

The CW Journey

RAY, N6UG
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Why ?

- A unique art and skill
- Something new and different
- Excellent use of transmitter power
- Fun and entertaining

Basic structure and context

- Transmit / Sending (Mechanical – brain to hand)
 - Number of dahs and dits per letter
 - Forming a letter (timing, timing, timing)
 - Practice
- Receiving / Copying (Audio – ear to brain)
 - Sound of a letter
 - Sound of a word
 - Separating words
 - Practice

Key points and skills

- Form the letters using any key you have
 - How you send is referred to as your FIST.
 - Proper length of dahs and dits is important.
 - Creating the proper sound makes it easier for the listener.
- Hear the sounds (not the dahs and dits)
 - Hear the character. 20wpm character is easier to recognize.
 - See the word. Using space between characters is called Farnsworth.
 - Some words are easy because we hear them a lot, like 73 or CQ.

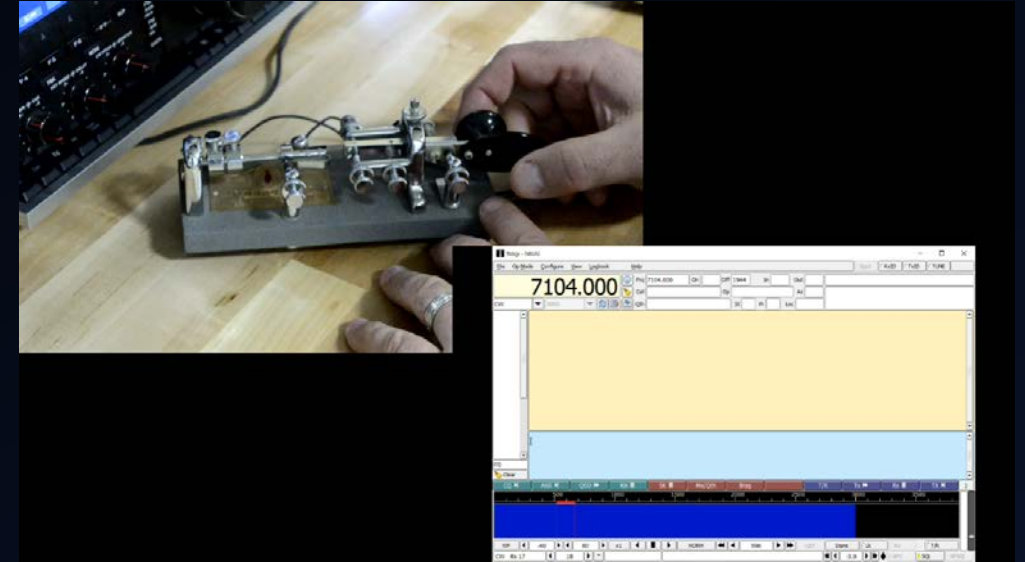
Sending Tools

Straight Key



AND... Various other computing hardware and software.

Semi-Automatic Key (BUG)

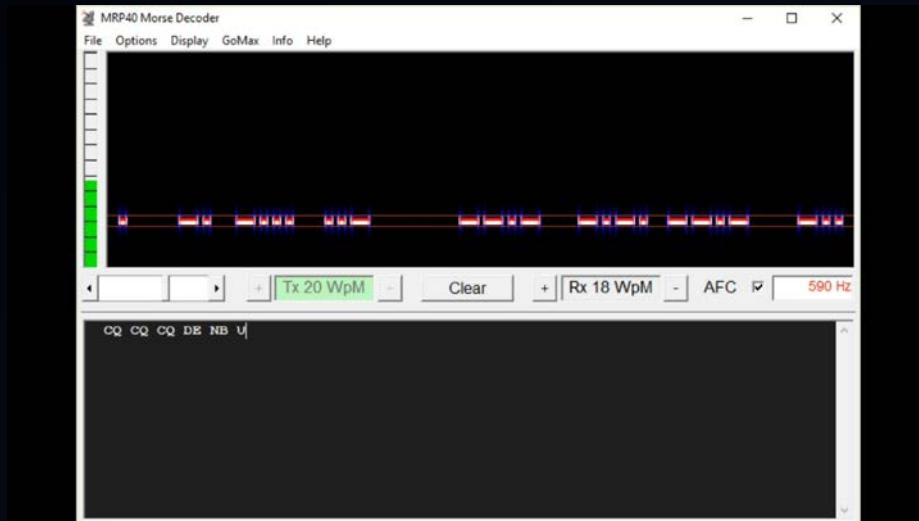


Paddle & Keyer



Receiving Tools

Computer Software - MRP40



AND... Various other computing hardware and software.

Ear – Most Reliable



Built-In Radio – KX3



Type of Conversations

- Contesting – Easiest!
 - Hear the same string many times.
 - Send a simple reply. Ex. Call Sign, Location, Counter (varies by contest)
- Contact QSO
 - Call and establish a contact (CQ...)
 - Exchange standard report, location and name.
 - RST 599 QTH ROCKLIN NAME RAY
 - Listen for same type of information in return...
- Rag Chewing – Toughest!
 - Establish contact and then talk about anything.

One Possible Learning Approach

1. Take a beginning class to learn the characters at 15-20wpm.
2. Get on the air and start making contacts everyday! (Good freq. 14.040mhz to 14.060mhz)
3. Take an intermediate class to push your speeds and confidence higher. (20-25 wpm)
4. Participate in contests using any tools available. (CW portion of bands)
5. Continue making at least 2-3 QSO's everyday. (CW portion of bands)
6. When your ready, take the advanced class. (30-35 wpm)

Note: Most CW operators are 25 wpm or less. The faster you send the fewer the number of operators that will be able to copy and hold a QSO with you. Seems like the sweet spot, excluding contests, is 15 to 20 wpm.

My CW Friends

There are many groups that want to help preserve the art of CW. Two of the groups I've worked with are:

- [SKCC \(Straight Key Century Club\)](#). They promote operators using Straight Keys or Bugs. Speeds are 0-20wpm and they WILL slow down to work you. As you make more contacts you gain awards.
- [CWOPS](#). This group is higher speed. They tend to use Paddles and run speeds 20+ wpm. To be a member you need to show your ability to Rag Chewing with a few different operators at 25wpm. You need to be nominated. They will slow down but tend to operate at 18+ wpm. You DO NOT need to be a member to work CWOPS members using CW.

References

- Classes
 - [W6SFM Beginner classes, In person Sacramento CA](#)
 - [CWOPS Beginner through Advanced, Online SKYPE](#)
- Windows 7/8/10 Desktop Tools
 - [RufzXP](#)
 - [MorseRunner](#)
- Android Smart Phone Tools
 - [Morse Trainer – Google Play Store](#)
 - [Morse Player – Google Play Store](#)
- Websites, too many to list... just use Google
- Book
 - [CW Geek's – Guide to having fun with Morse Code - Dan Romanchik, KB6NU.](#)
 - [**ZEN AND THE ART OF RADIOTELEGRAPHY**](#)

- ..- TU -... DE

- . -..... ..- --.

N6UG



The Letters

Character	Code	Character	Code	Character	Code	Character	Code	Character	Code	Character	Code
A	· —	J	· — — — —	S	· · ·	1	· — — — — —	.	· — · — · — ·	:	— — — — · ·
B	— · · ·	K	— · —	T	—	2	· · — — — —	,	— — — · — — —	;	— · — · — ·
C	— · — ·	L	· — · ·	U	· · —	3	· · · — — —	?	· · — — — ·	=	— · · · —
D	— · ·	M	— —	V	· · · —	4	· · · · —	"	· — — — — ·	+	· — · · ·
E	·	N	— ·	W	· — — —	5	· · · · ·	!	— · — · — — —	-	— · · · · —
F	· · — ·	O	— — — —	X	— · · —	6	— · · · ·	/	— · · · ·	_	· · — — — —
G	— — ·	P	· — — — ·	Y	— · — — —	7	— — — · ·	(— · — — — ·	"	· — · · · ·
H	· · · ·	Q	— — · —	Z	— — · ·	8	— — — · ·)	— · — — — —	\$	· · · — — —
I	· ·	R	· — ·	0	— — — — —	9	— — — — ·	&	· — · · ·	@	· — — · · ·

http://www.amateur-radio-wiki.net/index.php?title=Codes_and_Alphabets

The Language

Q-Code

These codes were originally developed to shorten transmission times when using CW, but are frequently used in voice transmissions. (eg. *I am going to go QRT, thanks for the QSO.*)

The QRA...QUZ code range includes phrases applicable to all services and is allocated to the International Telecommunications Union. NATO's [ACP 131\(E\)](#) D, COMMUNICATIONS INSTRUCTIONS - OPERATING SIGNALS, March 1997, chapter 2 contains a full list of 'Q' codes. Other 'Q' code ranges are allocated specifically to aviation or maritime services; many of those codes have fallen into disuse as voice displaces CW in commercial operation.

The Q-code was originally instituted at the Radiotelegraph Convention held in London, 1912 and was intended for marine radiotelegraph use. The codes were based on an earlier list published by the British postmaster general's office in 1908.^[1] [More information about the history and usage of Q-codes can be found here](#).

Q Codes Commonly Used by Radio Amateurs		
Code	Meaning	Sample use
QRG	Exact frequency	HE TX ON QRG 14205 kHz
QRI	Tone (T in the RST code)	UR QRI IS 9
QRK	Intelligibility (R in the RST code)	UR QRK IS 5
QRL	This frequency is busy.	Used almost exclusively with morse code, usually as a question (QRL? - is this frequency busy?) before transmitting on a new frequency
QRM	Man-made interference	ANOTHER QSO UP 2 kHz CAUSING LOT OF QRM
QRN	Natural interference, e.g. static crashes	BAND NOISY TODAY LOT OF QRN

My favorite:
QRS... Slow down 😊

Another favorite:
AGN... Say again. 😊

CW Abbreviations

These abbreviations are commonly used in CW transmissions to shorten transmission times. Not all CW operators use all of them - most will use very few. As a general rule most operators do not abbreviate unnecessarily, especially when communication with an operator that they do not know or whose experience is unknown. In contest conditions, abbreviations are common as operators try to gain as many contacts as possible over the competition period.

CW Abbreviations			
Abbreviation	Meaning	Abbreviation	Meaning
AA	All After	OB	Old Boy
AB	All Before	OC	Old Chap
ABT	About	OM	Old Man
ADEE	Addressee	OP	Operator
ADR	Address	OPR	Operator
AGN	Again	OT	Old Timer
AM	Amplitude Modulation	PBL	Preamble
ANT	Antenna	PKG	Package
BCI	Broadcast Interference	PSE	Please
BCL	Broadcast listener	PT	Point
BCNU	Be seeing you	PWR	Power
BK	Break in	PX	Press
BN	Between, Been	R	Received, Are

http://www.amateur-radio-wiki.net/index.php?title=Codes_and_Alphabets