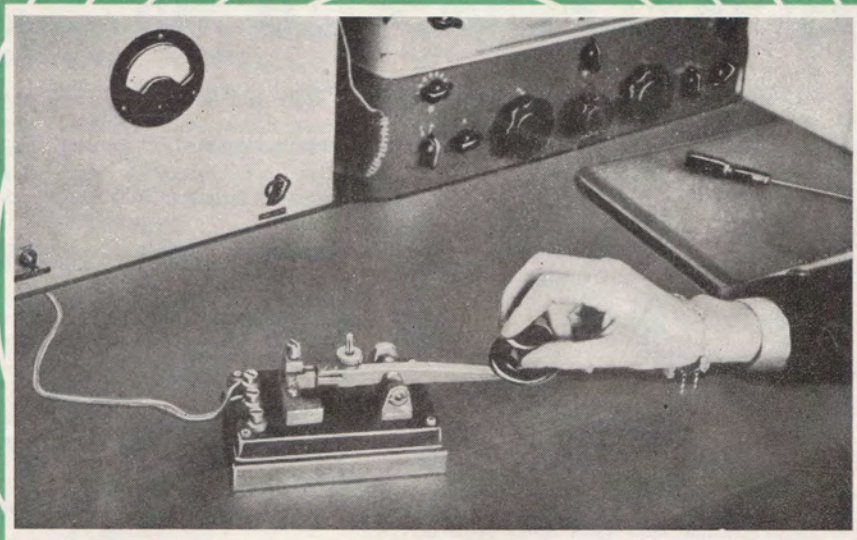




# THE MORSE CODE for RADIO AMATEURS

by Margaret Mills G3ACC



AN R. S. G. B. PUBLICATION

1/-

# IF YOU WANT A GOOD Microphone

WITHOUT HAVING TO PAY TOO MUCH FOR IT

*What about one of these ?*



## MIC 33

A crystal microphone that fits the hand perfectly. For the high quality public address and tape recording field, incorporating a specially designed acoustic filter giving a flat response from 30 to 7,000 c/s.

RETAIL PRICE £2.10.0



## MIC 35

A general purpose hand microphone of robust construction and convenient "handling" qualities with substantially flat response from 50 to 5,000 c/s. Suitable for recording apparatus, Public Address equipment, etc.

RETAIL PRICE £1.5.0



*always well ahead*

ACOS devices are protected by patents, patent applications and registered designs in Great Britain and abroad.

**COSMOCORD LIMITED - ELEANOR CROSS ROAD - WALTHAM CROSS - HERTS**

Telephone : Waltham Cross 5206

You get

# POWER GAIN PLUS!

10 - 15 - 20 M

Yes, 10, 15 and 20 metres with one beam and one feeder!

Get your Globemaster now and really enjoy working DX. Remember—  
an 807 equals an 813 with this new beam—power plus on all three bands!

For the benefit of personal callers and foreign visitors passing through London, a small stock of  
beams is carried by G4ZU at 94 Shirley Way, Croydon. Tel.: SPRING Park 4130.

with the **NEW Panda**

## LOBEMASTER Minibeam

In use throughout the world and available from stock in U.S.A., Canada,  
South Africa, Australia and New Zealand, as well as European Countries.

DELIVERY EX STOCK FOR ONE OR ONE HUNDRED ! TERMS AVAILABLE

**PANDA RADIO CO. LTD.**

16-18 HEYWOOD ROAD, CASTLETON, Nr. ROCHDALE  
Telephone Castleton (Rochdale) 57396

G4ZU  
Patent

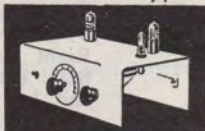
## CALLING S.W. ENTHUSIASTS

**COURSES FOR RADIO AMATEURS  
EXAMS AND P.M.G. 1st & 2nd CLASS  
CERTIFICATES (THEORY). ALSO GENERAL  
COURSES FOR S.W. LISTENERS**

Take our special postal courses which have been written  
by experts both in these subjects and in modern meth-  
ods of postal instruction. E.M.I. INSTITUTES are part of  
a world-wide electronics organisation, and many former  
students testify that our tuition was invaluable in en-  
suring their success in examinations.

### SPECIAL PRACTICAL KITS

are available as part of our Radio Courses. A typical  
course for beginners covers the design, construction and operation  
of a S.W. 2-valve receiver. This  
equipment is supplied upon enrol-  
ment, and remains your property.



### POST THIS COUPON TODAY

To E.M.I. INSTITUTES, Dept. 14 R, Grove Park Road, London, W.4.  
Please send, without obligation, your free Brochure.

Subject(s) of interest.....

Name.....

Age.....

Address.....

I.C.43

## NEW VALVES

We are a mail-order firm specialising in supplying  
most types of valves to the Radio Amateur at prices  
to suit his pocket. If you are not already one of  
our regular customers, we suggest you try us for  
prompt return-of-post service and value for money.  
Our supplies are obtained from Dealers bankrupt  
and trade surplus stocks and, in the case of the  
older types, from ex-W.D. sources. All valves are  
brand new, boxed and guaranteed to be in perfect  
working order. If the valve YOU want is not  
listed, then write us for a quote.

DET19 - 1/6	EF91 - 7/-	6BR7 - 9/6	6V6 - 7/6
EA50 - 1/-	EF92 - 5/6	6BW6 - 8/6	12A6 - 7/6
EB34 - 2/6	EL32 - 5/-	6G6 - 5/-	12AH7 - 4/6
EB91 - 6/6	EL33 - 8/6	6H6 - 2/6	12H6 - 2/6
EBC33 - 8/6	EY51 - 12/6	6J5 - 5/-	12J5 - 5/-
EBF80 - 9/-	KT66 - 10/6	6J7 - 7/6	12J7 - 7/6
ECC33 - 7/-	KT33C - 8/6	6K7 - 5/6	12K7 - 7/6
ECC35 - 7/-	KT44 - 7/6	6L6 - 10/-	12K8 - 10/6
EC52 - 7/-	Pen46 - 7/6	6N7 - 7/6	12Q7 - 8/6
ECC81 - 9/-	SP61 - 4/-	6Q7 - 8/6	76 - 3/6
ECH35 - 8/6	VP23 - 6/-	6SH7 - 6/-	80 - 10/6
ECH81 - 9/-	VU111 - 3/-	6S17 - 7/6	8012 - 6/-
ECL80 - 10/-	OZ4A - 6/6	6S7G - 7/6	5763 - 7/6
EF36 - 6/-	2X2 - 4/-	6SK7 - 7/6	8011 - 6/-
EF37A - 12/6	SU4 - 8/-	6SL7 - 6/6	9001 - 5/-
EF39 - 6/-	SZ4 - 8/6	6SN7 - 7/6	9002 - 5/-
EF50 - 5/-	6AM6 - 7/-	6SQ7GT - 7/6	9003 - 5/-
EF80 - 9/-	6BE6 - 8/-	6SS7 - 7/6	

**MATCHED PAIRS 6BW6 @ 17/6 pr., KT66 @ 22/- pr.,  
6V6 @ 16/6 pr., 807 @ 16/6 pr.**

**OBSELETE TYPES** Large range available, British, U.X., Side  
Contact, etc., S.A.E. enquiries. 5/- to £1 each.

**C. LAWRENCE (Dept. 5)**

156, CHIPSTEAD VALLEY ROAD, COULSDON, SURREY

Post and packing 6d. Cash with order. Postal only.

## Improving your Morse?

—THEN YOU'LL WANT THESE

**Morse Keys.** Air Ministry service type, precision built, back and front contacts, solid brass arm with insulated knob. 4/6 post 1/-.

**Morse Practice Sets.** Air Ministry type key on polished wood base with space for battery, heavy terminals and practice buzzer. In Bakelite case, wired ready for use 6/6, post 2/-.

**Single headphone** with double headband and cord 5/- post 1/-.

**Buzzers.** Practice Buzzer in Bakelite case 3/6 post 6d. Townsend High Note Wavemeter Buzzer 5/-.

**Headphones.** New surplus double Headphone with light wire headband and cord 12/6 post 2/-.

**The Lesdix Crystal Set** 1957 Model in neat black Bakelite case, 4"×3"×2", fitted tapped aerial coil, litz wound for long or short aerial, var. tuning condenser, germanium diode detector, transformer, plugs and sockets for aerial, earth and headphone connections. Supplied complete with double headphone 30/- post 2/-.

**Microphones.** G.P.O. Mike Button, 1" dia. carbon granules and Mica Diaphragm; ideal as lapel Mike 1/6 each post 6d. Transformer 2/6 post 9d. **G.P.O. Hand Mike** in moulded Bakelite case carbon inset, 4/6 post 1/-.

**Transformer** 2/6 post 9d.

**The Lesdix Table Mike.** 4" dia. crackle case with chrome rim, fitted best quality carbon mike and special mike transformer, terminals for battery and output. All mounted on Chrome base 4¼" dia. 17/6 post 2/6.

*We carry stocks of Transformers, Relays, Dynamos, Motors, Alternators, Converters, and will appreciate your enquiries.*

### Electradix Radios

DEPT. N : 214 QUEENSTOWN ROAD : BATTERSEA : S.W.8  
Telephone MACaulay 2159

**We buy!**

**We sell!**

**We part exchange!**

**We overhaul!**

COMMUNICATIONS RECEIVERS  
LABORATORY TEST EQUIPMENT  
TAPE RECORDERS  
AMPLIFYING EQUIPMENT  
VALVES, etc., etc.

*Always a fine selection of first class equipment*

### Radio Television and Instrument Service

CORRESPONDENCE :  
254 Grove Green Road  
Leytonstone, London, E.11

CALLERS AND GOODS :  
Ashville Old Hall  
Ashville Road  
Leytonstone, London, E.11

Telephone : LEYtonstone 4986

# DONT MISS THIS HANDBOOK

COMPLETELY REVISED

## INDISPENSABLE TO THE AMATEUR TRANSMITTER AND LISTENER



It contains all those details of information which the transmitter and SWL constantly require.

Right up-to-the-minute Amateur Band Prefix lists, both alphabetically and by Country, Zone Boundaries, Call Areas, Mileage Tables, QSL Bureaux, "Q" and "Z" Codes, WWV Skeds, and much other information, as well as a selection of maps of DX areas.

Price 3/-, postage 3d.

**DATA PUBLICATIONS LTD., 57 MAIDA VALE, LONDON, W.9**

Telephone : CUNningham 6141 (2 lines)

# MORSE FOR RADIO AMATEURS

## AN INTRODUCTION

THE author of this booklet, Margaret Mills, G3ACC — who was one of the first women to be commissioned during the 1939-45 War as a Signals Officer in the Women's Royal Air Force, and the first Englishwoman to be granted an Amateur Radio licence after the war — draws on many years of experience in teaching the Morse Code to produce a series of exercises which are unique in construction.

From time to time the cry is heard that the telegraphic method of communication is nearly "dead" and that in the near future all communication will be by means of telephony. Nothing could be further from the truth. Telegraphy is still the backbone of maritime communication and the number of commercial telegraph circuits increases yearly.

In the field of Amateur Radio a vast number of operators continue to use telegraphy; in fact many of them regard it as the most reliable method of communication. Expeditions in remote parts of the world maintain contact with civilisation by means of the Morse Code. Much of the "rare" DX heard on the amateur bands emanates from telegraphy stations.

A sound knowledge of the Morse Code is a great advantage, for none can say when that knowledge will be required. A feeble SOS from an aircraft wrecked in the deserts of North Africa, or from a ship marooned off the rocky coasts of Scotland, could pass unheeded in a world where few knew the Morse Code. Time after time radio amateurs have been able to bring succour to people in distress because they have possessed a knowledge of Morse.

It is an International requirement that every person holding an Amateur Radio licence shall have satisfied the Licence-issuing Authority of his country that he has a sound knowledge of the Morse Code. The British Post Office test is given at a speed of 12 w.p.m. and whilst to the newcomer this may sound very fast, it is really nothing of the kind. By careful attention to the advice given by Margaret Mills in this booklet, and above all by diligent use of the admirable exercises, the test should present no difficulties.

Slow Morse practice transmissions, organised by the Radio Society of Great Britain, are radiated daily on frequencies in the 1.8 Mc/s amateur band. Constant practice is essential if a good speed is to be achieved.

R.S.G.B. Headquarters will be glad to put any reader of this booklet in touch with his nearest R.S.G.B. Group or local Radio Society.

\*

\*

\*

The Society records its thanks to Margaret Mills for permitting some of the text of this booklet to be used in the preparation of the chapter "Learning Morse," in "A Guide to Amateur Radio" (Sixth Edition). The former was in the course of preparation when the "Guide" was published. J. C.

# LEARNING MORSE

By MARGARET MILLS, G3ACC

WHEN learning shorthand or, indeed, a foreign language, speed and proficiency are achieved when "translation" becomes automatic; so it is with the Morse Code. It is necessary to think of the letters as sounds or rhythmic groups of sounds, rather than as printed dots and dashes. Of course, dots and dashes have to be learnt for slip reading, but the object of this booklet is to set out a well tried method of learning Morse for sending and receiving telegraphic sound signals.

Think of each letter as a series of short and long sounds represented by *di's* and *dah's*; the letter A will be *di-dah*, with a very short *di* followed by an accentuated *dah* with no break or space between the two. The *dah* should be three times the length of the *di*. When a letter ends in a *di* this can be said or thought of as *dit* so that the letter C would sound *dah-di-dah-dit*, making sure that the final *di* is cut short.

The Morse Code must, of course, be memorised, and to some this may present no difficulty whatsoever, others, however, find it tedious, but with the aid of the exercises which follow, and a few minutes' practice each day even they will soon find they are making rapid progress. There are a number of ways of setting about memorising the letters. One method is to learn opposites and inversions but this is *not* recommended as it is liable to cause considerable confusion even at an advanced stage and, indeed, to experienced operators, as there will always remain in the mind a choice of two possibilities, and doubt naturally causes delay.

The exercises which follow should be studied in the order in which they are set out. The sequence has been devised from experience gained in teaching the Morse Code to students of all ages.

Individual letters should be sent (right from the start) at the speed which the student wishes to attain, equivalent to at least 12 w.p.m. The space between the letters can, however, be quite long at first; the space can be decreased gradually, keeping the letters the same speed, i.e., reduce the "thinking time."

Wherever possible the assistance of a really skilled operator should be sought. The exercises have all been prepared and timed so that instructors need devote no time to the preparation of lessons. Short periods of practice at frequent intervals are recommended. Fifteen minutes each day is far better than one hour every four days when commencing to learn the code. Practice time should, however, be lengthened as the student progresses.

Progress will probably be made in a series of jumps rather than at a smooth and consistent rate, and it is usual for students to remain capable of taking a particular speed for some time without any apparent progress. When this happens the student should drop all practice for at least three days, preferably a week, after which time usually he will find he can read a higher speed than before.

Concentrate on letters which present difficulty, automatically "translate" into sounds the letters which have been learnt as they are seen on hoardings, in newspapers, etc. A few minutes "translating" during a bus or train journey are minutes well spent.

Right from Lesson One avoid "thinking back," write down each letter immediately it is received and ignore completely those doubtful ones; do not guess, but leave a blank space and concentrate on the next letter. In attempting to "think back," more letters are lost than if the first doubtful one is ignored.

Write in longhand right from the start (this is not as easy as it sounds but it does avoid an awkward period when changing over from printing to writing), as it is obviously impossible to print at any great speed.

The temptation to commence sending at an early stage should be fought. The whole of the code should be memorised and a reasonable speed of reception should be reached before attempting to send. Faulty key manipulation by the beginner not only confuses the sounds but can also form bad keying habits which are difficult to break.

When able to receive at 8 or 10 w.p.m. the lessons should be sent in the same order as for receiving.

When able to send the alphabet correctly, Lesson Eight should be used for sending practice daily.

A good keying "stance" is important and a heavy P.O. type straight key is recommended. The key should be held lightly with the thumb below the knob and first and second fingers resting on top, as shown in the front cover illustration. The action should be from the wrist and the elbow should be at the same level as the thumb. The key should be fixed to the operating desk at a position most comfortable to the operator; this position will vary according to the type of key used.

To commence receiving signals some kind of sound must be produced, and although the simplest and cheapest method is a "buzzer" this is not recommended as the sound it produces is not like that received over the air; it is also liable to cause quite serious interference to television.

A circuit of a simple oscillator is given on page 18, but there are numerous other similar types to be found in the various Radio Handbooks, equally suitable for this purpose.

Either a loudspeaker or headphones can be used. The advantage of using a speaker is that the student learns to concentrate on the wanted signal. Room noises form part of the interference with which he will have to contend on the air.

Start to listen on the air immediately after Lesson One. There are many good commercial stations as well as R.S.G.B. slow Morse transmissions (times and frequencies of which are published in the R.S.G.B. Bulletin). After mastering Lesson One a few words will be recognised here and there in the text of a hand-sent commercial transmission. At least a few minutes every day should be spent in listening "on the air."

Most local Radio Clubs are willing to lend a hand to the newcomer to Amateur Radio and many do, in fact, run Morse classes. If local enquiries fail to produce results the name of the nearest R.S.G.B. Representative can be obtained from R.S.G.B. Headquarters, New Ruskin House, Little Russell Street, London, W.C.1.

# INTERNATIONAL MORSE CODE SIGNALS

## SPACING AND LENGTH OF SIGNAL :

1. A dash is equal to 3 dots.
2. The space between the signals which form the same letter is equal to 1 dot.
3. The space between two letters is equal to 3 dots.
4. The space between two words is equal to 5 dots.

## MORSE ALPHABET

A	•—	N	—•
B	—•••	O	— — —
C	—•—•	P	•—••
D	—••	Q	—•—•—
E	•	R	•—•
F	••—•	S	•••
G	—••	T	—
H	••••	U	••—
I	••	V	•••—
J	•—•—	W	•—•—
K	—•—	X	—••—
L	•—••	Y	—•—•—
M	— —	Z	—•••

## CONTINENTAL LETTERS

ä	•—•—	à or á	•—•••—	é	•••••
ñ	—••—	ö	—•••	ü	••—•—
ch	— — — —				

## NUMERALS

1	•—•—•—
2	••—•—•—
3	•••—•—
4	••••—
5	•••••
6	—•••••
7	—•—•••
8	—•—•••
9	—•—•—•
10	—•—•—•—

## PROCEDURE SIGNALS

Full stop	(.)	•—•••—
Comma	(,)	—••••—
Colon	(:)	— — —•••
Note of interrogation, or request for repetition of a transmission not understood	(?)	••—•••
Apostrophe	(')	•—•—•—•
Hyphen or dash	(-)	—••••—
Fraction bar	(/)	—••••
Brackets (before and after the words)	[ ( ) ]	—•—•—•—
Underline (before and after the words or part of sentence)		••—•••—
Double hyphen (=) (break sign)		—••••—
Understood		•••••
Error		••••••••
Cross or signal for the end of a telegram or of transmission		•—••••
Invitation to transmit		—•—
Wait		•—••••
End of work		•••••—
Commencing signal (to precede every transmission)		—•—••—
Separation signal in the transmission of fractional numbers between the whole number and the fraction and of groups consisting of letters and figures (between the groups of figures and letters)		•—•••—

See also procedure signals on page 18

## MORSE QUALIFICATIONS FOR POST OFFICE AMATEUR (SOUND) LICENCE

Applicants will normally be expected to pass the Post Office Morse test at 12 words per minute in accordance with the table below. Success in this test remains a valid qualification for the purposes of an Amateur (Sound) Licence or Amateur Radio Certificate for a period of 12 months from the date of the test.

In the receiving test each letter incorrectly received counts as one error.

Information regarding centres at which the test can be taken is contained in the Post Office circular, *How to become a Radio Amateur*.

Type	Length of Test	Duration of Test	Sending		Receiving
			Max. No. of Erasures	Max. No. of uncorrected errors	Max. No. of errors
Plain language	36 words	3 mins.	4	0	4
Figures	10 groups of 5 figures	1½ mins.	2	0	2

Sent in one minute = 12 words per minute.

HOUSE	MAUVE	SHAME
MATES	SHOUT	TEETH
STEAM	EAVES	STOUT
STAVE	TITHE	MAVIS

Sent in 3 minutes = 12 words per minute.

AS	HAT	OVEN	MUST	STOVE	STAVE
US	SAT	SHAM	HUSH	STOUT	SHAVE
AT	MAT	THAT	MUSE	SUAVE	TITHE
	EVA	SAVE	MESH	TEETH	EAVES
	HUT	OUST	SOOT	SHAME	SEAMS
	USE	HAVE	METE	VISIT	MAVIS
	VET	SHUT	TAME	MAUVE	MOUSE
		VOTE	VAST	HOUSE	STEAM
		MOAT		SHOUT	

### LESSON THREE

N --•

D ---••

B ----•••

N V A N B

A D N U B

D U B D V

U B V A B

N V A N U

B A B V U

N U D A N

A N B V A

V D B V A

N U D A V

N D B V A

A B D V A

N S O V N

E D H A D

T S B T S

A M S B M

V U O T H

N T V B E

N A E H I

U D S H U

T I D T I

D O U N V

A N E U D

V I B S U

V S B I V

D U E N A

V N U O D

I T D I T

U S H D U

I H E A I

E B V T N

H T O U V

M B S M A

S T B S T

D A H E D

N V O S N



ON	ODD	BOB	BUST	BAND	BENT	HOUND	ABBOT	AVENUE
DO	ADD	BUS	TONE	TIME	DONE	ABOUT	VOTED	TOMATO
BE	ODE	ANT	NOTE	DAVE	BONE	SOUND	BOAST	BOVINE
IN	AND	MOB	DOME	SENT	BOMB	ABOVE	DAUNT	BOTTOM
AN	TEA	NOT	DOTE	HAND	DENT	BEAST	BENDS	VETOED
	TON		BOAT	BEST	BASS	MOUND	NOTED	VESTED
			BOSS	BEAM				MOBBED
								TEASED

Sent in  $\frac{1}{2}$  minute = 12 words per minute.

ON	DO	BE	IN	AN	AT	TO	HE	IS	IT	US	AS	SO	ME	ON
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Sent in 1 minute = 12 words per minute.

AND	THE	TEA	TON	BOB	NOT	ANT	BUS	ODD	SAT
EVE	HAT	TOM	SHE	HIT	HIM	HOT	TIM	MET	SAD

Sent in 1 minute = 12 words per minute.

HOUND	BENDS	ABOUT	DAUNT	SOUND	VOTED
ABOVE	BEAST	ABBOT	BOAST	MOUND	NOTED

Sent in 3 minutes = 12 words per minute.

AVENUE	TOMATO	BOVINE	TEASED	MOBBED	VETOED	BOTTOM	VESTED
ABBOT	BOAST	VOTED	NOTED	HOUND	MOUND	ABOUT	
SOUND	ABOVE	BEND	DENT	BENT	BOMB	DONE	BONE
BAND	TIME	DANE	SENT	BEST	HAND	BASS	BUST
BEAM	TONE	BOSS	BOAT	NOTE	DOME	DOTE	BOB

# LESSON FOUR

A . - -      W . - - -      J . - - -

A N D W A	A N U E T	M E M E U
J W D J B	E W D V I	D J W T M
B W J B N	M I J B U	M D H O V
J A N A A	J M S A N	J E M U D
D W N D W	O H V D W	N W B A T
W A B N A	E U B J S	B A I M H
D J D A B	V N A T V	V B A N S
W D J N A	D W I M H	M J I A V
N A W N W	J B U S O	I M H T U
A D J B D	E A N V H	T E U N A
J N A W D	M T W J D	J M U S O
B D A J D	E U M E M	D V E O J

WE	HEW	WENT	JOVE	JOAN	JAUNT	DOBBIN
WIT	VOW	WISH	JANE	JUDO	JOUST	WANTED
JOE	VIE	WANT	JADE	WAVE	SHOWN	WISHED
JOB	JUT	WEST	JIVE	VANE	WHIST	WEEDED
JOT	OWN	JEST	MOWN	VAIN	WEEDS	SEEDED
JET	OWE	JOIN	TOWN	DUET	SWEDE	JESTED
WET	TOW	WHAT	VOWS	SUET	JUMBO	HAUNTED
VET		HEWN	JUNE	WHEN	OWNED	
		SEWN	JUTE	JOBS	TOWED	
		SOWN			WHOSE	
					JOINT	

Timed words sent in 1 minute = 12 words per minute.

DUET	JANE	TOWN	WAVE	VANE	WHAT	WENT	JOIN
SOWN	WEST	WHEN	JUNE	JOB	OWN	USE	VET

JOINT	OWNED	TOWED	WHIST	SHOWN	SWEDE
WHOSE	JAUNT	WEEDS	JOINS	WANTS	JUMBO

Sent in 3 minutes = 12 words per minute.

TOW	WIT	OWE	JOE	OWN	JOB
JUT	JOT	VIE	JET	VOW	WET
HEW	VOW	JIVE	WENT	JADE	WISH
WANT	JANE	WEST	JOVE	JOIN	SOWN
WHAT	SEWN	HEWN	MOWN	JOB	TOWN
WHEN	VOWS	SUET	JUNE	DUET	JUTE
VAIN	JOAN	VANE	JUDO	WHIST	JAUNT
WEDE	JOUST	WEED	SHOWN		JESTED

### LESSON FIVE

C — . . .

K — . . .

P . . . .

G — . . .

C A J W P  
 J K A K A  
 K J P W P  
 A G J G W  
 G A C J G  
 P W J A C  
 K A K J A  
 P W J W P  
 W G J G W  
 G A K A J  
 A K J G A  
 P A J W K

C E I S C  
 H K T K M  
 O A P U V  
 A G J G W  
 C N D B C  
 E I K I S  
 H T P M O  
 A G U G V  
 C N D B C  
 A K W K J  
 E I P S H  
 T G M G O

O M G T G  
 O H J C V  
 C S O C W  
 C M V C J  
 C H O A C  
 E K A G N  
 K T G N K  
 S K U G B  
 K M G B K  
 G S K B M  
 K N G T K  
 E K G N T

DOG	APT	PACK	BAKE	PATH	COAT	PASTE	GHOST
PAT	GOT	TACK	SAKE	PAWN	GOWN	DUTCH	WAGES
CAT	GET	JACK	WAKE	DUCK	JOKE	AWAKE	PAGES
ACT	COT	KATE	AGED	MUCH	WAGE	GUESS	GAUGE
APE	AGO	CAKE	GOAT	COMB	PAGE	GUEST	GAINS
AGE				COVE		COAST	AGAIN

Timed words sent in 1 minute = 12 words per minute.

PACK	PAGE	TACK	WAGE	MUCH
CAKE	PAWN	COMB	SAKE	DUCK
JACK	COVE	GOAT	GOWN	COAT

PASTE	DUTCH	AGAIN	GAUGE	AWAKE	GAINS
PAGES	GUESS	WAGES	GHOST	COAST	GUEST

Sent in 3 minutes = 12 words per minute.

DOG	PACK	PATH	PASTE	NAG	TACK	PAWN	DUTCH	JACK
DUCK	AWAKE	PAT	KATE	MUCH	GUESS	CAT	CAKE	COMB
GUEST	ACT	BAKE	COVE	COAST	APE	SAKE	COAT	GHOST
AGE	WAKE	GOWN	WAGES	APT	AGED	JOKE	PAGES	GOT
COAT	WAGE	GAUGE	GET	PAGE	GAINS	COT	AGAIN	AGO

## LESSON SIX

R .-.-.

L .-.-.-

Q -.-.-.

Z -.-.-.

C K P G R

L Q Z K P

Z G K P Q

L P K G L

R G K C P

P L Q C K

Z K L C Q

P Z K C K

P K Z K C

L C Q G R

Q C Z R L

Q L P Z C

Q A R E L

C Z M U D

J K P G Z

T Q V B L

W S K C J

G H P M T

B D N J W

O T M G P

K C Z R C

Z G H O V

B J K Q L

R C P G K

W P C V L

J G R O Q

N M Z H K

D T C G J

B O K Z B

W J B N D

G Q O R G

B Z K O B

C J H Z W

K C Z C R

G W T J C

L E Q R L

LONG	RITZ	ZEPP	QUEEN	REQUIRE	PRESENT
LAST	RATE	ZEAL	QUITE	REQUEST	PROMISE
LOST	ROTA	ZERO	QUEST	RELATE	PROGRESS
LATE	REAL	ZONE	QUIET	REGALE	PROPERLY
LOOM	ROAN	ZOO	QUOTE	RESET	PROSPECT
LIKE	RAVE	ZEBRA	QUEER	REPEAL	PROGRAMME
LOOK	ROLL			REPEAT	PRESS
LINE	RING			REPENT	PRESET
LEAP	REST			REPAST	PROVE

Sent in 1 minute = 12 words per minute.

PRESENT	RITZ	QUEEN	LEAP	QUEER	PROVE	REST
ZEBRA	QUEST	REPAST	LONG	ZONE	WE	

PROGRESS	ROAN	ZEAL	QUIET	REQUIRE	RAVE	
LOOK	ROLL	REPEAL	ZEPP	QUOTE	QUEEN	

Sent in 4 minutes = 12 words per minute.

PRESENT	REQUIRE	PROMISE	REQUEST	QUEEN	QUITE	PROGRESS
RELATE	QUEST	PROPERLY	REGALE	QUIET	PROSPECT	RESET
QUOTE	PROGRAMME	REPEAT	QUEER	PRESS	REPEAL	
REPENT	PROVE	REPAST	QUEEN	ZEPP	RITZ	QUITE
ZEAL	RATE	QUEST	ZERO	ROTA	QUIET	ZONE
REAL	QUOTE	ZOO	ROAN	QUEER	RAVE	ZEBRA
ROLL	RING	REST	LIKE	LAST		

# LESSON SEVEN

F . . . .

X - . . -

Y - . . - -

R L Q Z X

A Z Q J I

Q W E R T

Q Z F X Y

G B Y P H

Y U I O P

Y X F Z Q

A F C X O

A S D F G

L R Z Q Y

H B E D W

H J K L Z

R Q Y L R

J I C N E

X C V B N

Z X Q L R

K G M F V

M P O I U

Y X F Z Q

N L G U B

Y T R E W

Z X Q L R

K H T B A

Q L K J H

L R Q Y Z

I S D C M

G F D S A

X Y Z Q L

R O F R E

M N B V C

R L F Z Q

T U Q P L

X Z T Y U

Y F X Z Q

C A V Z S

Q P A L Z

YAGI

YACHT

FIRST

FATE

LAZY

YEAR

YEAST

FAULT

FENCE

HAZY

YARD

YIELD

FAST

FERRY

CRAZY

YARN

YOURS

FEAST

FIGURE

MERRY

YAWL

YOUTH

FLIGHT

PIXEY

BERRY

YAWN

YEOMAN

FISH

EXPIRE

TERRY

EXIT

MIXTURE

WAXEN

EXPLODE

EXHIBITION

SIX

TEXTURE

EXCLAIM

EXPRESS

HEXAGON

VIXEN

Each passage sent in 3 minutes = 12 words per minute.

“ That way the noise is. Tyrant, show thy face !  
If thou be'st slain with no stroke of mine,  
My wife and children's ghosts will haunt me still.  
I cannot strike at wretched kerns, whose arms  
Are hired to bear their staves: . . . .”

“ . . . either thou, Macbeth,  
Or else my sword with an unbatter'd edge  
I sheathe again undeeded. There thou shouldst be:  
By this great clatter, one of greatest note  
Seems bruited. Let me find him, fortune!  
And more I beg not.”

“ . . . . but why  
Stands Macbeth thus amazedly?  
Come, sisters, cheer we up his sprites,  
And show the best of our delights:  
I'll charm the air to give a sound,  
While you perform your antic round;  
That this great king may kindly say ”

“ . . . . cauldron boil and bake;  
Eye of newt and toe of frog,  
Wool of bat and tongue of dog,  
Adder's fork and blind-worm's sting,  
Lizard's leg and howlet's wing,  
For a charm of powerful trouble,  
Like a hell-broth boil and bubble.”

Each passage sent in 3 minutes = 14 words per minute.

“ Had I been seized by a hungry lion  
I would have been a breakfast to the beast,  
Rather than have false Proteus rescue me.  
O! heaven be judge how I love Valentine,  
Whose life's as tender to me as my soul,  
And full as much — for more there cannot be —  
I do detest false . . . .”

“ How use doth breed a habit in a man!  
This shadowy desert, unfrequented woods,  
I better brook than flourishing peopled towns.  
Here can I sit alone, unseen of any,  
And to the nightingale's complaining notes  
Tune my distresses and record my woes.  
O thou that . . . .”

Passage sent in 3 minutes = 16 words per minute.

“ I saw him put down the other day with an ordinary fool that has no more brain than a stone.  
Look you now he's out of his guard already; unless you laugh and minister occasion to him,  
he is gagged. I protest, I take these wise men, that crow so at these set kind of fools, no  
better than the fools' zanies.”

## LESSON EIGHT

### Special Practice Sending Groups

It will be noted that all these groups, if sent badly, could be read to have more than one meaning; for example M I Z M I could be read as Z Z Z if the letters are incorrectly formed. For this reason great attention should be given to sending them.

M I Z M I	A I L A I	A O I A O	O I 8 I O
N M Y N M	I T U I T	W M I W M	M D 8 M D
D T X D T	A N P A N	J T I J T	M G 9 M G
S T V S T	T U X T U	I O 2 I O	O N 9 N O
E I S I E	A E R A E	U M 2 U M	M O Ø M O
E O J E O	T A K T A	S M 3 S M	
N N C N N	W E P W E	V T 3 V T	
T I D T I	U E F U E	H T 4 H T	
T S B T S	E M W E M	M S 7 M S	
M E G M E	T K Q T K	T B 7 T B	
G T Q G T	T W Y T W	G E 7 G E	
T E N T E	K E C K E		

---

## LESSON NINE

### FIGURES

Each block sent in  $1\frac{1}{2}$  minutes.

7 5 7 3 5	1 9 2 8 3	1 5 6 9 1	0 5 1 4 6
0 9 1 2 3	7 4 6 5 0	6 2 4 7 0	7 9 4 2 5
5 7 5 3 4	2 5 3 7 4	0 7 3 3 8	1 8 8 3 3
8 6 3 4 8	5 0 1 9 3	5 1 8 4 2	4 2 9 7 2
7 4 7 2 5	3 2 9 4 7	1 6 2 9 5	6 5 3 0 6
1 0 1 4 3	9 1 5 1 2	5 2 7 3 6	7 2 6 9 1
5 3 7 5 7	4 3 4 3 9	0 7 3 8 4	2 8 3 7 0
1 2 7 6 9	6 7 7 8 1	6 9 8 4 9	6 3 9 4 8
1 4 3 7 0	8 6 8 6 5	3 5 8 9 1	9 7 4 0 5
8 2 6 8 3	0 8 0 2 6	1 2 4 7 0	1 0 8 5 1



Each block sent in  $1\frac{1}{2}$  minutes.

1 5 9 3 7	2 6 9 4 3	3 7 1 5 9	4 8 2 6 0
2 6 0 4 8	3 0 1 5 8	4 4 2 0 0	5 9 3 7 1
9 5 1 7 3	8 4 0 6 2	7 3 9 5 1	6 2 8 4 0
0 9 6 5 2	1 2 5 6 1	8 7 4 3 9	3 4 7 8 0
3 4 2 1 0	5 8 2 3 0	1 4 3 7 8	9 6 5 3 6
6 2 0 4 1	9 3 4 8 2	8 2 1 0 2	1 0 3 6 7
4 7 3 2 9	5 6 3 2 4	5 9 8 4 7	2 5 4 5 8
5 3 4 6 4	4 9 6 7 3	2 5 5 8 3	7 3 9 9 3
7 1 7 8 5	7 6 7 9 5	6 6 7 2 4	8 6 5 0 4
6 8 5 9 6	0 1 8 1 7	9 4 0 1 5	0 7 1 2 9

#### ABBREVIATIONS COMMONLY USED BY RADIO AMATEURS

AA	All after	GE	Good evening	RPT	Repeat	U	You
AB	All before	GG	Going	RPRT	Report	UR	Your
AGN	Again	GM	Good morning	RX	Receiver	URS	Yours
ANT	Antenna	GUD	Good			VY	Very
ABT	About	HI	Laughter	SA	Say	WID	With
B4	Before	HPE	Hope	SED	Said	WL	Will
CUAGN	See you again	HR	Here, hear	SRI	Sorry	WX	Weather
CUL	See you later	HVE	Have	SUM	Some	XYL	Wife
CUD	Could	HW	How			YF	Wife
DE	From	MNI	Many	THRO	Through	YL	Young lady
ES	And	MSG	Message	TKS	Thanks	73	Best wishes
FB	Fine business	ND	Nothing doing	TMW	Tomorrow	88	Love and Kisses
FER	For	NW	Now	TNX	Thanks		
GA	Good afternoon	OC	Old chap	TT	That		
GA	Go ahead	OG	Old girl	TU	Thank you		
GB	Goodbye	OM	Old man				
		OP	Operator				

There are, of course, numerous spelling abbreviations, such as "NITE" for Night and "THORT" for Thought, etc., but these are mostly self-evident.

## PROCEDURE SIGNALS USED BY RADIO AMATEURS

<p>CT Commence traffic (sent at the commencement of each transmission).</p> <p>AR K End of transmission, with invitation to transmit</p> <p>AR VA End of transmission finally</p> <p>AS Wait</p> <p>BK Break</p> <p>K Go ahead (invitation to transmit)</p> <p>R Received</p>	<p>*KN Invitation for one specified station <i>only</i> to transmit</p> <p>CL This station is closing down</p> <p>*The use of KN should prevent any operator calling a station already in contact with another one. Over-enthusiastic DX operators often hear the "tail end" of an "over" of a very rare station signing for example— de AC4ZZ AC4ZZ K; they may then call him in the hope that he was sending "CQ", causing unnecessary interference, which the use of KN should help to overcome.</p>
---	---

### EXAMPLE OF A TYPICAL QSO

CT G5RV G5RV G5RV de G3ACC G3ACC G3ACC  
 Ge om es tks fer call = vy psed to meet u fer first time =  
 ur sigs rst 579 imi 579 hr QTH is Dulwich imi Dulwich  
 S.E. London = pse hw? G5RV G5RV G5RV de G3ACC  
 G3ACC G3ACC AR K

G3ACC G3ACC G3ACC de G5RV G5RV G5RV R  
 solid og = ge es mni tks fer fb rpt = ur sigs hr also fb rst  
 579 imi 579 hr in Chelmsford imi Chelmsford Essex =  
 Am using hr ECO FD PA running abt 50 watts = Rx  
 AR 88 = Ant half wave = Wx hr vy warm sunny wid  
 nice cool breeze = Name hr Louis so hw nw?

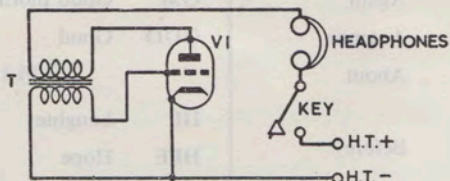
G3ACC G3ACC G3ACC de G5RV G5RV G5RV AR K

G5RV G5RV G5RV de G3ACC G3ACC G3ACC R  
 solid Louis es tks fer gen on rig there ur sure putting in fb  
 sig hr in South London cutting thro the local QRM = Rig  
 hr ECO FD PA running abt 30 watts to an 807 = using  
 dipole es Rx is AR 77E = Wx hr rather cloudy but warm  
 some QRN but not too bad HI = Well Louis hr abt QRU  
 nw so will sa mni tks fer a fb QSO hpe cuagn vy sn best of  
 luck es dx 73 cheerio AR G5RV G5RV G5RV de G3ACC  
 G3ACC G3ACC AR VA

G3ACC G3ACC G3ACC de G5RV G5RV G5RV R all  
 ok thro QRM = mni tks fer fb QSO will look fwd to  
 meeting agn sn = Hr nw also QRU so will sa cheerio  
 best of luck es dx vy 73 AR G3ACC G3ACC G3ACC  
 de G5RV G5RV G5RV AR VA

### A SIMPLE VALVE OSCILLATOR

A simple valve oscillator circuit, which produces a note in headphones similar to that heard from a radio receiver, is illustrated alongside. The transformer T can be any type of intervalve transformer and V almost any type of triode valve. If the circuit does not oscillate the connections to one side of the transformer should be reversed. The primary is in the anode and the secondary in the grid circuit of the valve.



Circuit diagram of a Simple Valve Oscillator.

## For your Bookshelf and Shack . . .

### R.S.G.B. PUBLICATIONS

A Guide to Amateur Radio (Sixth Edition)	Price 2/6 (by post 2/10)
R.S.G.B. Amateur Radio Call Book	Price 2/6 (by post 2/10)
Amateur Radio Certificates and Awards	Price 2/6 (by post 2/10)
★ Valve Technique - - - -	Price 3/6
★ Simple Transmitting Equipment - - -	Price 2/-
★ Transmitter Interference - - -	Price 1/3
V.H.F. Technique - - - -	Price 1/-

Special Offer. Members may purchase the set of four booklets for 4/6 (post paid)

### AMERICAN PUBLICATIONS

Orders for the following American publications can only be accepted from residents in the United Kingdom and British Empire. Prices quoted include cost of postage and packing.

*Radio Amateur's Handbook - - -	34/-
(A.R.R.L.)	
*Mobile Manual for Radio Amateurs - -	24/6
(A.R.R.L.)	
*Antenna Book, 7th Edition - - -	19/-
(A.R.R.L.)	
*CQ Mobile Handbook - - -	24/-
(Cowan Publishing Corpn.)	
*Single Sideband for the Amateur - - -	14/-
(A.R.R.L.)	
*Single Sideband Techniques - - -	13/-
(Cowan Publishing Corpn.)	
*Hints and Kinks (Volume V) - - -	10/-
(A.R.R.L.)	
*Course in Radio Fundamentals - - -	10/-
(A.R.R.L.)	
*How to become a Radio Amateur - - -	4/6
(A.R.R.L.)	
*Learning the Radiotelegraph Code - - -	4/6
(A.R.R.L.)	
QST (A.R.R.L.) Yearly Subscription - - -	36/-
CQ (Cowan Publishing Corpn.) Yearly	
Subscription - - - -	44/-

\* Usually available from stock. All prices for American publications are subject to alteration without notice.

#### R.S.G.B. MEMBERS ONLY

Society Tie (all silk) - - - -	16/6
Blazer Badge - - - -	7/-
Car Badge (R.S.G.B. Emblem) - - -	5/-
Car Badge (R.S.G.B. Emblem with Call-sign) (5 characters)† - - -	6/6
Car Badge (De Luxe Type)† - - -	17/6
Call-sign Lapel Badges (5 characters)† - - -	6/-
Rubber Stamp (R.S.G.B. Emblem) - - -	7/6
Stereo Block (R.S.G.B. Emblem) - - -	5/6
Miniature Pennants (R.S.G.B.)	
10" long for bicycle - - - -	5/9
12" long for car - - - -	7/9
Headed Notepaper (R.S.G.B.) per 100 sheets - - - -	6/6

† Delivery 3-5 weeks.

#### MISCELLANEOUS ITEMS

Two Metre Zone Map - - - -	6d.
R.A.E.N. Message Pads - - - -	2/-
Log Books (Webbs') - - - -	4/-

All prices include postage unless otherwise stated.

R.S.G.B. Sales Dept., New Ruskin House,  
Little Russell Street, London, W.C.1.

# SHORT WAVE MAGAZINE

NOW IN ITS 14th VOLUME

Covers the whole field of Amateur Radio, with regular features of interest to the C.W. operator on the amateur bands.

56 pages every month, including practical articles on the design and construction of equipment of every kind for amateur operation, from Top Band to the VHF's. Regular features on DX results and activity. Coverage of all important events.

SHORT WAVE MAGAZINE, Is Informed, Authoritative and Independent. It circulates in nearly 60 countries. Its articles are reprinted in many foreign periodicals.

Price 2s. 6d. or by subscription 30s. a year (\$4.00 U.S.) post free home and overseas.

Managing Editor:

Austin Forsyth, O.B.E. (G6FO)

## ALL FOR THE RADIO AMATEUR

SHORT WAVE MAGAZINE, Ltd.,  
55 Victoria Street,  
London, S.W.1.  
(ABBey 5341/2)

(Specimen Copy 2s. 8d. on request.)

# Radio Society of Great Britain

PATRON: H.R.H. THE DUKE OF EDINBURGH, K.G.

## APPLICATION FOR CORPORATE MEMBERSHIP

To the Secretary,  
Radio Society of Great Britain  
New Ruskin House, Little Russell Street,  
London, W.C.1.

SIR,

I hereby apply for election as a Corporate Member of the Society and enclose herewith a remittance for the appropriate amount of my first annual subscription.

Signed .....

### PERSONAL DETAILS TO BE COMPLETED BY THE APPLICANT (BLOCK CAPITALS)

Surname .....

Christian Names (in full) .....

Address for all correspondence .....

Nationality ..... Age (if under 21) .....

Current Call-sign (if any) ..... Previous Call-sign(s) (if any) .....

Details of previous membership (if any) .....

### DETAILS TO BE COMPLETED BY THE TWO PROPOSERS\*

I wish to propose ..... for Corporate Membership.

Name (Block letters) .....

Address (Block letters) .....

Call-sign (or B.R.S. No.) .....

Signed .....

I wish to propose ..... for Corporate Membership.

Name (Block letters) .....

Address (Block letters) .....

Call-sign (or B.R.S. No.) .....

Signed .....

### UNDERTAKING TO BE SIGNED BY APPLICANT

I, the undersigned, agree that in the event of my election to membership of RADIO SOCIETY OF GREAT BRITAIN I will abide by and observe the Rules, Regulations and Articles of Association of the Society and that in the event of my resignation from the Society given under my hand in writing, I shall after the payment of all arrears which may be due by me at that period, be free from this obligation. I further agree to observe strictly the terms of any licence issued to me by the responsible authorities to operate transmitting or receiving apparatus.

Witness my hand this ..... day of ..... 19..... (signed) .....

### FOR OFFICE USE ONLY

Approved by Council .....

B.R.S. Number Issued ..... First Subscription paid .....

\*If the applicant is not acquainted with two Corporate Members willing to propose him for election he may submit two suitable references in writing from persons of standing.

## AN INVITATION

If you are not a member of the R.S.G.B. write for details.

R.S.G.B. members receive a copy of the R.S.G.B. Bulletin each month. Packed with up-to-date information on all aspects of Amateur Radio.

Other privileges include free use of the R.S.G.B. QSL Bureau, the largest in the world.

### ANNUAL SUBSCRIPTION RATES :

Home Corporate Members	-	-	27/6
Overseas Corporate Members	-	-	21/-
Associates (under 21)	-	-	15/-

**R.S.G.B. NEW RUSKIN HOUSE**  
Little Russell Street : London, W.C.1

## Morse Code operating . . .

The essential qualification of a Radio Officer at sea, in the air or ashore is EXPERT MORSE OPERATING. The Candler method of teaching Code either from "scratch" or to get over that 20 w.p.m. "hump" to the classic 30 or more w.p.m. is known the world over. Thousands of Radio Officers owe their present high position of responsibility to their diligent study of the Walter H. Candler System of Morse Training.

45 years of teaching Morse Code is proof of the efficiency of this system.

## . . . as a PROFESSION

Careful thought is given by our Instructional Staff to individual problems, and provided you study diligently and follow our advice success in reaching the qualification you desire is assured — we guarantee this or refund your fees.

*Morse Key and Buzzer Sets of good quality on polished wood base, 15/- to Candler Students only.*

The Press carries an ever increasing number of advertisements of positions vacant at good salaries for competent Operators.

Send 2½d. stamp for Payment Plans and Full Details of all Courses

## CANDLER SYSTEM CO.

(Dept. M) 52b ABINGDON ROAD, LONDON, W.8.  
Candler System Company, Denver, Colorado, U.S.A.

## This new Panda "CUB" Transmitter gives you ALL you want.

Top band to ten . . . FONE or C.W. with the latest standard Panda V.F.O. and incorporating all the best T.V.I. proofing technique . . . just needs a mike or key to go straight on the air.

Write today for FULL details.

DELIVERY IS NOW FROM STOCK.



TERMS still available from only £13 deposit.

## PANDA RADIO CO. LTD.

16-18 Heywood Road, Castleton, near Rochdale

Tel: 57396 Castleton (Rochdale).

Grams: and Cables: 'Panda Rochdale'

AMERICAN SWEETENING CORP.  
100 NEW ROSEMOUNT  
LITTLE ROCK, ARKANSAS

AMERICAN SWEETENING CORP.  
100 NEW ROSEMOUNT  
LITTLE ROCK, ARKANSAS

AMERICAN SWEETENING CORP.  
100 NEW ROSEMOUNT  
LITTLE ROCK, ARKANSAS



AMERICAN SWEETENING CORP.  
100 NEW ROSEMOUNT  
LITTLE ROCK, ARKANSAS

AMERICAN SWEETENING CORP.  
100 NEW ROSEMOUNT  
LITTLE ROCK, ARKANSAS