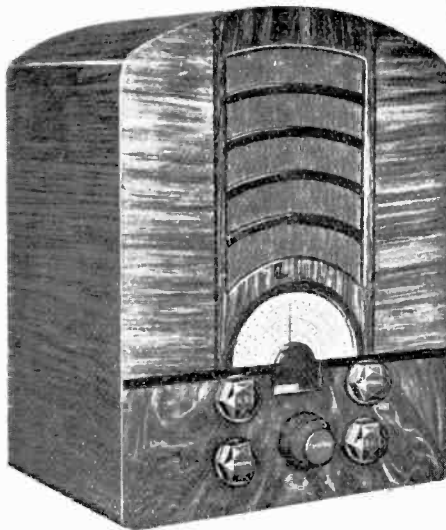
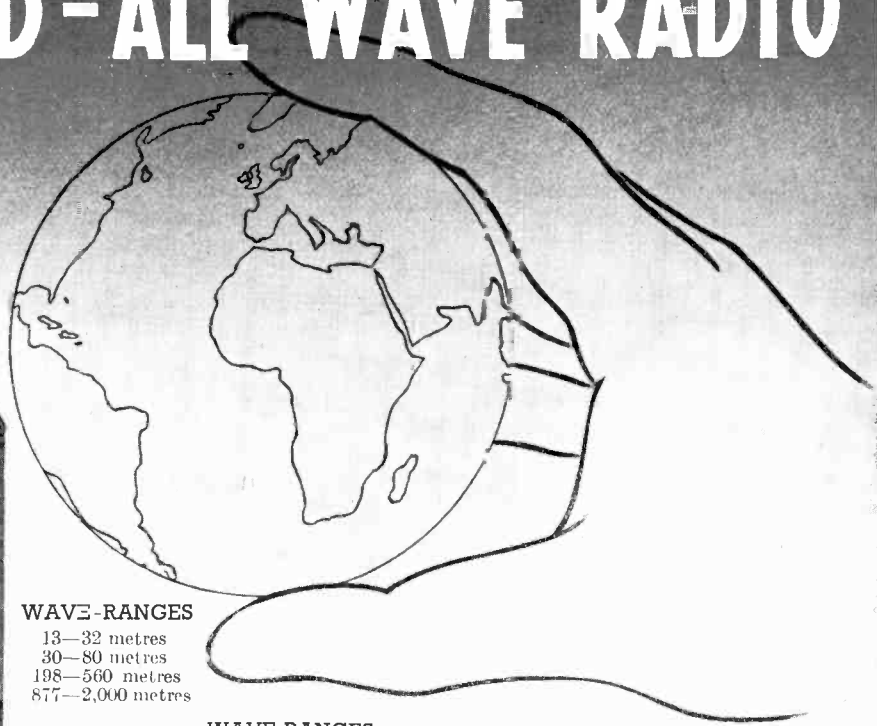
The Brookes Crystal Holder, Type 3B, price 16/6.



The Quartz Crystal—Type A. Crystal Holder, price 4/6.

LISSEN

ALL WORLD-ALL WAVE RADIO



WAVE-RANGES
 13-32 metres
 30-80 metres
 198-560 metres
 877-2,000 metres

WAVE-RANGES
 18-54 metres
 200-560 metres
 900-2,000 metres

Model 8114. ALL-WAVE A.C. MAINS SUPERHET.

Here is a set that will bring you entertainment from almost any station in the world. It incorporates every known and up-to-date refinement, ultra-fine controls, visual tuning, variable selectivity, automatic volume control, sensitivity and quiet control.

Price 17 Gns.

H.P. Terms—21/8 down and 12 monthly rentals of 31/-; or 21/8 down and 24 monthly rentals of 17/-.

Model 8216. THREE WAVE BAND A.C. MAINS RECEIVER

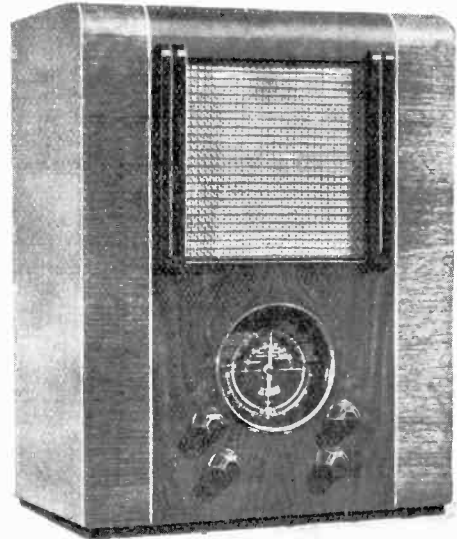
A wonderful choice of home, continental and world-wide short wave broadcasts is offered you in these receivers.

A.C./D.C. MAINS MODEL. Price 9 GNS.

H.P. Terms—11/8 down and 12 monthly rentals of 16/7; or 11/8 down and 18 monthly rentals of 11/8.

Model 8165. BATTERY MODEL Price 8 GNS.

Complete with Batteries
H.P. Terms—10/6 down and 12 monthly rentals of 14/10; or 10/6 down and 18 monthly rentals of 10/6.



ASK YOUR DEALER FOR A DEMONSTRATION

The Hows & Wheres of

SHORT wave listeners who start to collect QSL or Verification cards often find it is not always easy to obtain them. Sometimes it is difficult to know where to apply for them—and even when application has been made in the right quarter, very often no QSL card is forthcoming. This article explains the correct methods of obtaining these cards.

MANY readers have written, asking us to explain the secret of collecting QSL cards. In the first place, you must know the address to which cards should be sent. All British cards are handled by the Radio Society of Great Britain, 53, Victoria Street, London, S.W.1, and if you are a member, this service is offered to you free of charge. The Resau Belge and R.E.F. perform similar functions in Belgium and France respectively.

Secondly, it is essential to enclose postage and it is no use sending a stamped addressed envelope to foreign countries in which it will not be of any value. From the local Post Office you can obtain an

International Reply Coupon, price 6d. This coupon can be exchanged in most Foreign Countries outside the British Empire for a stamp of the correct denomination for the country in question. For use in the British Empire, an Imperial Reply Coupon can be obtained from the Post Office, price 3d. If these coupons are sent with all applications for cards to the correct addresses, replies will be quickly forthcoming.

Verifications from Ships

Many readers also tell us that they have written to ship telephone stations for QSL cards without receiving a single reply. Actually, the only person qualified to issue ship's verifications is the ship's officer himself to whom application

should be made. Communications addressed to him via the ship's Company's office, will usually take too long to reach him. The quickest way to reach him is to find out the position of the ship from the lists in the Daily papers, which will tell you exactly when and where the ship will dock. Sometimes the ship will dock on one day and leave the next, and it is important to get your report into the Radio Operator's hands before the ship leaves.

All reports should be addressed to "Chief Radio Operator" on board ship at the dock and should be posted so that they will reach the dock before him if possible, or at least before he leaves. The name of the steam ship line and the ship's radio call letters are not necessary, but the name of the ship and dock are most important. And remember, if the ship is in foreign waters, to enclose an International Reply Coupon.

These are the Addresses to write to for QSL Cards

AMERICA (divided into 9 states)
 W1—W1BGY, 35, Call Street, Williamansett, Holyoke, Mass.
 W2—W2EVA, 21-20, 42nd Street, Long Island City, N.Y.
 W3—W3CZE, 418, NW 10th Street, Washington, D.C.
 W4—W4CBY, 520, NE Whiteford Avenue, Atlanta, Ga.
 W5—W5DKR, 2749, Myrtle Street, New Orleans, La.
 W6—W6DTE, Box 123, Inglewood, California.
 W7—W7BPC, 4919 S. Prospect Street, Tacoma, Wash.
 W8—W8GER, 324, Richmond Avenue, Dayton, Ohio.
 W9—W9JO, 319, Sherman Avenue, Evanston, Ill.
 ABYSSINIA—R.E.F. 6, Square de la Dordogne, Paris 17e.
 ALASKA—K7DVF, Box 297, Wrangell.
 ALBANIA—via Radio G.U.F. Trento, Italy.
 ALGERIA—via R.E.F., 6, Square de la Dorgogne, Paris 17e.
 ANDORRA—via U.R.E., Box 262, Madrid.

ANGOLA—via Rede dos Emissores Portugueses, Rua, Primeiro de Dezembro, 33-3, Lisbon, Portugal.
 ARGENTINA—via Radio Club, Argentino, Riva-davia, 2170, Buenos Aires.
 AUSTRALIA—via VK3RJ, W.I.A., 23, Landale Street, Box Hill, E.11, Victoria.
 AUSTRIA—via OE3WB, Bahngasse 29, Klosterneuberg.
 AZORES—as for Angola.
 BELGIUM—via ON4HM, Chateau de Marchiennes, Harvenget, Hainault.
 BOLIVIA—via CPIAA, c.o., Standard Oil Co. of Bolivia, La Paz.
 BRAZIL—via Liga de Amadores, Brasileiros de Radio Emissao, Caixa Postal 2353, Rio de Janeiro.
 CANADA—
 VE1—via VE1FB, 84, Spring Garden Road, Halifax, N.S.
 VE2—via VE2AH, 5184, Mountain Sights Avenue, N.D.G., Montreal, P.Q.
 VE3—via VE3QB, Lanark, Ontario.
 VE4—via VE4DR, Box 63, Killam Alta.
 VE5—via VE5EC, 2024, Carnarvon Street, Victoria, B.C.
 CEYLON—via Radio Club of Ceylon and South India, Colombo.

CHILE—via CE3AG, Casilla 761, Santiago
 CHINA—via XU8AA, International Amateur Radio Association of China, Box 685, Shanghai.
 COLOMBIA—via Liga Colombiana de Radio Aficionados, Box 350, Bogota.
 CUBA—via CM2AD, Milagros 37, Vibora, Habana.
 CZECHOSLOVAKIA—via C.A.V. Box 69, Praha 1.
 DENMARK—via Experimenting Danish Radioamateurs, Box 79, Copenhagen.
 EGYPT—via SU1SG, c.o. Catholic Club, Mustapha Barracks, Alexandria.
 ESTHONIA—via ES6C, Erne t.13-3, Tallinn.
 FINLAND—via S.R.A.L. QSL. Section, c.o. Pohgola, Box 42, Helsinki.
 FRANCE—R.E.F. 6, Square de la Dorgogne, Paris 17e.
 GERMANY—via D.A.S.D., Schweinfurthstr. 78, Berlin-Dahlem.
 GREAT BRITAIN—via R.S.G.B., 53, Victoria Street, London, S.W.1.
 GUAM—via K6LG, 62, Santa Cruz Street, Agana.
 HONG KONG—via H.A.R.T.S., Box 651, Hong Kong.
 HUNGARY—via National Union of Hungarian Short-Wave Amateurs

Collecting QSL Cards

An International or Imperial Reply Coupon should be enclosed with every request for a QSL card. They can be obtained from any Post Office, price 6d. and 3d.



British QSL Cards

British amateurs are not fond of receiving reports from British listeners asking for confirmation of reception from "around the corner" so to speak, when they are already working some other station a thousand miles away, but many of

them would appreciate a report covering a week's transmissions, even though it only came from a receiving station fifty miles away and would in return, forward a QSL card.

Short Wave listeners who want to collect cards from British stations are advised, therefore, to keep reports for at least a week and send in a tabulated list. A stamped addressed envelope should also be enclosed for the reply.

Those who are sufficiently keen should join the Radio Society of Great Britain, when they are automatically granted a B.R.S. number. Report cards can then be printed with this number boldly displayed and report sent to transmitting stations.

(M.R.A.O.E.) Matyas-ter 6, Budapest 8.
 ICELAND—via TF3C, Box 117, Akureyri.
 INDIA—via VU2LJ, Baghjan Tea Estate, Doom Dooma P.O. Assam.
 IRISH FREE STATE—via EI4D, I.R.T.S., "Lonsdale," Roebuck, Clonskeagh, Dublin.
 ITALY—via Associazione Radiotecnica, Italiana Viale Bianca Maria 24, Milano, Italy.
 JAMAICA—via VP5MK, 2-B, North Street, Kingston.
 JAPAN—via Japanese Amateur Radio League, Box 377, Tokio.
 JUGOSLAVIA—via Stephen Liebermann, Medulucuva 9, Zagreb.
 KENYA—via Radio Society of East Africa, Box 380, Nairobi.
 LATVIA—via A. Karklin, 2, Lenca dz. 8, Riga.
 LITHUANIA—via Lietuvos Radio, Megejai, Box 100, Kaunas.
 LUXEMBOURG—via LX1JW, Ingenieur des P.T.T., 67, Avenue du Bois, Luxembourg.
 MADEIRA—as for Angola.
 MALAYA—via VS2AG, Malayan Public

Works Service, Kuala, Kangsar, Perak.
 MALTA—via ZB1H, 28, Sda. Nuoba, Floriana.
 MAURITIUS—via VQSAF, Box 163, Port Louis.
 MEXICO—via LMRE, Box 907, Mexico, D.F.
 MOROCCO—via CN8MA, 8, rue du 4-Septembre, Casablanca.
 MOZAMBIQUE—as for Angola.
 NETHERLANDS—via N.V.I.R., Box 400, Rotterdam.
 NETHERLAND INDIES—via PKIVH, Heusden, Palmenlaan 1, Bandoeng.
 NEWFOUNDLAND—via Newfoundland Amateur Radio Association, Box 650, St. Johns.
 NEW ZEALAND—via N.Z.A.R.T., Box 517, Dunedin.
 NICARAGUA—via YNIOP, Radioifusora, Bayer.
 NORWAY—via N.R.R.L., Box 2253, Oslo.
 PERU—via OA4O, Radio Club Peruano, Box 538, Lima.
 PHILIPPINE ISLANDS—via KA XA, Boulevard Apartments, Manila.
 POLAND—via Polski Zwiazek Krotko-

falowcow, Bielowskiego 6, Lwow.
 PORTO RICO—via K4RJ, Family Court 7, Loiza Road, Santurce.
 PORTUGAL—as for Angola.
 ROUMANIA—via YR5VC, Matei Basarab 3-bis. Bucuresti 4 (cards should be sent in plain envelopes with no indication as to contents. All call signs must be on the QSL card).
 SALVADOR—via YS1FM, 7a, Calle Poniente 76, San Salvador City.
 SIBERIA—as U.S.S.R.
 SOUTH AFRICA—via S.A.R.R.L., Box 7028, Johannesburg.
 SPAIN—via FAR, Box 643, Madrid.
 SUMATRA—as Netherland Indies.
 SUDAN—as Egypt.
 SWEDEN—via S.S.A., QSL Section, Stockholm 8, Sweden.
 SWITZERLAND—via U.S.K.A. QSL Service, Neu-Allschwil, near Basel.
 TANGANYIKA—as for Kenya.
 TIBET—C.o. Terris Moore, American Consulate, Shanghai, China.
 TUNIS—as for France.
 UGANDA—as Kenya.
 U.S.S.R.—via C.S.K.W., Journal-Radiofront 1, Samotechny Per. 17, Moscow.
 VENEZUELA—via YV4AC, Norte 4, No. 51, Caracas.

How to erect four interesting types of 5-Metre Aerials

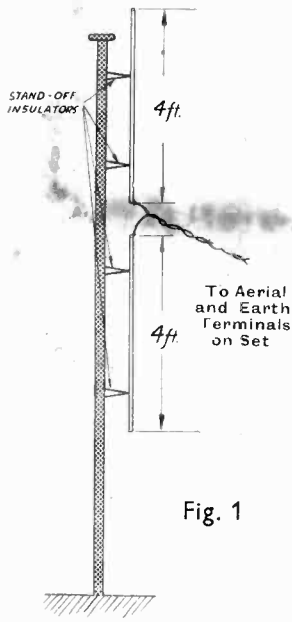


Fig. 1

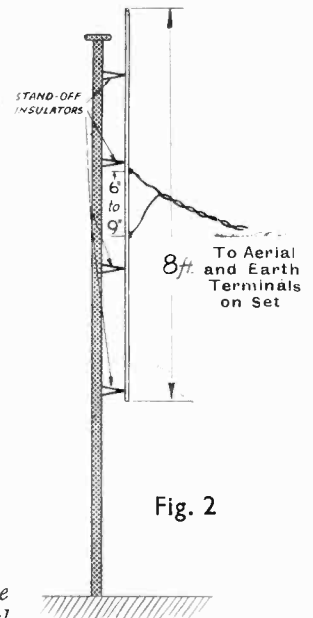


Fig. 2

The 5 metre band is still an experimental band and many interesting types of aerials have been evolved. Some of these are quite easy to erect and others, though more complicated, will, of course, produce results which make the little trouble involved worth while.

One of the most popular 5 metre aerials is illustrated in Figure 1. This is a dipole aerial and should be erected as high as possible. The aerial itself is constructed of two 4 ft. lengths of heavy copper wire (12 s.w.g.) or better still, two duralium tubes rigidly secured to the mast by means of stand-off insulators. The leads to the receiver take the form of ordinary twisted lamp flex and are connected as in the illustration.

Figure 2 shows a variation of this aerial. The aerial is all in one piece, 8 ft. long and the flex leads are "fanned" across the centre part of the aerial, the spread being anything between 6/9 ins.

Figure 3 shows a very efficient aerial which has been developed for high signal-to-noise ratio for ultra short wave work and is incidentally very useful for television working. The aerial proper consists of a 4ft. heavy wire or rod with its lower end connected to the centre conductor of a screened cable which follows the line of the aerial for at least 4ft. The second aerial is connected to

ON the medium and long-wave bands and on the short-wave bands down even as low as 10 metres, any reasonably good aerial system will produce results, but when you are dealing with wave-lengths as low as 5 metres, it is really necessary to erect a different type of aerial.

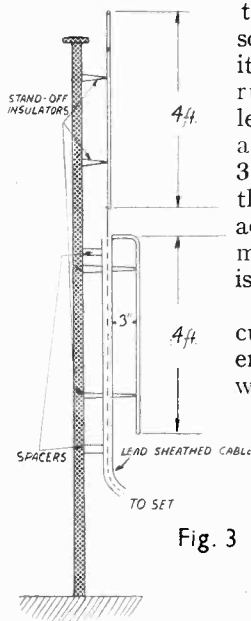


Fig. 3

the sheath of the screened cable at its top end, and runs down parallel to the cable at a distance of 3 in. In practice this aerial should actually be 4ft. minus 1 1/2 in., that is 3ft. 1 1/2 in.

A more difficult aerial to erect, but one which has outstanding merits is shown in Fig. 4. It consists of two 4 foot aerials erected on a mast

one above the other as in the illustration. A length of screened cable is brought out at right angles from

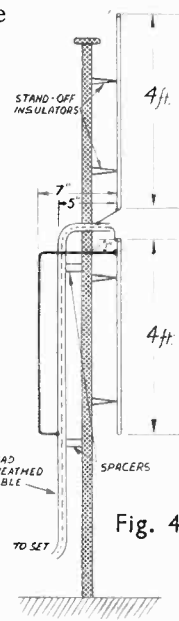
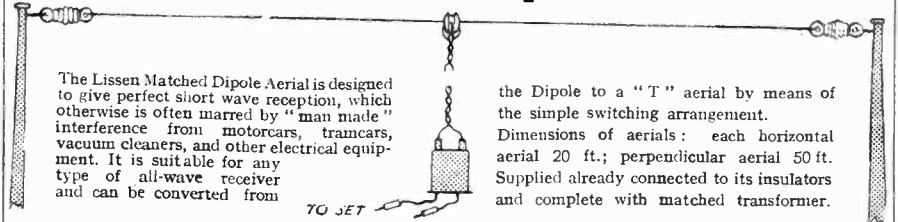


Fig. 4

the sheath of the cable. The screened cable can then be taken in any direction to the A terminal on receiver.

LISSEN Matched Dipole Aerial



The Lissen Matched Dipole Aerial is designed to give perfect short wave reception, which otherwise is often marred by "man made" interference from motorcars, tramcars, vacuum cleaners, and other electrical equipment. It is suitable for any type of all-wave receiver and can be converted from

the Dipole to a "T" aerial by means of the simple switching arrangement.

Dimensions of aerials: each horizontal aerial 20 ft.; perpendicular aerial 50 ft. Supplied already connected to its insulators and complete with matched transformer.

LN 5407 Price 25/-

ALL THE SHORT WAVE STATIONS OF THE WORLD

ALL WAVELENGTHS ARE IN METRES

CORRECT AT TIME OF GOING TO PRESS

Metres.	Station.
9.494	W2XDU, NEW YORK.
9.494	W8XAI, NEW YORK.
9.494	W8XWJ, DETROIT, MICH.
13.92	W8NK, PITTSBURG, PA.
13.95	W2XE, WAYNE, N. J.
13.97	GSH, DAVENTRY, ENGLAND.
14.01	WKK, Lawrenceville, N. J.
14.17	LSL, Buenos Aires, Arg.
14.23	PSA, Rio de Janeiro, Brazil.
14.27	LSN, Buenos Aires, Arg.
14.38	EHY-EDM, Madrid, Spain.
14.72	GAA, Rugby, England.
14.97	OPL, Leopoldville, Belgian Congo.
14.99	DHO, Nauen, Germany.
15.14	WKN, Lawrenceville, N. J.
15.24	CEC, Santiago, Chile.
15.28	VOG, Nairobi, Kenya, Africa.
15.39	LSQ, Buenos Aires, Argentina.
15.50	FTM, Assise, France.
15.50	PMA, Bandoeng, Java.
15.57	PPU, Rio de Janeiro, Brazil.
15.58	DFA, Nauen, Germany.
15.62	ORG, Brussels, Belgium.
15.68	LSM, Buenos Aires, Argentina.
15.88	ZSS, Kishpeval, S. Africa.
15.93	PLE, Bandoeng, Java.
16.06	OCL, Lima, Peru.
16.11	GAU, Rugby, England.
16.22	HBH, Geneva, Switzerland.
16.30	PCK, Kootwijk, Holland.
16.35	WLA, Lawrenceville, N. J.
16.38	GAS, Rugby, England.
16.39	YVR, Maracay, Venezuela.
16.44	FTE, St. Assise, France.
16.48	GAW, Rugby, England.
16.50	PMC, Bandoeng, Java.
16.55	LSY, Buenos Aires, Argentina.
16.63	GAA, Rugby, England.
16.68	G.S.G., DAVENTRY, ENGLAND.
16.82	PCV, Kootwijk, Holland.
16.87	W3XAL, BOUND BROOK, N. J.
16.88	PHI, HUIZEN, Holland.
16.89	W2XE, WAYNE, N. J.
16.89	IAC, Piza, Italy.
16.89	DJE, ZEESEN, GERMANY.
16.85 to 18.27	Ships.
16.92	HSP, Bangkok, Siam.
17.00	XGN, Shanghai, China.
17.10	VWY, Poona, India.
17.12	DFB, Nauen, Germany.
17.52	WOO, Ocean City, New Jersey.
18.20	IRY, Rome, Italy.
18.44	WJK, Lawrenceville, N. J.
18.47	KTO, Manila, P. I.
18.51	FZR, Saigon, Indo-China.
18.71	KKP, Kauhuku, Hawaii.
18.89	FTK, St. Assise, France.
18.99	XOJ, Shanghai, China.
18.91	CEC, Santiago, Chile.
19.02	LSL, Buenos Aires, Argentina.
19.15	JVE, Nazaki, Japan.
19.20	JVF, Nazaki, Japan.
19.47	KWO, Dixon, California.
19.50	KKR, Bolinas, California.
19.52	HAS-3, BUDAPEST, HUNGARY.
19.54	KWU, Dixon, California.
19.56	DJR, ZEESEN, GERMANY.
19.56	W2XAD, SCHENECTADY, NEW YORK.
19.60	GSP, DAVENTRY, ENGLAND.
19.62	LRU, BUENOS AIRES, ARGENTINA.
19.63	DJO, ZEESEN, GERMANY.
19.64	W2XE, WAYNE, N. J. Relays WABC.
19.68	RIM, Tashkent, U.S.S.R.
19.68	TPA2, PONTOISE, FRANCE.
19.68	WIXAL, BOSTON, U.S.A.
19.69	PODEBRADY, CZECHOSLOVAKIA.
19.71	PCJ, EINDHOVEN, HOLLAND.
19.71	W8NK, PITTSBURG, PA.
19.74	DJB, ZEESEN, GERMANY.
19.76	GSO, DAVENTRY, ENGLAND.
19.76	MOSCOW, U.S.S.R., Sundays.
19.82	GSF, DAVENTRY, ENGLAND.
19.84	HVJ, VATICAN CITY.
19.85	DJL, ZEESEN, GERMANY.
19.89	R.K.I., MOSCOW, U.S.S.R.
19.92	WNC, Hialeah, Florida.
20.03	KAY, Manila, P. I.
20.04	LZA, SOFIA, BULGARIA.
20.08	HJB, Bogota, Colombia.
20.08	HII, Trujillo, Dominican Republic.
20.08	HJA3, Barranquilla, Colombia.



All BROADCAST stations are printed like this —
13.92—W8NK, PITTSBURG, PA.

All TELEPHONE stations like this —
14.01—WKK, Lawrenceville, N. J.

These stations are used to relay trans-oceanic telephone conversations—speech may be "scrambled."

All EXPERIMENTAL stations like this —
16.55—LSY, Buenos Aires, Argentina.

These stations use mostly morse and transmit irregularly

Metres.	Station.
20.19	OCJ2, Lima, Peru.
20.27	WQV, Rocky Point, N. Y.
20.29	ROU, Omsk, Siberia.
20.37	OQA, Rome, Italy.
20.42	PSF, Rio de Janeiro, Brazil.
20.45	GBL, Rugby, England.
20.55	JVM, Nazaki, Japan.
20.56	WMN, Lawrenceville, N. J.
20.64	HBJ, Geneva, Switzerland.
20.65	LSN, Buenos Aires, Argentina.
20.71	YSI, San Salvador, Salvador.
20.71	HRL5, Nacome, Honduras.
20.71	TIU, Cartago, Costa Rica.
20.71	YNA, Managua, Nicaragua.
20.71	HPE, Panama.
20.71	HRI, Tegucigalpa, Honduras.
20.71	TGF, Guatemala City.
20.73	WMP, Lawrenceville, N. J.
20.75	CBW, Rugby, England.
20.75	DZH, ZEESEN, GERMANY.
20.97 to 21.26	Amateurs.
21.19	YJZ, Rabaul, New Guinea.
21.58	WQP, Rocky Point, N. Y.
21.70	SUZ, Cairo, Egypt.
21.91	KKZ, Bolinas, California.
21.98	HJY, Bogota, Colombia.
22.00	SPW, WARSAW, POLAND.
22.09	GBB, Rugby, England.
22.35	GCT, Rugby, England.
22.37	YSJ, Salvador, San Salvador.
22.40	IDU, Asmara, Eritrea.
22.40	WMA, Lawrenceville, N. J.
22.48	YVQ, Maracay, Venezuela.
22.50 to 24.3	Ships
22.58	CGA3, Drummondville, Canada.
22.70	IRJ, Rome, Italy.
22.76	DGG, Nauen, Germany.
22.95	VPD, SUVA, FIJI ISLANDS.
23.00	German ships.
23.36	WOO, Ocean Gate, N. J.
23.38	CNR, Rabat, Morocco.
23.45	IAC, Piza, Italy.
23.47	GBC, Rugby, England.
24.20	DAP, Norden, Germany.
24.40	PLM, Bandoeng, Java.
24.41	GBU, Rugby, England.
24.52	TFJ, Reykjavik, Iceland.
24.56	TYA, Pontoise, France.
24.69	GBS, Rugby, England.

Metres.	Station.
24.73	DZE, Zeesen, Germany.
24.88	PDV, Kootwijk, Holland.
25.00	RNE, MOSCOW, U.S.S.R.
25.02	FZS, Saigon, Indo-China.
25.11	KKQ, Bolinas, California.
25.12	FTA, St. Assise, France.
25.21	XEWI, MEXICO CITY.
25.27	TPA3, PONTOISE, FRANCE.
25.27	W8XK, PITTSBURG, PA.
25.31	DJP, ZEESEN, GERMANY.
25.34	DJO, ZEESEN, GERMANY.
25.36	W2XE, Wayne, N. J. Relays WABC.
25.36	W9XAA, CHICAGO, ILL.
25.40	2RO, ROME, ITALY.
25.40	HJ4BA, MEDELLIN, COLOMBIA.
25.42	WIXAL, BOSTON, MASS.
25.43	DJO, ZEESEN, GERMANY.
25.49	DJD, ZEESEN, GERMANY.
25.51	PODEBRADY, CZECHOSLOVAKIA.
25.53	GSD, DAVENTRY, ENGLAND.
25.60	CJRX, WINNIPEG, CANADA.
25.63	TPA4, PONTOISE, FRANCE.
25.63	KIO, Kauhuku, Hawaii.
25.87	VRR4, Stony Hill, Jamaica.
25.93	HH2T, PORT-AU-PRINCE, HAITI.
26.09	VI3, Fiskville, Australia.
26.09	PMK, Bandoeng, Java.
26.09	XAM, Merida, Yucatan.
26.29	CJA-4, Drummondville, Ontario.
26.35	HBO, Geneva, Switzerland.
27.15	ZLT, Wellington, New Zealand.
27.25	PLP, BANDOENG, JAVA.
27.26	XBJQ, Mexico City.
27.35	OCI—Lima, Peru.
27.65	DFL, Nauen, Germany.
27.67	KWV, Dixon, California.
27.86	GBP, Rugby, England.
27.93	JVM, Nazaki, Japan.
28.09	WNB, Lawrenceville, N. J.
28.12	PLQ, Bandoeng, Java.
28.12	CEC, SANTIAGO, CHILE.
28.14	JVN, Nazaki, Japan.
28.28	WEA, Rocky Point, N. J.
28.44	WOK, Lawrenceville, N. J.
28.49	JIB, Taiwan, Japan.
28.51	VK2ME-VLK, Sydney, Australia.
28.79	XGW, Shanghai, China.
28.80	PKD, Kootwijk, Holland.
28.80	YBG, Medan, Sumatra.
28.85	KEZ, Bolinas, California.
28.91	WCG, Rocky Point, N. Y.
28.98	LSX, BUENOS AIRES, ARGENTINA.
29.04	ORK, BRUSSELS, BELGIUM.
29.13	LSQ, Buenos Aires, Argentina.
29.15	DZC, Zeesen, Germany.
29.25	PMN, Bandoeng, Java.
29.27	LSI, Buenos Aires, Argentina.
29.45	PSH, Rio de Janeiro Brazil.
29.50	KIO, Bahou, U.S.S.R.
29.58	OPM, Leopoldville, Belgian Congo.
29.76	RIR, Tiflis, Siberia.
29.79	EHY, Madrid, Spain.
29.80	JZB, Shinkyo, Manchukuo.
29.83	ZPB, Hamilton, Bermuda.
29.83	SUV, Cairo, Egypt.
29.88	DZB, Zeesen, Germany.
30.09	KAZ, Manila, P. I.
30.15	GCU, Rugby, England.
30.21	HKB, Bogota, Colombia.
30.30	LSN, Buenos Aires, Argentina.
30.40	WON, Lawrenceville, N. J.
30.40	JYS, Kemikawa-Cho, Japan.
30.50	HANRH, HEVEDIA, COSTA RICA.
30.52	IRM, Rome, Italy.
30.43	EAQ, MADRID, SPAIN.
30.60	GCW, Rugby, England.
30.61	LSI, Buenos Aires, Argentina.
30.75	VK2ME-VLK, Sydney, Australia.
30.77	WOF, Lawrence, N. J.
30.77	COCO, HAVANA, CUBA.
30.90	GCA, Rugby, England.
30.99	YNLF, MANAGUA, NICARAGUA.
31.00	DZA, ZEESEN, GERMANY.
31.00	CON, NACAO, CHINA.
31.06	LXN, BUENOS AIRES, ARGENTINA.
31.08	DGU, Nauen, Germany.
31.09	CTIAA, LISBON, PORTUGAL.
31.10	YDB, SOERABAJA, JAVA.
31.13	2RO, ROME, ITALY.
31.22	HJIAFP, CARTAGENA, COLOMBIA.
31.22	HH3W, PORT-AU-PRINCE, HAITI.

ALL WAVELENGTHS ARE IN METRES

Metres.	Station.
31.25	HP5J, PANAMA CITY.
31.25	CB960, SANTIAGO, CHILE.
31.27	HBL, GENEVA, SWITZERLAND.
31.28	VK2ME, SYDNEY, AUSTRALIA.
31.28	WXAU, PHILADELPHIA, PA.
31.28	PCJ, EINDHOVEN, HOLLAND.
31.31	VK3LR, MELBOURNE, AUSTRALIA.
31.32	GSC, DAVENTRY, ENGLAND.
31.35	QCN, MACAO PORT, CHINA.
31.36	WJNK, BOSTON (MILLS), MASS.
31.36	VUB, BOMBAY, INDIA.
31.38	HJ1ABB, BARRANQUILLA, COLOMBIA.
31.38	DJA, ZEESEN, GERMANY.
31.41	TIPQ, SAN JOSE, COSTA RICA.
31.45	DJN, ZEESEN, GERMANY.
31.45	NGOA, NANKIN, CHINA.
31.48	LKJ1, JELOY, NORWAY.
31.48	W2XAF, SCHENECTADY, N. Y.
31.51	RAN, MOSCOW, U.S.S.R.
31.54	HC2J8B, GUAYAQUIL, ECUADOR.
31.55	VK3ME, MELBOURNE, AUSTRALIA.
31.55	HJU, BUENAVENTURE, COLOMBIA.
31.55	GSB, DAVENTRY, ENGLAND.
31.56	PRF5, RIO DE JANEIRO, BRAZIL.
31.58	HJ1ABE, CARTAGENA, COLOMBIA.
31.71	Tripoli, Africa.
31.75	TGW, GUATEMALA CITY.
31.80	COCIL, HAVANA, CUBA.
31.86	PLV, Bandoeng, Java.
31.98	CSW, LISBON, PORTUGAL.
32.09	HSBPJ, BANGKOK, SIAM.
32.15	CGA4, Drummondville, Canada.
32.33	GCB, Rugby, England.
32.72	WNA, Lawrenceville, N. J.
32.83	YVR, Maracaibo, Venezuela.
32.88	HAT 4, BUDAPEST, HUNGARY.
33.26	GCS, Rugby, England.
33.29	KEJ, Bolinas, California.
33.50	HCJB, QUITO, ECUADOR.
33.52	WEL, W2NBJ, Rocky Point, N. Y.
33.41	VWY, Poona, India.
33.93	to 36.58—Ships.
34.10	HKV, Bogota, Colombia.
34.19	PNI, Makassar, D. E. I.
34.29	ZBW, HONG KONG, CHINA.
34.35	WNV, Fairbanks, Alaska.
34.56	GBC, Rugby, England.
34.62	CO9JQ, Canaguay, Cuba.
34.68	WVD, Seattle, Wash.
34.72	YNVA, MANAGUA, NICARAGUA.
35.01	FZB9, Djibouti, French Somaliland.
35.02	WOO, Ocean Gate, N. J.
35.42	DAF, Norden, Germany.
35.69	HC2CW, GUAYAQUIL, ECUADOR.
35.80	IAC, Piza, Italy.
36.65	PSK, Rio de Janeiro, Brazil.
36.65	NEME, MERIDA, Mexico.
36.95	KTP, MANILA, P. I.
38.06	SUN, Cairo, Egypt.
38.19	HC2J8B, GUAYAQUIL, ECUADOR.
38.47	HBP, GENEVA, SWITZERLAND.
38.50	PSZ, Rio de Janeiro, Brazil.
38.89	KLE, Bolinas, California.
39.34	RIM, Russia.
39.42	KWX, Dixon, California.
39.47	T18WS, PUNTA RENAS, COSTA RICA.
39.89	KKH, Kauhuku, Hawaii.
39.97	RKI, Russia.
40.60	ZLT2, Wellington, New Zealand.
40.65	NECR, MEXICO CITY.
40.71	KEQ, Kauhuku, Hawaii.
41.55	HKE, BOGOTA, COLOMBIA.
41.55	VP3BG, GEORGETOWN, B. G.
41.60	EABAB, CANTERBURY, CANTARY ISLANDS.
41.80	CR6AA, LOBITO, ANGOLA, AFRICA.
42.35	PHJ, DORDRECHT, HOLLAND.
42.37	VP3MK, GEORGETOWN.
42.85	PZH, PARAMARIBO, DUTCH GUIANA.
43.00	NBA, Tacubaya, Mexico.
43.45	GDS, Rugby, England.
43.82	KEN, Bolinas, California.
44.12	H17P, TRUJILLO, D. R.
44.31	H1H, SAN PEDRO DE MACORIS, D. R.
44.41	WOA, Lawrenceville, N. J.
44.44	WV, Nasaki, Japan.
44.71	T18P, SAN JOSE, COSTA RICA.
44.90	T12M, SAN JOSE, COSTA RICA.
44.96	YVO, Maracaibo, Venezuela.
45.00	ZP10, ASUNCION, PARAGUAY.
45.00	HC2KL, GUAYAQUIL, ECUADOR.
45.10	IAC, Piza, Italy.
45.18	YV9RC, CARACAS, VENEZUELA.
45.31	PRAO, RIOBAMBA, ECUADOR.
45.25	H1T, TRUJILLO, D. R.
45.52	XDC, VERA CRUZ, MEXICO.
45.80	NBC, Vera Cruz, Mexico.
45.81	T18CC, SAN JOSE, COSTA RICA.
45.81	H14D, TRUJILLO, D. R.
45.85	YV11RB, BOLIVAR, VENEZUELA.
46.07	YV6RV, VELENCIA, VENEZUELA.
46.13	H1L, TRUJILLO, D. R.
46.30	HJ5ABD, CALL, COLOMBIA.
46.51	HJ4ABC, IBAGUE, COLOMBIA.
46.51	H14V, TRUJILLO, D. R.
46.51	HJ1ABB, BARRANQUILLA, COLOMBIA.
46.73	H1IS, PUERTO PLATA, D. R.
46.73	W9XBS, Chicago, Illinois.
46.77	HJA3, Barranquilla, Colombia.

CORRECT AT TIME OF GOING TO PRESS

Metres.	Station.
47.10	YV4RC, CARACAS, VENEZUELA.
47.24	HRY, TEGUCIGALPA, HONDURAS.
47.39	HRPJ, SAN PEDRO, SULA, HONDURAS
47.39	JZG, Relays JVT, JOAK.
47.50	H1Z, TRUJILLO, D. R.
47.51	YV12RM, MARACAIBO, VENEZUELA.
47.77	CO9WR, SANCTI SPIRITUS, CUBA.
47.77	H1G, TRUJILLO, D. R.
48.00	OAN4G, LIMA, PERU.
48.08	H18Q, TRUJILLO, D. R.
48.11	HTRD, LA CEIBA, HONDURAS.
48.50	H1IA, SANTIAGO DE LOS CABALEROS.
48.55	XENA, MEXICO CITY.
48.60	HJ2ABA, TUNJA, COLOMBIA.
48.62	HJ3ABF, BOGOTA, COLOMBIA.
48.70	YV3RC, CARACAS, VEN.
48.78	COGK, SANTIAGO, CUBA.
48.80	H15N, TRUJILLO, D. R.
48.80	CJRO, WINNIPEG, CANADA.
48.86	W8XK, PITTSBURG, PA.
48.90	HJ4ABP, MEDELLIN, COLOMBIA.
48.92	H1N, TRUJILLO, D. R.
48.92	ZGE, KUALA LAMPUR, S. S.
48.92	V79HX, HALIFAX, CANADA.
48.92	COCD, HAVANA, CUBA.
49.00	HJ3ABN, BOGOTA, COLOMBIA.
49.02	XEFT, VERA CRUZ, MEXICO.
49.05	PODEBRADY, CZECHOSLOVAKIA.
49.02	V2XE, WAYNE, N. J. Relays WABC.
49.10	YUC, CALCUTTA, INDIA.
49.14	H13C, LA ROMANA, D. R.
49.15	HJ4AB, MANIZALES, COLOMBIA.
49.18	BEJGRADE, YUGO-SLOVAKIA.
49.18	W3XAL, BOUND BROOK, N. J.
49.20	W9XF, CHICAGO, ILL.
49.20	ZTJ, JOHANNESBURG, AFRICA.
49.22	CRCN, BOWMANVILLE, CANADA.
49.25	HJ4ABE, MEDELLIN, COLOMBIA.
49.30	HJ5ABD, CALL, COLOMBIA.
49.31	VQ7LO, NAIROBI, AFRICA.
49.34	HJ4ABC, PERIERA, COLOMBIA.
49.34	W9XAA, CHICAGO, ILLINOIS.
49.34	HP5E, COLON, PANAMA.
49.34	Z1J, PENANG, S. S.
49.40	VE9CS, VANCOUVER, B. C.
49.42	YV7RMO, MARACAIBO, VENEZUELA.
49.42	OER2, VIENNA, AUSTRIA.
49.45	HJ4ABL, MANIZALES, COL.
49.50	ONY, SKAMLEBAEK, DENMARK.
49.50	W8XAL, CINCINNATI, OHIO.
49.55	HJ3ABD, BOGOTA, COLOMBIA.
49.59	H19B, SANTIAGO CITY, D. R.
49.65	H11ABG, BARRANQUILLA, COLOMBIA.
49.67	HJ4ABC, PERIERA, COLOMBIA.
49.67	W4NB, MIAMI BEACH, FLORIDA.
49.67	W1XAL, BOSTON, MASS.
49.75	VE9CA, CALGARY, CANADA.
49.75	HP5B, PANAMA, CITY.
49.80	HJ1ABJ, SANTA MARTA, COLOMBIA.
49.83	NRUW, VERA CRUZ, MEXICO.
49.83	PRA8, PERNAMBUCO, BRAZIL.
49.85	HJ3ABH, BOGOTA, COLOMBIA.
49.88	H13U, SANTIAGO, D. R.
49.90	COCO, HAVANA, CUBA.
49.92	ZHI, SINGAPORE.
49.96	CFCN, MONTREAL, CANADA.
49.96	HP5K, COLON, PANAMA.
50.00	RW59, MOSCOW, U.S.S.R.
50.00	XEBT, MEXICO CITY.
50.00	HJ1ABC, QUITO, COLOMBIA.
50.10	HJ2ABD, BUCARAMANGA, COL.
50.17	XEWI, MEXICO CITY.
50.26	HVJ, VATICAN CITY.
50.26	HJN, BOGOTA, COLOMBIA.
50.26	HJ2ABC, CUCUTA, COLOMBIA.
50.51	H12S, GUATEMALA CITY.
50.85	H128, PORT AU PRINCE, HAITI.
50.90	YV8RB, BARAQUISIMETO, VENEZUELA.
50.93	JIC, TAWIAN, JAPAN.
50.93	HCK, JUITO, ECUADOR.
51.11	HRN, TEGUCIGALPA, HONDURAS.
51.15	H1J1, SAN PEDRO DE MACORIS.
51.26	WOB, Lawrenceville, N. J.
51.28	YV5RMO, MARACAIBO, VENEZUELA.
51.50	T18PI, SAN JOSE, COSTA RICA.
51.50	HJA2, Bogota, Colombia.
51.72	YV2RC, CARACAS, VENEZUELA.
51.90	OAN4D, LIMA, PERU.
52.17	HJ4ABD, MEDELLIN, COLOMBIA.
52.26	TGS, GUATEMALA CITY.
52.45	YV10RSC, SAN CRISTOBAL, VENEZUELA.
52.97	CFU, Rossland, Canada.
54.74	T18HH, SAN ROMAN, COSTA RICA.
55.56	HJA-7, Cucuta, Colombia.
58.30	PNY, BANDOENG, JAVA.
59.08	WCN, Lawrenceville, N. J.
59.76	ZFA, Hamilton, Bermuda.
60.26	GBC, Rugby, England.
61.15	CGA8, Drummondville, Canada.
61.98	GDW, Rugby, England.
62.63	VE9BK, VANCOUVER, B. C.
63.13	WOO, Ocean Gate, N. J.
65.22	HC2ET, GUAYAQUIL, ECUADOR.
66.50	ZFS, Nassau, Bahamas.
67.87	to 73.17—Ships.
70.65	RV15, KHABAROVSK, U.S.S.R.
73.21	WND, Hialeah, Florida.
75.00	to 75.8—Amateurs.

Is There a Short Wave Club in my home town?

If you are really interested in short waves it is a good plan to become a member of a local radio society, and if you build the Hi-Q transmitters you will find that a society such as this can be of tremendous help to you in learning Morse, etc. There are hundreds of these societies all over the country. A few of them are mentioned below, together with the addresses to which you can write. Annual subscriptions vary from 5s. upwards, so that the membership of such clubs is well within everyone's reach.

ANGLO-AMERICAN RADIO & TELEVISION SOCIETY.

Kingshorpe, Willow Bank, Uxbridge.
THE BIDEFORD & DISTRICT SHORT WAVE CLUB.

Wistonia, Appledore, N. Devon.
BLACKPOOL SHORT WAVE CLUB.

The Wallace Hotel, North Promenade, Blackpool.
BLACKWOOD RADIO & TELEVISION CLUB.

3, Albion Road, Blackwood, Mond.
BRADFORD SHORT WAVE CLUB.

33, Napier Road, Thornbury, Bradford, Yorks.
CARDIFF & DISTRICT SHORT WAVE CLUB.

132, Clare Road, Cardiff.
CITY OF BELFAST Y.M.C.A. RADIO CLUB.

46, Victoria Avenue, Sydenham, Belfast, N. Ireland.
CITY & GUILDS (ENG.) COLLEGE RADIO SOCIETY.

Exhibition Road, South Kensington, London, S.W.7.
COVENTRY SHORT WAVE CLUB & AMATEUR RADIO SOCIETY.

Stevens Memorial Hall, New Buildings, Coventry.
CROYDON RADIO SOCIETY.

Maycross, Campden Road, South Croydon.
EASTBOURNE & DISTRICT RADIO SOCIETY.

74, Broderick Road, Hampton Park, Eastbourne.
HASTINGS & ST. LEONARDS RADIO SOCIETY.

59, Old Harrow Road, St. Leonards.
INTERNATIONAL SHORT WAVE CLUB.

100, Adams Gardens Estate, London, S.E.16.
INTERNATIONAL SHORT WAVE CLUB.

8, Upper Coucher, St. Peter Port.
INTERNATIONAL SHORT WAVE CLUB.

205, Braeside Avenue, Brighton.
INTERNATIONAL SHORT WAVE CLUB.

1, Elm Street, Middleton, Manchester.
LEICESTER AMATEUR RADIO SOCIETY.

88, Welford Road, Leicester.
MEDWAY AMATEUR TRANSMITTERS SOCIETY.

Trafalgar Road, Gillingham, Kent.
MIDDLAND AMATEUR RADIO SOCIETY.

Selwyn House, Chester Road, Sutton Coldfield.
NORTH MANCHESTER RADIO SOCIETY.

10, Dalton Avenue, Thatch Leach Lane, Whitefield, Nr. Manchester.
NORTH MIDDLESEX RADIO SOCIETY.

27, Middleton Park, Whetstone, N.20.
NEWPORT & DISTRICT RADIO CLUB.

2, Balmora Place, Newport, Mon.
PETERBOROUGH SHORT WAVE CLUB.

Peterborough.
RADIO, PHYSICAL & TELEVISION SOCIETY.

12, Nassau Road, Barnes, S.W.13.
RADIO TRANSMITTERS UNION (N. IRELAND).

5, Rathliffe Street, Donegall Pass, Belfast.
SALISBURY & DISTRICT SHORT WAVE CLUB.

85, Fisherton Street, Salisbury, Wilts.
SCOTTISH SHORT WAVE RADIO & TELEVISION LEAGUE.

67, Hope Street, Glasgow.
SHEFFIELD SHORT WAVE CLUB.

32, Moorvale Avenue, Sheffield, 10.
SOUTHEND & DISTRICT RADIO & SCIENTIFIC SOCIETY.

"Chippenhams," Eastern Avenue, Southend-on-Sea.
SOUTH LONDON TRANSMITTERS SOCIETY.

144, West Hill, Putney, S.W.16.
S.T.C. RADIO EXPERIMENTAL SOCIETY.

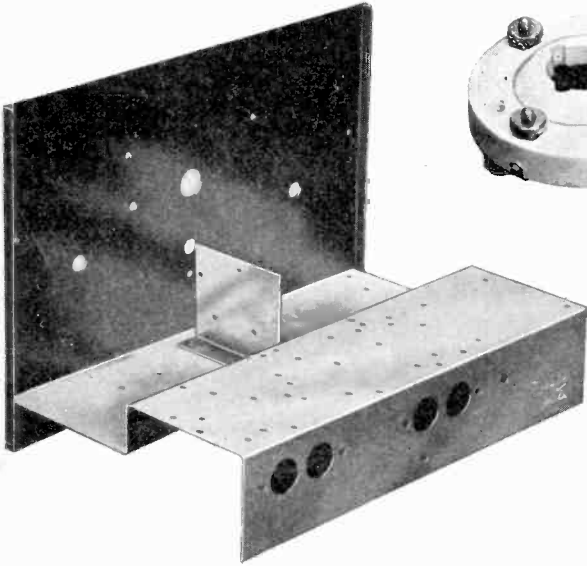
Training Battalion, R. Signals, Catterick Camp, Yorkshire.
SUTTON-IN-ASHFIELD RADIO SOCIETY.

15, Pelham Street, Sutton-in-Ashfield, Notts.
THAMES VALLEY AMATEUR RADIO & TELEVISION SOCIETY.

27, Baronsfield Road, St. Margarets-on-Thames, Middlesex.
TOTTENHAM SHORT WAVE CLUB.

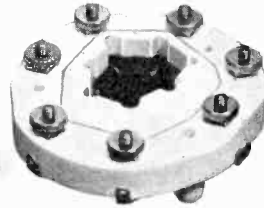
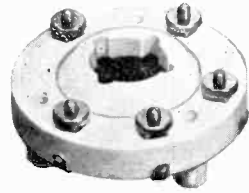
57, Pembury Road, Bruce Grove, Tottenham, N.17.
Messrs. Lissen Limited would be glad of the opportunity of demonstrating the new Hi-Q receivers and transmitters before any Short Wave Society. Application should be made to Messrs. Lissen Limited, Department D, 113 Charing Cross Road, London, W.C.2

Here are the New **LISSEN** Hi-Q Components



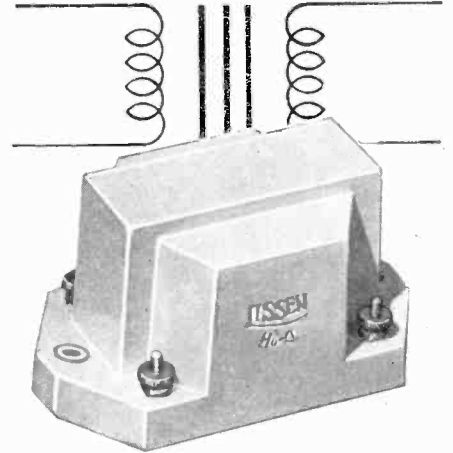
Hi-Q Chassis and Panel (including sub-panel and insulated terminal strips).—Specially designed for receivers using the new Lissen Hi-Q components. The steel front panel is finished in black cellulose, engraved and drilled. The base plate is so arranged that the H.F. portion of the receiver is completely screened from the L.F. end.

(Hi-Q-5660) 7/6



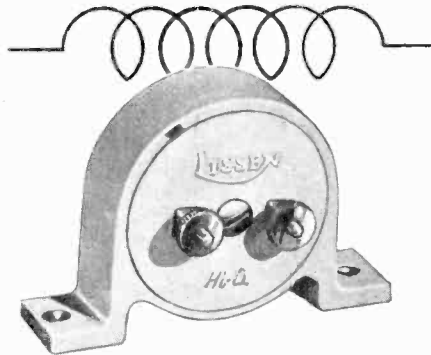
Hi-Q Low-Loss Valve Holders.—Special low-loss ceramic valve holders with double contact nickel springs. For baseboard mounting.

7-pin type ... (Hi-Q-5651) 2/3
5-pin type ... (Hi-Q-5650) 1/9



Hi-Q L.F. Transformers.—A compact L.F. transformer with a high-grade silicon iron core. Sealed in a white bakelite case. Ratio: 3.1.

(Hi-Q-5643) 6/-



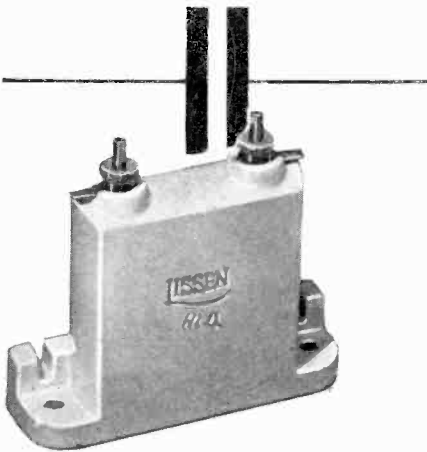
Hi-Q H.F. Choke.—A compact H.F. choke designed for use in anode and reaction circuits and encased in white bakelite.

(Hi-Q-5657) 2/6



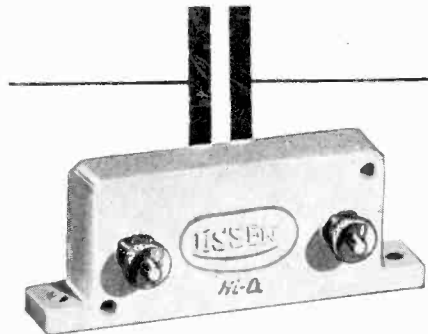
Hi-Q Terminal Sockets.—Sturdy terminals for either plug or spade connections.

(Hi-Q-5648) each 6d.



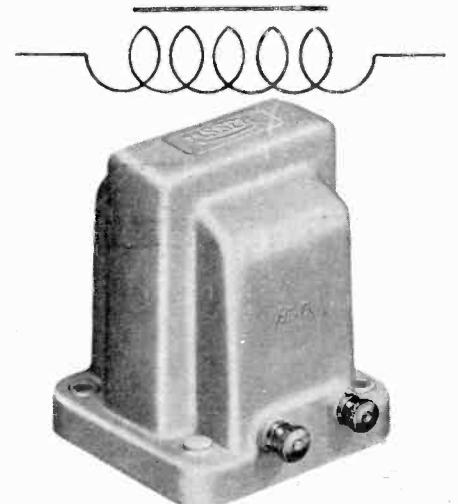
Hi-Q Mansbridge Type Fixed Condensers.—Sealed against moisture and varying climatic conditions in a white bakelite case. Suitable for use on any working voltage up to 250 D.C.

.1 mfd. (Hi-Q-5659) ... 1/9
1 mfd. (Hi-Q-5642) ... 2/6



Hi-Q Mica Fixed Condensers.—High insulation condensers, hermetically sealed in white bakelite cases.

.00005 mfd. (Hi-Q-5641)	} each 9d.
.0001 mfd. (Hi-Q-5638)	
.0002 mfd. (Hi-Q-5639)	
.0003 mfd. (Hi-Q-5640)	
.001 mfd. (Hi-Q-5635)	
.002 mfd. (Hi-Q-5636)	} each 1/-
.005 mfd. (Hi-Q-5637)	
.01 mfd. (Hi-Q-5658)	



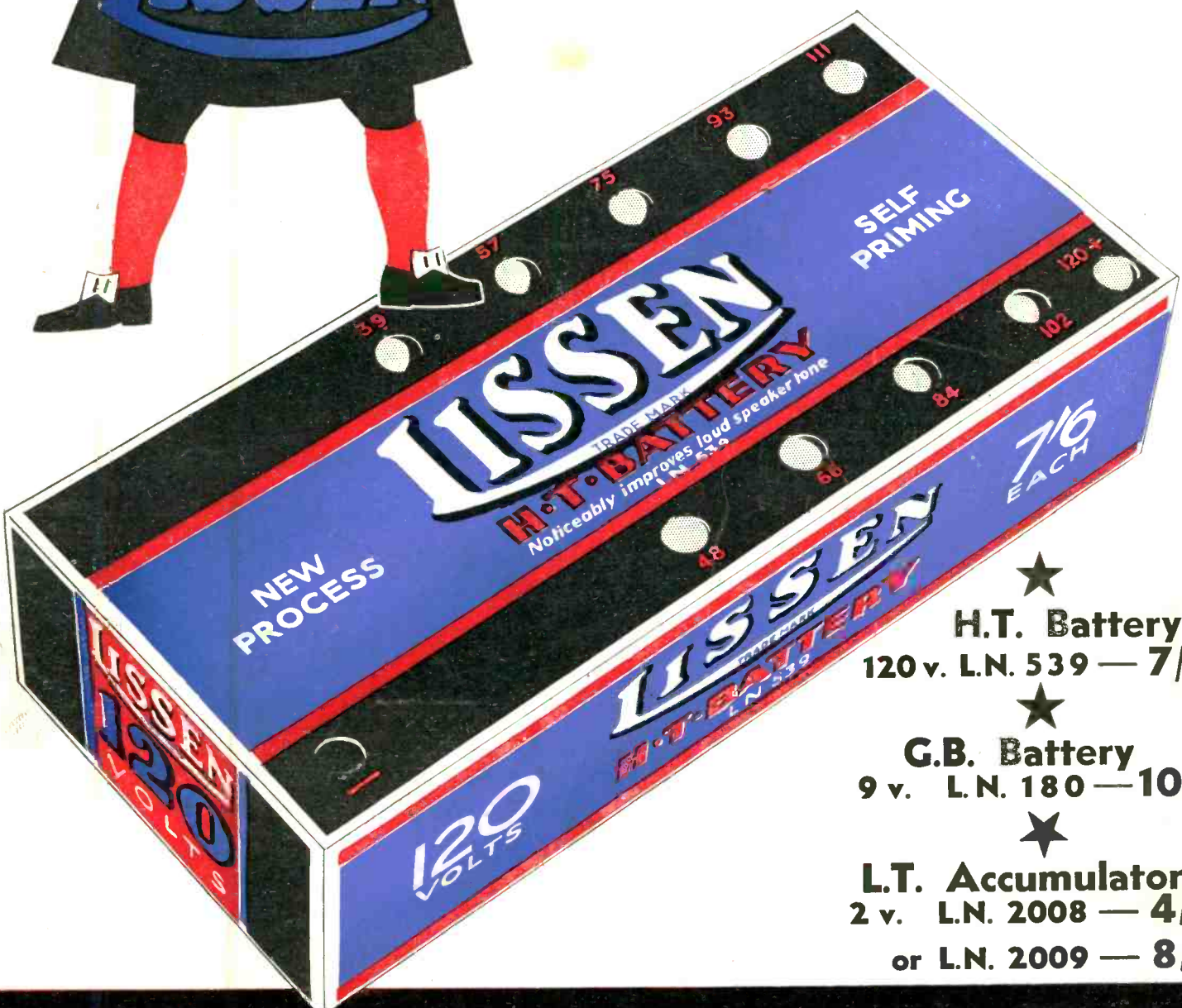
Hi-Q L.F. Choke.—A neat, compact little choke encased in white bakelite. Inductance: 80-40 henries at 0-20 milliamps.

(Hi-Q-5644) 7/6



Specified

for all **Hi-Q** Receivers and Transmitters



- ★
H.T. Battery
120 v. L.N. 539 — 7/6
- ★
G.B. Battery
9 v. L.N. 180 — 10d.
- ★
L.T. Accumulator
2 v. L.N. 2008 — 4/6
or L.N. 2009 — 8/6

H·T·BATTERIES