

# Everything you ever wanted to know about Morse Code, but were afraid to ask

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# Topics

- What is Morse Code
- What is CW
- Why use CW
- Learning Morse Code
- Morse Code Keys
- Making a CW Contact

# What is Morse Code?

**Morse code is a method of transmitting text information as a series of on-off tones, lights, or clicks that can be directly understood by a skilled listener without special equipment.**

## International Morse Code

1. The length of a dot is one unit.
2. A dash is three units.
3. The space between parts of the same letter is one unit.
4. The space between letters is three units.
5. The space between words is seven units.

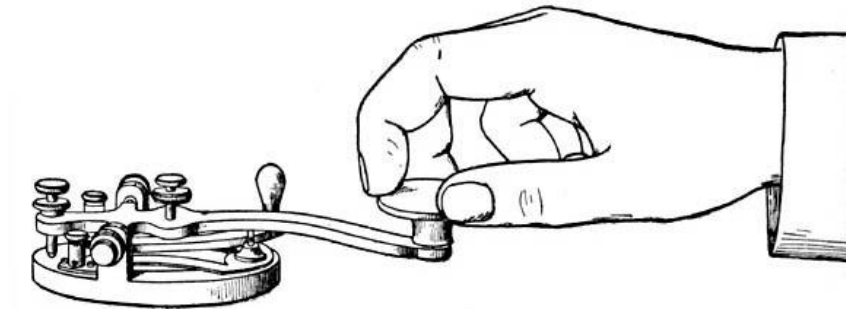
A	● —
B	— ● ● ●
C	— ● — ●
D	— ● ●
E	●
F	● ● — ●
G	— — ●
H	● ● ● ●
I	● ●
J	● — — —
K	— ● —
L	● — ● ●
M	— —
N	— ●
O	— — —
P	● — — ●
Q	— — ● —
R	● — ●
S	● ● ●
T	—

U	● ● —
V	● ● ● —
W	● — —
X	— ● ● —
Y	— ● — —
Z	— — ● ●

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

# What is CW?

**Continuous waveform (CW) is the name given to an early method of radio transmission, in which a carrier wave is switched on and off. Information is carried in the varying duration of the on and off periods of the signal, for example by Morse code in early radio.**



# Why use CW?

- Easy to use
- More efficient than SSB
- International language (Q codes / Ham Chat)



# Q Codes / Ham Chat

## Q Codes

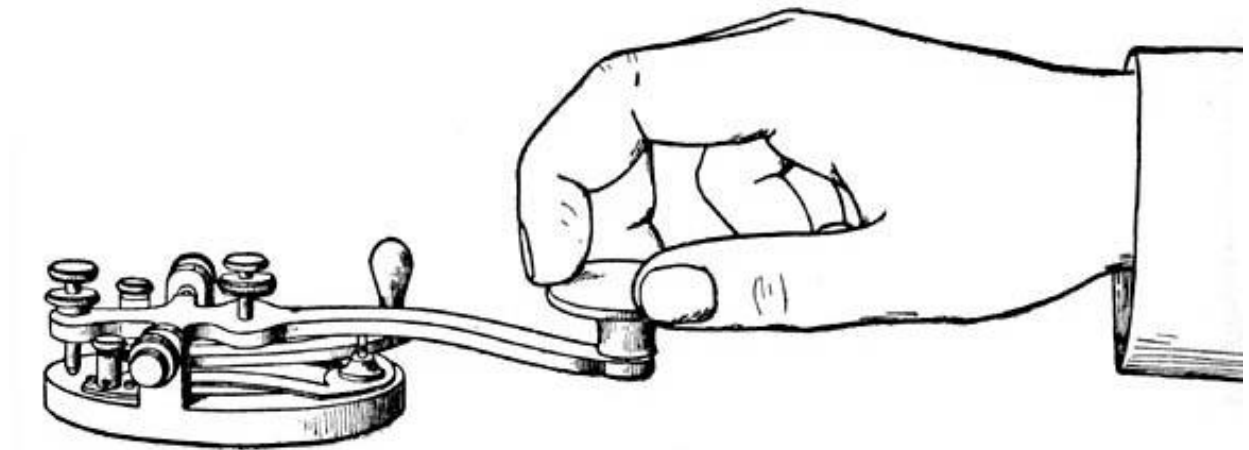
QRK	signal readability
QRL	I am busy
QRM	man made interference
QRN	atmospheric interference
QRO	increase power
QRP	decrease power
QRQ	send faster
QRS	send slower
QRT	stop sending
QRU	nil traffic
QRV	I am ready
QRX	close down
QRZ	who is calling
QSA	signal strength
QSB	signal fading
QSD	defective keying
QSL	acknowledge receipt
QSO	communicate with
QSV	send a series of vv's
QSY	change frequency
QTC	I have traffic
QTH	location
QTR	time

## Ham Chat

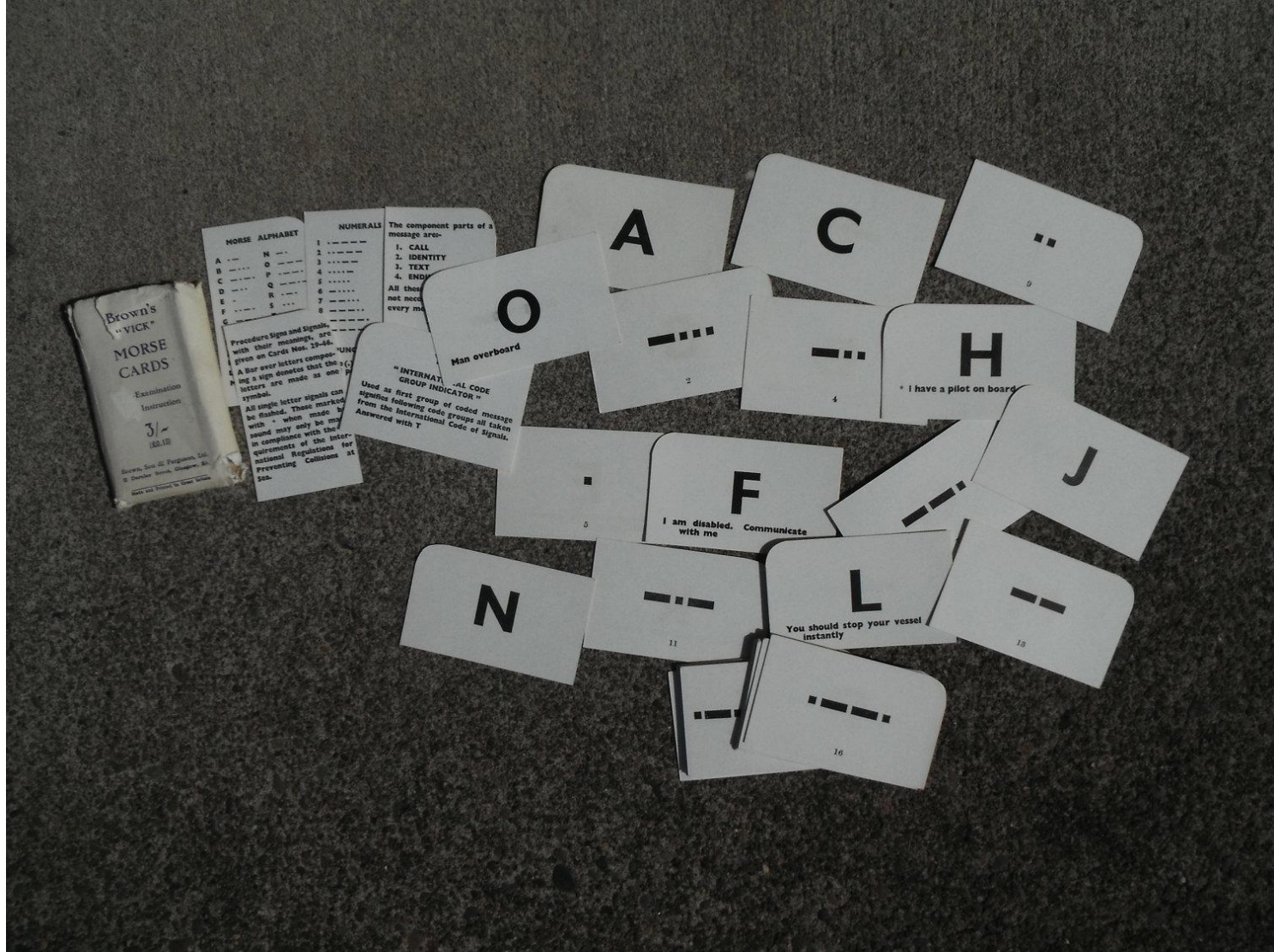
AGN	again
AR	end of transmission
AS	wait
BT	short break
CQ	calling all stations
CUAGN	see you again
CUL	see you later
CY	copy
DE	this is
DX	long distance
ES	and
FM	from
GA	go ahead/good afternoon
GD	good/good day
GE	good evening
GM	good morning
GUD	good
HI HI	laughter
HV	have
HPE	hope
HW	how
IMI	interogative or repeat
K	over
KN	invitation to transmit (called station only)
NW	now
OM	old man
PLS	please
PSE	please
R	roger
RX	receive
SK	end of QSO
STN	station
TKS	thanks
TMW	tomorrow
TNX	thanks
TU	thank you or to you
UR	your
VY	very
WX	weather
XYL	wife
73	greetings

# Learning CW

- Many methods available
- Military
- ARRL/RSGB
- Computers
- On-line

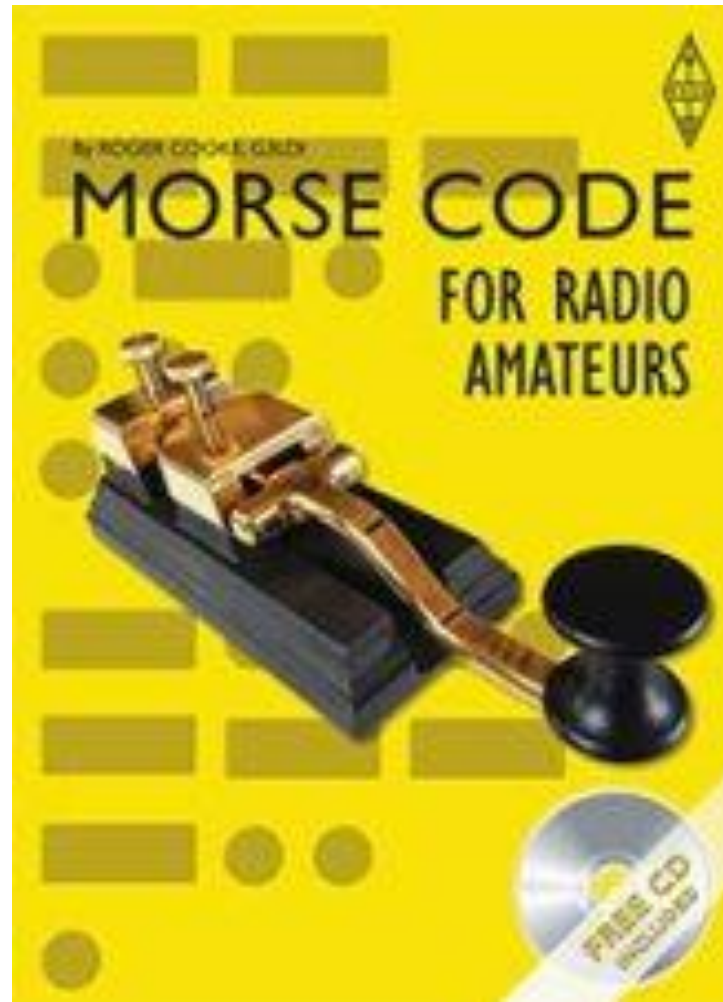


# Military Method





# ARRL/RSGB Method



# Computers

- Morse Runner
- <http://www.dxatlas.com/morserunner/>

UTC	Call	Recv	Sent	Pref	Chk
00:00:30	JA1APK	599 001	599 001	JA1	
00:00:46	TM7XX	599 001	599 002	TM7	
00:00:59	KD1J	599 001	599 003	KD1	
00:01:12	KD9ST	599 001	599 004	KD9	
00:01:36	KHOAA	599 003	599 005	KHO	
00:01:55	W9UAL	599 002	599 006	W9	
00:02:11	YEOANA	599 001	599 007	YEO	
00:02:30	KB5GA	599 001	599 008	KB5	
00:02:53	WA8VTD	599 003	599 009	WA8	
00:03:07	VE7RF	599 004	599 010	VE7	
00:03:30	KU6W	599 004	599 011	KU6	
00:03:49	KB6MMS	599 005	599 012	KB6	
00:04:06	SM4CTT	599 002	599 013	SM4	
00:04:29	DL6AST	599 002	599 014	DL6	
00:04:50	ON6UC	599 003	599 015	ON6	

Station  
Call: VE3NEA  QSK  
CW Speed: 30 WPM  
CW Pitch: 600 Hz  
RX Bandwidth: 500 Hz

Band Conditions  
 QRN  Flutter Activity  
 QRM  LID's 3  
 QSB

Run for 5 minutes

Call: [ ] RST: [ ] Nr.: [ ]

F1 CQ F2 <#> F3 TU F4 <my>  
F5 <his> F6 B4 F7 ? F8 AGN

00:05:00

	Raw	Verified
Pts	15	15
Mult	15	15
Score	225	225

# Computers

- RUZFXP
- <http://www.rufzxp.net/>

Attempt: 18 - Operator: TE5T

Tools Mode Help

Current attempt

Current score	Attempt errors	Main initial speed	Max speed	Min speed
23009	69	CPM: 257	CPM: 289	CPM: 236

Volume

OJ4A OJ4FH

Last callsign

Current speed	Max points	Gained points	Errors	Time needed
CPM: 265	843	86	2	2594 ms

53

Calls out: 50 of 50

Start Abort Exit

Callsigns: 53550 [50268 - 3282] TopScore: 24475 TopSpeed: 298 CPM Attempts: 17

# Morse Code Keys

- Straight Key



- Iambic Paddles



- Bug



# Making a CW Contact

- QRL?
- CQ de VE9BK VE9BK
- VE9BK de VE9ML K
- VE9ML DE VE9BK TKS FER CALL
  - RST 599
  - Name is JP
  - QTH Lutes Mountain
  - Ant Dipole
  - Rig TS480 ES 100 W
  - Wx is sunny es 20C
  - VE9ML DE VE9BK KN
- VE9BK de VE9ML FB JP Hr dipole es 100 W 73 VE9BK DE VE9ML KN
- VE9ML DE VE9BK FB TKS FER QSO ES PSE QSL via eQSL 73 VE9BK DE VE9ML VA



*"That's all Folks!"*