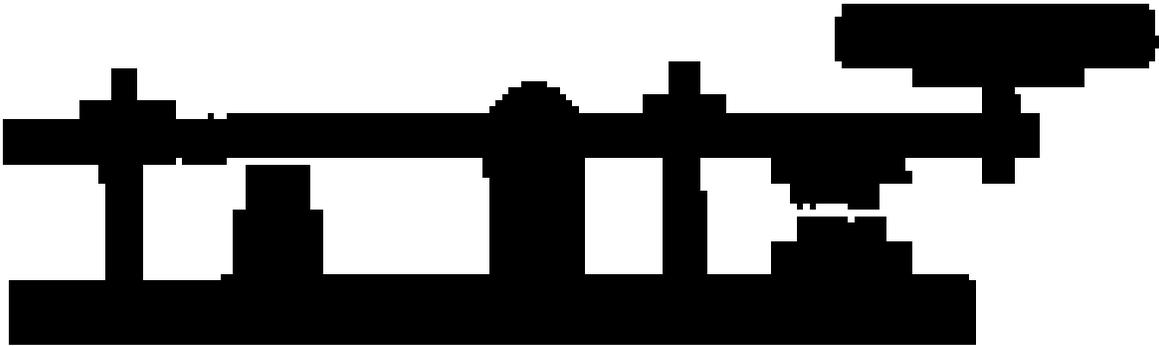


GOOD THINGS TO KNOW ABOUT OPERATING CW



de Norm VE3LC

Presented at the OVMRC meeting 2018-01-17

International Morse Code

- 1 dash = 3 dots.
- The space between parts of the same letter = 1 dot.
- The space between letters = 3 dots.
- The space between words = 7 dots.

| | | | |
|---|---------|---|-------------|
| A | • — | V | • • • — |
| B | — • • • | W | • — — |
| C | — • — • | X | — • • — |
| D | — • • | Y | — • — — |
| E | • | Z | — — • • |
| F | • • — • | . | • — • — • — |
| G | — — • | , | — — • • — — |
| H | • • • • | ? | • • — — • • |
| I | • • | / | — • • — • |
| J | • — — — | @ | • — — • — • |
| K | — • — | 1 | • — — — |
| L | • — • • | 2 | • • — — — |
| M | — — | 3 | • • • — — |
| N | — • | 4 | • • • • — |
| O | — — — | 5 | • • • • • |
| P | • — — • | 6 | — • • • • |
| Q | — — • — | 7 | — — • • • |
| R | • — • | 8 | — — — • • |
| S | • • • | 9 | — — — — • |
| T | — | 0 | — — — — — |
| U | • • — | | |

PROSIGNS FOR MORSE CODE

Prosigns are symbols formed by running together two characters into one (without the intercharacter space) to make an abbreviation for the most common procedural signals. Usually written with a BAR over the characters.

AR ----- End of message **.-.-.**

AS ----- Stand by **.-...**

BK ----- Invite receiving station to transmit **-... -.-**

BT ----- Pause; Break For Text **-...-**

KA ----- Beginning of message **.-.-**

CL ----- Going off the air (clear) **-.--..**

CQ ----- Calling any amateur radio station **-.-. ---**

K ----- Go, invite any station to transmit **-.-**

KN ----- Go only, invite a specific station to transmit **-.- -.**

R ----- All received OK **.-.**

SK ----- End of contact (sent before call) **...-.-**

VE ----- Understood (VE) **...-.**

Common Morse Abbreviations

ABOUT - **ABT**

AGAIN - **AGN**

ANTENNA - **ANT**

BEFORE - **B4**

CHECK - **CK**

CALLING ANY STATION - **CQ**

COULD - **CUD**

SEE YOU LATER - **CUL**

BECAUSE - **CUZ**

THIS IS - **DE**

DISTANCE (FOREIGN COUNTRIES) - **DX**

AND - **ES**

FINE BUSINESS - **FB**

FOR - **FER**

FREQUENCY - **FREQ**

GOOD - **GUD**

GOOD AFTERNOON - **GA**

GOOD EVENING - **GE**

GOOD LUCK - **GL**

GOOD MORNING - **GM**

GOOD NIGHT - **GN**

GROUND - **GRD**

LAUGHING - **HI HI**

HERE - **HR**

HOW - **HW**

MESSAGE - **MSG**

NUMBER - **NR**

OLD MAN (re any male operator) - **OM**

OPERATOR - **OP**

PLEASE - **PLS** (also - **PSE**)

POWER - **PWR**

RECEIVER - **RCVR**

RADIO APPARATUS - **RIG**

RADIO FREQUENCY INTERFERENCE - **RFI**

REPORT - **RPT**

CW SIGNAL REPORT - **RST**

RADIO RECEIVER - **RX**

SIGNAL - **SIG**

SILENT KEY (dead operator) - **SK**

SCHEDULE - **SKED**

SORRY - **SRI**

STATION - **STN**

TEMPERATURE - **TEMP**

THANKS - **TNX** or **TKS**

THANK YOU - **TU**

TELEVISION INTERFERENCE - **TVI**

TRANSMIT or TRANSMITTER - **TX**

YOUR or YOU'RE - **UR**

VERY - **VY**

WEATHER - **WX**

WITH - **WID**

WOULD - **WUD**

TRANSCEIVER - **XCVR**

TRANSMITTER - **XMTR**

WIFE (EX - YL) - **XYL**

YOUNG LADY - **YL**

BEST WISHES - **73**

LOVE & KISSES - **88**

The following is from Radio Information Circular #1, (RIC-1)
Guide to Examiners re conducting a amateur radio qualification for
the Morse code test *Not required qualification to operate CW*

6. Morse Code Examinations

6.1 Receiving and Sending Tests

For the receiving test, examiners may send Morse code by hand, cassette tape, or computer generated code. Timing and length of text must be closely observed. Examiners may produce their own tests based on the following Morse code specifications.

6.2 Morse Code Specifications

Candidates for the Morse code (5 wpm) qualifications of the Amateur Radio Operator Certificate are required to:

(a) correctly send, by hand, a plain-language text, in international Morse code, for a minimum of three (3) consecutive minutes, at a speed of not less than 5 wpm, using an ordinary radiotelegraph key, a semi-automatic key or an electronic hand key. In addition to the 26 letters, the text may include figures, punctuation marks and Q-signals.

(b) correctly receive, by ear, a plain-language text, in international Morse code, for a minimum of three (3) consecutive minutes, at a speed of not less than 5 wpm, copying legibly by hand, typewriter or word processor. In addition to the 26 letters, the text may include figures, punctuation marks and Q-signals.

A Morse code "word" consists of five characters. The letters A through Z are counted as one (1) character each, and figures and punctuation signs are counted as two (2) characters each.

Morse code tests shall only use letters of the alphabet, numbers, the period, the comma, the question mark, the dash and the fraction bar.

The basic unit in Morse code is the dot. A dash is three dots long. Pauses between character elements are one dot long, pauses between characters are three dots long, and pauses between words are seven dots long.

Morse code shall be sent at a character speed of 12 wpm. It is the length of the spacing between characters and between words that determines the speed of the test. The additional time required for the 5 wpm space sequence is approximately 2.5 times as long at 5 wpm as it is for 12 wpm. Therefore, for the 5 wpm test, the spaces between letters would be approximately 7 dots in length, and the spaces between words approximately 17 dots in length.

To verify the speed of a Morse code sending machine, the word “Paris” sent five times in one minute results in a code speed of 5 wpm. When the text is sent by the candidate, the speed of the characters is immaterial, as long as the necessary number of characters is sent. That is, at 5 wpm, at least 75 characters are sent in the three (3) minutes allocated. Any characters omitted at the end of the text due to lack of time will count as errors. Accented letters are not to be used during Morse code testing.

6.3 Example of Code Test

Qualification for Morse Code (5 wpm)

FORECAST PERIODS WILL BE SHORTENED DURING HEAVY STORMS. FRONTAL ZONES KEEP QSJ 1962

The above example of Morse code shall not be used in an examination.

6.4 Briefing and Familiarization

Examiners should allow time for adjusting equipment, briefing and familiarization prior to the test. The familiarization may include sending and receiving sample texts, excluding the text being used for the examination. The text for the sending test shall be different from that of the receiving test.

6.5 Timing

Examiners must ensure that the code receiving and sending examinations are timed.

6.6 Review

Examiners shall allow two (2) minutes at the end of the receiving test for candidates to review their copy and make any changes or corrections, if necessary.

For the sending test, candidates may send the error signal and resend the character as many times as they wish, but they must send the complete text within the time allotted.

6.7 Marking

Examiners shall assign marks for Morse code receiving tests by counting errors and giving a mark of 100% where there are 5 errors or less, 99% for 6 errors, 98% for 7 errors, 97% for 8 errors, and so on. The pass mark for code receiving is 100%.

Notations of dots and dashes on an examination paper will be considered as evidence of inability and cause for rejection of the test.

In both the sending and receiving Morse code tests, each character, including figures and punctuation, that is omitted or incorrectly sent or received, is counted as one (1) error.

6.8 Re-examination

A candidate who fails a Morse code test may be retested as often as necessary, at the convenience of both the examiner and the candidate. The examiner must ensure that different Morse code tests are used for each re-examination. each re-examination.

Straight Keys

Vintage WW2 surplus J 38 straight key, often available on eBay or at ham flea markets.





Nye Viking Rectangular Speed -X with "Navy" style knob

<http://www.morseexpress.com/nye/>

El Cheapo Straight Key available from MFJ



<http://www.mfjenterprises.com/Product.php?productid=MFJ-550>

Semi Automatic Keys (Bugs)



VIBROPLEX®



<http://www.vibroplex.com/> <http://vibroplexcollector.net/>

"BUGS" use a mechanical pendulum action to form the "dits" when the level pad is pressed to the right. Pressing the "knob" to the left, the operator manually forms the "dahs" of the Morse character.

Bugs are mostly "collectors" items now and trade at flea markets but can still be bought new. They are not cheap.

Here's a Japanese made semi automatic "bug" key that was popular with hams in the 1960's. It worked really well. I picked up one up last September at the Carp flea market for

\$20 for nostalgic sake; I used one of these keys when I first got on the air in 1963. Back then they sold for about \$10.

Hi-Mount Shizoka BK-100 key manufactured 1953 to 1968



Paddles are used with a Keyer or Radios with Built-in Keyers

Single Lever type: Examples

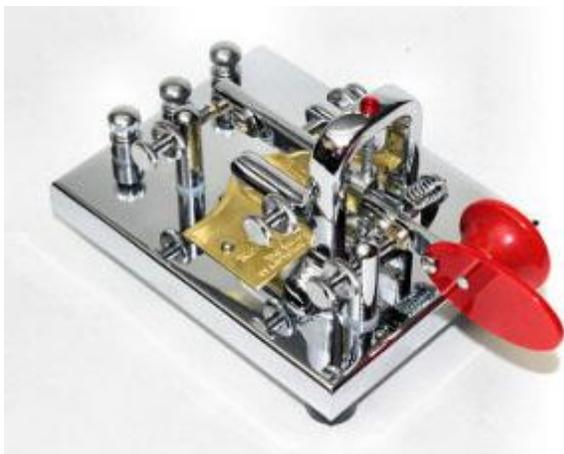
American Morse Equipment and

Home Brew



Vibroplex Single Lever Paddle

Begali Single Lever Paddle



<http://www.vibroplex.com/>

http://www.i2rtf.com/html/keys_paddles.html

Single level paddles have two switch contacts, one is closed when the paddle is pressed to the right; the other switch contact is closed when the paddle is pressed to the left. These are mutually exclusive and cannot make contact at the same time.

Iambic or Dual Lever Paddles:

Iambic paddles are different than single level paddles in that there are two independent paddle levers and switches that are not mutually exclusive. This means that by squeezing the two paddles, both switches can make contact at the same time. Otherwise, the physical action using the Iambic paddles works the same way as the single level paddles.

Popular Bencher Iambic Paddle and American Morse Iambic Paddle



Iambic Keying

Iambic keying or squeeze keying creates alternating *dits* and *dahs*. This makes sending some characters easier, like the letter **C**, by merely squeezing the two paddles together. In single-paddle, non-iambic keying, the hand motion would require alternating four times for the letter **C** . (*dah-dit-dah-dit*).

Iambic keyers function in one of at least two major modes: **Mode A** and **Mode B**.

Mode A is the original iambic mode in which alternate dots and dashes are produced as long as both paddles are depressed. When the paddles are released, the keying stops with the last dot or dash that was sent while the paddles were depressed.

Mode B is the second mode which devolved from a logic error in an early iambic keyer. In mode **B**, dots and dashes are produced as long as both paddles are depressed. When the paddles are released, the keying continues by sending one more element, i.e., a dot if the paddles were released during a dash, or a dash if the paddles were released during a dot. Users accustomed to one mode usually find it difficult to use the other, so all competently re-designed keyers allow for selection of the desired keyer mode. If forced to use a keyer with an unaccustomed mode, the user must revert to single paddle mode in which both paddles are never depressed simultaneously.

Typically, single and dual-paddle keys use horizontal movements, while a straight-key utilizes an up and down movement. The benefit of iambic keying has recently been discussed in terms of movements per character and timings for high speed CW.

Standard Morse Code Timing

- 1 dash = 3 dots
- The space between parts of the same letter = 1 dot
- The space between letters = 3 dots
- The space between words = 7 dots

Farnsworth timing

Traditionally, reducing the speed of Morse code has been done by making everything take longer, i.e. both the sounds and the silent periods between them. Using Farnsworth timing, characters are sent at the same speed as at higher speeds, while extra spacing is inserted between characters and words to slow the transmission down. The advantage of this is that you get used to recognising characters at a higher speed, and thus it will be easier to increase the speed later on. In RIC 1, the instruction to examiners for testing the candidate at 5 Words Per Minute (WPM) requires sending each character at a rate of 12 WPM but increasing the inter-character and inter-word spacing about 2.5 times greater than it would be at standard timing thus slowing down the overall transmission speed to 5 WPM. For determining a "word time", the period is equivalent to the 5 letter word "PARIS". This amounts to a time period of 50 dot units including the 7 dot units to the beginning of the next word.

Code Practice Oscillator

Sending Morse code is part of the qualification test and proficiency should be learnt using a Straight Key. To practice this, an electronic Code Practice Oscillator will be necessary. These can be bought ready-made or self assembled from kits or from simple circuits based on readily available components.



AMECO Code Practice Oscillator Kit available from :

<http://www.morseexpress.com/ameco/oscs.htm>

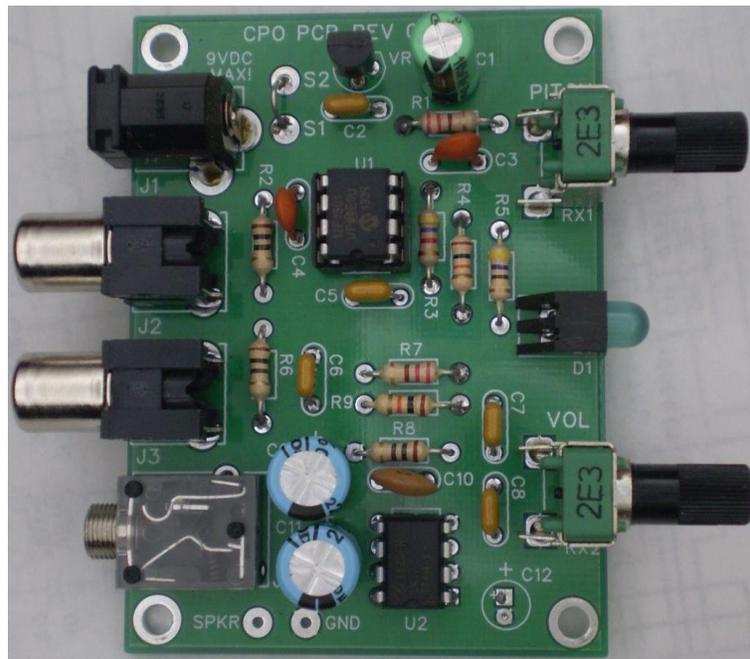
Another Kit complete with simple key available from:

<http://www.qrpkits.com/cpo.html>



K1EL Code Practice Oscillator

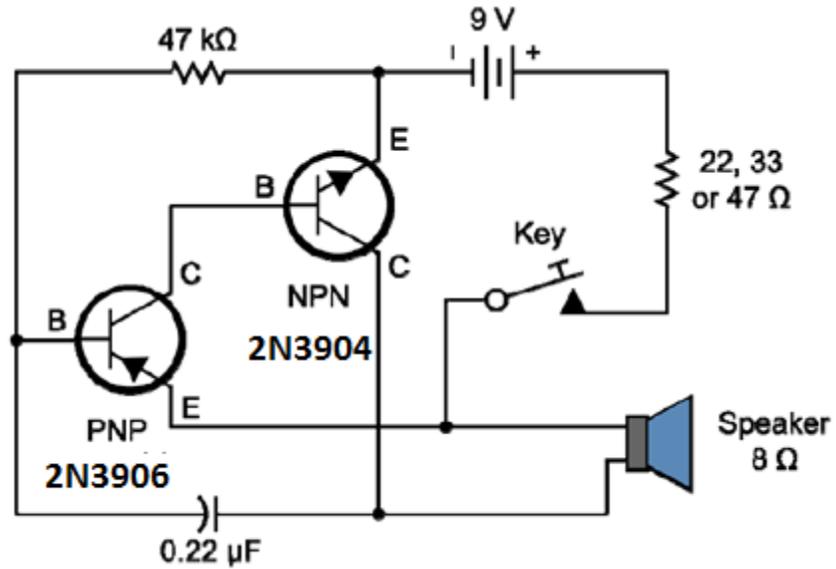
This is a versatile code practice oscillator that can be used with K1EL keyers or just about any keyer on the market. True sine wave output with adjustable frequency and volume. A connector is provided to drive an external speaker or headphones with plenty of clean output. RCA jack outputs on back with external power and speaker/headphone connector. Exclusive KeyerSync allows you to chain several CPOs together to simulate 2 way or net operations. You hear what you are sending along with everyone else on the simple two wire network. This is a bare bones kit, we supply the board and all components, you supply an enclosure, power supply and speaker.



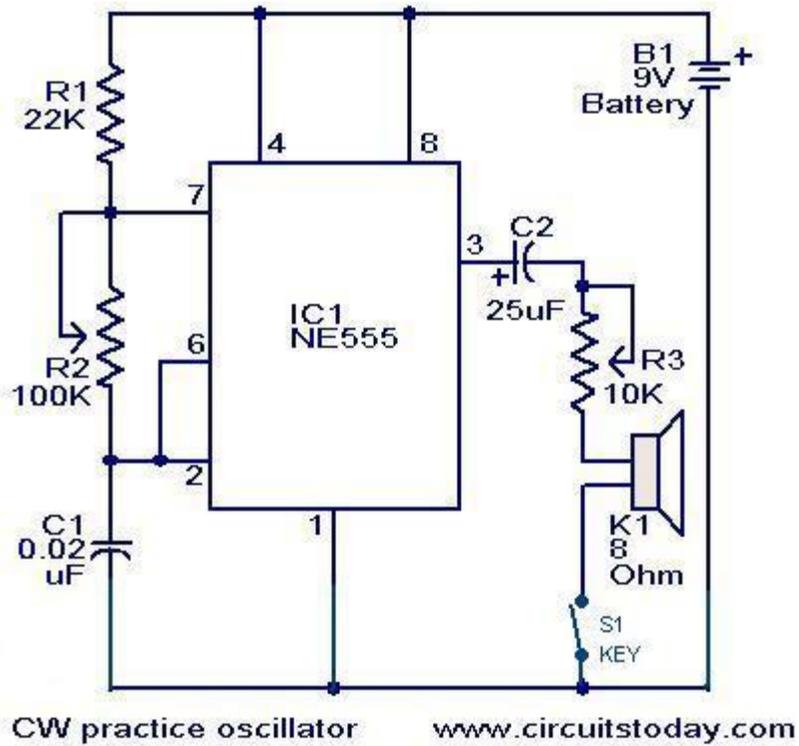
<http://k1el.tripod.com/CPO.html>

Code practice oscillator circuits

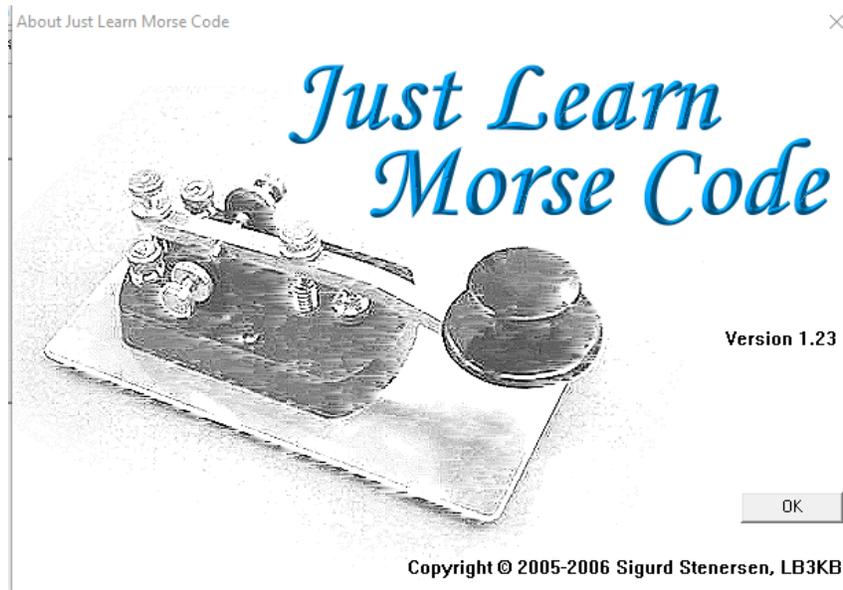
Simple transistor circuit



Or using a popular 555 timer IC



Code Training Software for Windows



free download from: <http://www.justlearnmorsecode.com/>

A few Android Tablet and Smart Phone Apps

| | | | |
|---|--|---|--|
|  <p>\$2.99</p> <p>★★★★★ 206 [android]</p> <p>Morse Trainer for Ham Radio "I can practically learn morse code anywhere anytime."</p> <p><input type="checkbox"/> Compare This <input type="button" value="More like this"/></p> |  <p>\$3.99</p> <p>★★★★★ 39 [android]</p> <p>Morse Code Teacher "have fun learning morse code on your android smart phone."</p> <p><input type="checkbox"/> Compare This <input type="button" value="More like this"/></p> |  <p>\$1.00</p> <p>★★★★★ 29 [android]</p> <p>Morse Code Trainer (DONATION) "ATTENTION: This is a DONATION version of a FREE APPLICATION which</p> <p><input type="checkbox"/> Compare This <input type="button" value="More like this"/></p> |  <p>FREE</p> <p>★★★★★ 117 [android]</p> <p>Morse Code Trainer "If you ever anticipate being held prisoner and handcuffed to a drain pipe</p> <p><input type="checkbox"/> Compare This <input type="button" value="More like this"/></p> |
|---|--|---|--|

W1AW Code Practice

On-Air

Goto: <http://www.arrl.org/w1aw-operating-schedule>

Morse Code Transmissions

Frequencies are 1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675

Slow Code = practice sent at 5, 7-1/2, 10, 13 and 15 words per minute (wpm).

Fast Code = practice sent at 35, 30, 25, 20, 15, 13 and 10 wpm.

Code bulletins are sent at 18 wpm.

EchoLink Access

Also on EchoLink on W1AW Echolink Conference Server

"W1AWBDCT" (EchoLink apps are available Android and Apple Tables and Smart Phones) as well as Web Browser.

MP3 File Format

Also available in .MP3 file format from:

<http://www.arrl.org/code-practice-files>

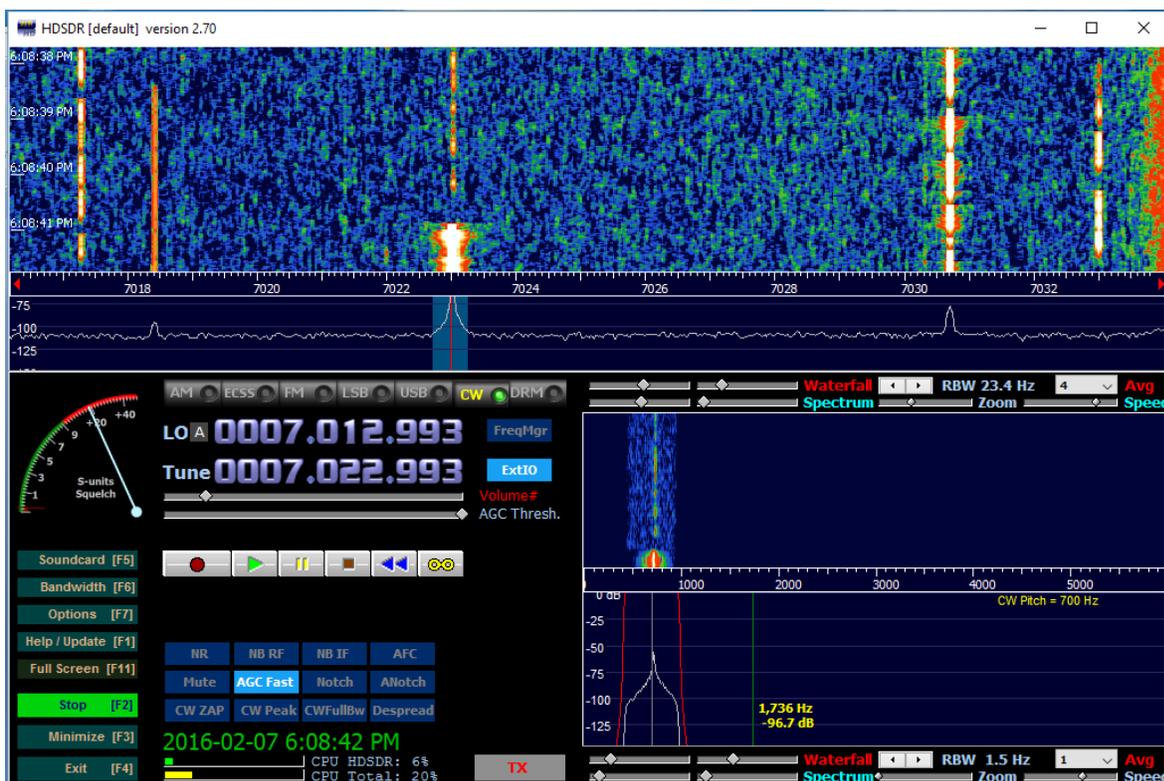
Receiving CW OFF-AIR - Narrow BW filter is necessary

The HF Amateur Radio Bands can be very busy with CW signals especially during contest activities.

CW is a narrow bandwidth mode that can be received in a Bandwidth of 100 Hz or less. Therefore, for successful CW reception, it is ideal that narrow bandwidth reception be used in order to have "single signal" reception.

Many less expensive HF radios designed for multi-mode operation do not necessarily come with a narrow bandwidth filter; this is typically offered as a \$100 to \$250 Option. Depending on your radio, you may have to add 300 to 500 Hz bandwidth optional filter for successful CW reception in a busy band.

Below shows narrow BW reception of a CW signal on HSDR of an SDR transceiver on the 40 M band. SDR's can provide variable selectivity with very narrow BW reception.



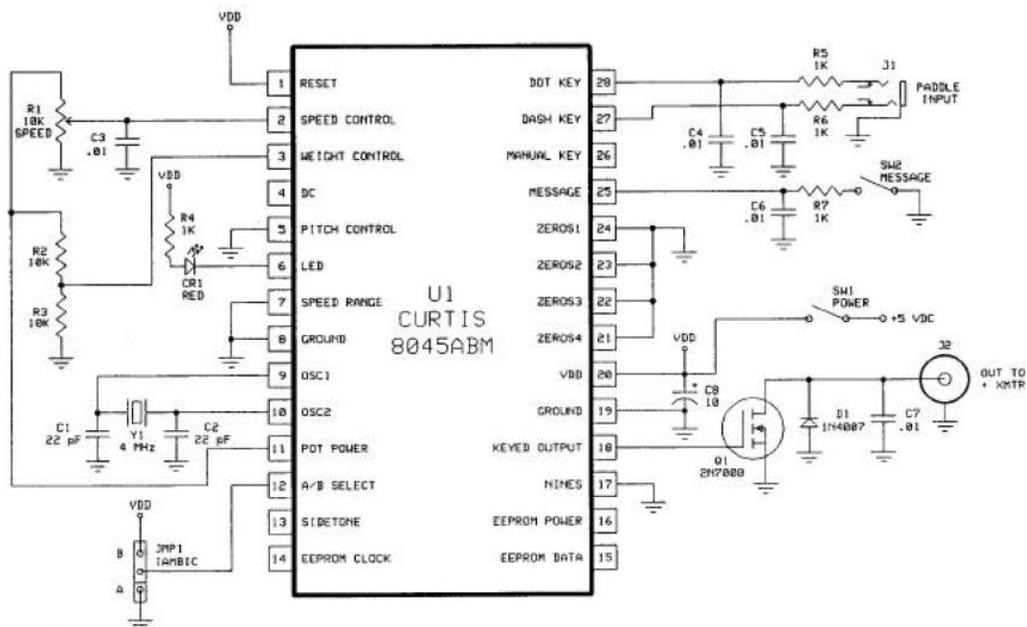
Iambic Keyers

Most new HF Transceivers have Iambic CW Keyers built in. These keyers usually have menu adjustments for speed, and reversal of key contact switches so the user can exchange what side of the key paddles does dits and dahs. Transceivers can also accommodate straight key operation as well. This will allow external keyers to connect to most CW transceivers.

External Keyers



The above MFJ keyer uses the famous Curtis Keyer Chip.



Popular Winkeyer



The Winkeyer 3 USB is available as a partially assembled kit from:

http://k1el.tripod.com/wkusb_smt.html

The Winkeyer can stand alone powered by its internal battery or can be connected to your station computer using a USB cable. The Winkeyer interface protocol is supported by most general purpose and contest logging programs and other available programs for keyboarding Morse code. When interfaced to a logging program, logged call sign entry and other programmed macro sending functions can be selected by "F" keys and sent by the Winkeyer. One such pre-programmed function may be set to just send your call sign.

The buttons on the Winkeyer are for standalone operation for activating pre-programmed Macros for sending canned messages.

The Winkeyer of course, also supports connection of Iambic Paddles.

Winkeyer setup screens for the popular N3FJP logging program.

<http://www.n3fjp.com/>

Note the F12 function key provides Keyboarding Morse.

CW Setup Form (Ctrl W)

Com Port:
COM6
COM3
COM1
COM2
COM4
COM5

Keying Options
 None RTS Winkeyer DTR

Timing Options
 Sleep Timer Loop

Changing speeds will disable Winkeyer Speed Pot Lock

Word
WPM
Faster More
24 0
Slower Less

Send F9 Characters

Description:
To use computer generated CW, first, you will have to build or purchase an interface to connect from your computer's serial port to your transmitter. Schematics and purchase options are available on my website (www.n3fjp.com).
Most folks only have USB ports now, but in most cases a USB to serial adapter will work fine. You'll find them on line or at your local Best Buy.
Alternatively, you can select the Winkeyer device, which will key your rig independently from your PC's processor, which is a great solution if your processor's code is erratic. There is also a Winkeyer USB version that will connect right to your

F1 CQ DE VE3LC \ 0 F4 \$ UR RST 5NN 5NN, Q1 F7 \$ 73 F10 CQ CQ CQ POT LID SL
F2 VE3LC F5 \$ DE VE3LC F8 F11 TNX FER UR PARTICIP
F3 \$ 5NN ON VE3LC F6 \$ TU F9 VVV DE VE3LC F12 Keyboard

Faster Escape Check [Click for more info on rig to PC CW interfaces.](#)

Winkeyer Setup

Settings
Please select the com port that Winkey is connected to in the CW form.
 Winkeyer Status: Closed Winkeyer Version:

Set Speed Pot Lock to adjust WPM by speed pot or use the up and down arrow keys on the main form.

Keyer Settings
50 Ratio 50 Weight
0 Comp 0 Lead In
0 1stExt 1 Tail
50 Sample 0 Farns
0 Letterspace (V23 only)

Keyer Setup
 Swap
 AutoSpace
 CT Spacing
 Key on Port 1
 Key on Port 2
 Enable PTT
 Sidetone Enable

Speed Pot
30 Max WPM
5 Min WPM
 Speed Pot Lock
Current WPM
5 Speed Pot

Keyer Mode
 Iambic B

Paddle Hang
1.0 Word
 Paddle Watchdog

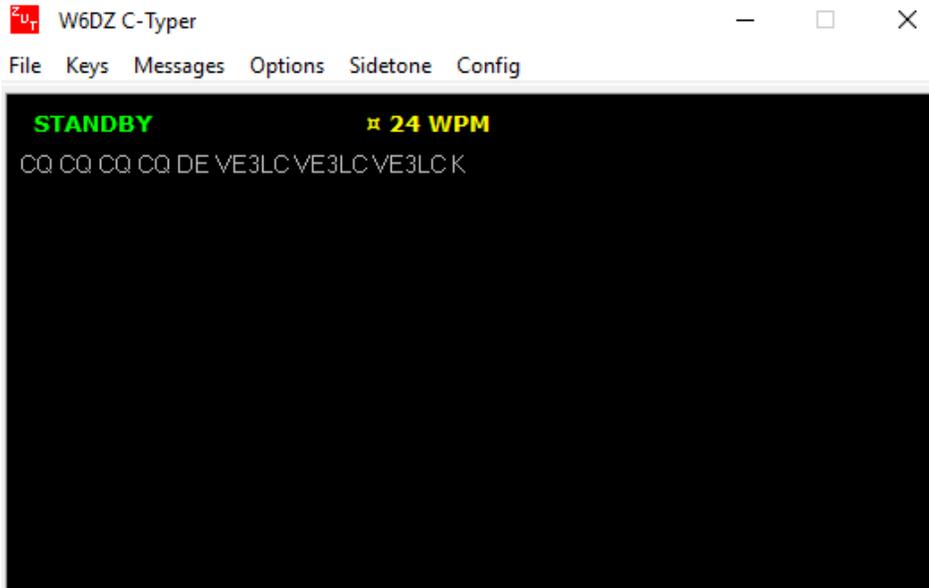
Sidetone
800 Hz
 Paddle Only

Winkeyer code courtesy of Steve Elliott,
<http://www.k1el.com>

Keyboarding Morse code

C-Typer A good simple keyboarding program for the WinKeyer.

<http://k1el.tripod.com/WKapps.html> (free download)



MFJ-452 CW-Keyboard Keyer with Display

<http://www.mfjenterprises.com/Product.php?productid=MFJ-452>



Code Reading Software & Hardware

All good software Morse code reading software applications do well with good machine generated code of consistent speed and character timing. These programs do not do well with hand sent code from a straight key or semi automatic bug.

CWGet V2.36 Morse code reading software

Download from <http://www.dxsoft.com/en/products/cwget/>

This is one of the better code reading software packages. It automatically compensates for speed and signal level. A registered copy will cost \$35 US or 30 Euros. However, it will work properly in its unregistered form but will not save setup parameters; these will have to be entered every time the application is launched.



FLDIGI

Download from <http://www.softpedia.com/get/System/System-Miscellaneous/Fldigi.shtml>

FLDIGI not only decodes Morse code but also many other digital modes as well like PSK 31, RTTY, etc. It is freeware available from: <http://sourceforge.net/projects/fldigi/?source=directory>

FLDIGI is available for Windows, Linux, and Mac OS X

The screenshot shows the FLDIGI software interface. At the top, the title bar reads "fldigi - VE3LC". The menu bar includes "File", "Op Mode", "Configure", "View", "Logbook", and "Help". Below the menu bar, there are several input fields: "Enter Xcvr Freq" (with a globe icon), "Freq" (764), "On" (checkbox), "Off" (checkbox), "1706", "In" (checkbox), "Out" (checkbox), "Call" (text field), "Op" (text field), "Az" (checkbox), "CW" (dropdown), "Qth" (text field), "St" (checkbox), "Pr" (checkbox), and "Loc" (text field). The main text window displays the following decoded Morse code:

```
GE BOB 5NN1507 E EEIHESH X*VB FOC S * I E * EE E*I I E I  
ERIIITDT EFR GE DECL N 5NNW 5M <AS> E E E<VE>E<AA>U K9QVB FO  
N RS* UR T5E ES ** HI ANDY 5NN1507 II S I5 EE I***QVB FOC E  
E E I ECQ CQ CQ FOC DE K9QVB K9QVB FOC K SG3RXP HI DAVE  
5NN1507 EEI**EAU K9QVB FOC EI * E E S HSM6DHU GE MATT 5T E1  
IO7 I IEEIEIIE UU K9QVB FOC EE E SEII? E *SCQ CQ CQ FOT E DE  
K9M EVB K GQ EB FOC SEI* I EE*CQ CQ CQ FOC DE K9QVD K9QVB  
FOC K E IS S
```

Below the text window is a large blue area, likely a display for a digital mode or a blank space. At the bottom, there is a control panel with buttons for "CQ", "ANS", "QSO", "KN", "SK", "Me/Qth", "Brag", "T/R", "Tx", "Rx", and "TX". Below these buttons is a waterfall display showing a signal centered around 764 kHz. The bottom-most control panel includes buttons for "WF", "-20", "70", "x1", "NORM", "764", "QSY", "Store", "Lk", "Rv", "T/R", "CW", "Rx 25", "18", "*", "-3.0", "AFC", and "SQL".

Some Modern Radios will decode and show CW Text on the front panel display.

Yaesu FTdx 1200



Barry VE3NA's KX3 with PX3 Panadapter Spectrum Display



MFJ-461 Pocket Sized Morse Code Reader

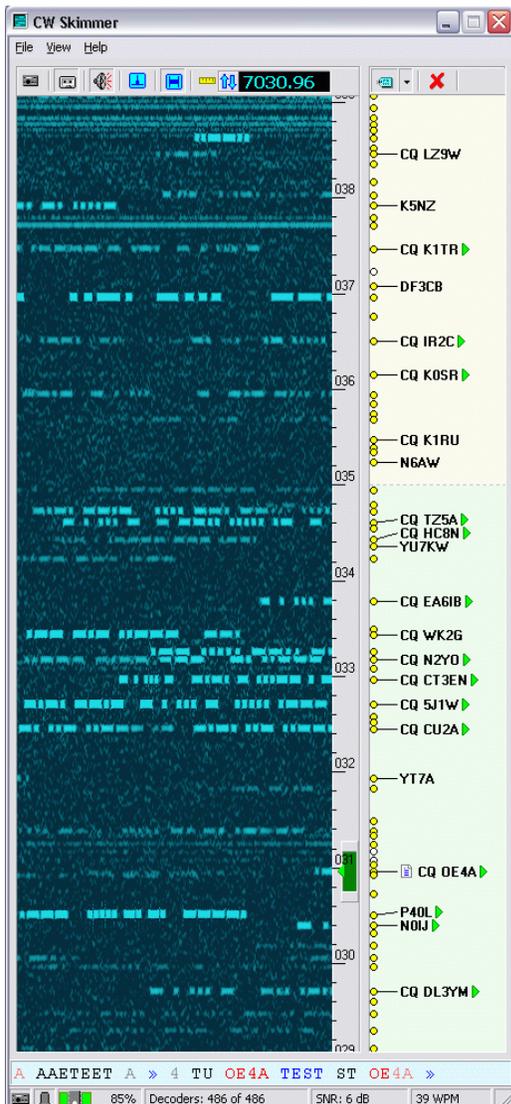


CW Reverse Beacon Network

www.reversebeacon.net

Decodes Your CW Transmissions from multiple site and reports these to the network server to query.

System Based on a Network of Broad Bandwidth HF SDR Receiving Stations and CW Skimmer Software Developed by:



Alex Shovkopyas, VE3NEA

Afreet Software, Inc.

www.dxatlas.com

Sample of Reception Report from RBN site I got after calling CQ with my 1/2 Watt “Rockmite” CW Transceiver

| showing spots for DX call: VE3LC | | Running multiple Skimmers | | rows to show: 100 | | |
|----------------------------------|-------|---------------------------|--------------|-------------------|--------|--------------|
| de | dx | freq | cq/dx | snr | speed | time |
| K1TTT | VE3LC | 7039.9 | CW CQ [LoTW] | 5 dB | 19 wpm | 1545z 30 Oct |
| N2WQ | VE3LC | 7039.9 | CW CQ [LoTW] | 13 dB | 19 wpm | 1545z 30 Oct |
| N2WQ | VE3LC | 3620.0 | CW CQ [LoTW] | 44 dB | 24 wpm | 1455z 30 Oct |
| W7HR | VE3LC | 7040.0 | CW CQ [LoTW] | 5 dB | 22 wpm | 0200z 30 Oct |

The Formality of Initiating and Conducting an "Ordinary" CW contact.

- You Call CQ on a Clear Frequency designated for CW operation according to the "Band Plan".
- CQ CQ CQ de <your call sign> CQ CQ CQ de <your call sign> K

Another station listening decides to answer your CQ and responds:

- <your call> <your call> de <his call> <his call> KN

You respond:

- <his call> de <your call> TNX FER CALL -...- UR RST IS 579 579 ES QTH IS OTTAWA, ON. OTTAWA, ON. ES NAME IS <your name> <your name> -...- SO HW CPY? <his call> de <your call> KN

The other station responds in a similar fashion.

Subsequent exchanges might give weather (WX) report info, rig info, antenna info, etc.

The sign off exchange might be something like the following.

<his call> de <your call> TNX FB QSO, SOLID CPY ES GREAT SOUNDING SIG -...- 73 73 SK <his call> de <your call> SK

Participating in CW Contests.

Various CW Contests have different specified exchanges; these are specified in the rules published for the contest. Besides the Call Sign, the exchange may require such elements of information such as the RST report, the CQ contest World Zone, the State or Province, the contact serial number etc. For instance, the CQ World Wide CW contest requires the RST report and CQ Zone number. The exchange must be kept short.

Unless you become a very proficient CW operator, I don't recommend you call CQ during a contest; instead, respond to others calling CQ. As an example, for the CQ WW CW contest, participants may call CQ "TEST" at 25 to 35 WPM. (TEST is short for Contest) You want to give these high speed "pros" a contest contact. The exchange will be:

They are calling "CQ CQ <their call> TEST K" and that may be repeated until they get a response. You copy their Call Sign with the Code Reading software and immediately enter it into your contest logging program.

You respond simply with your CALL sent once. No response, you send your call again (at or close to their speed). If they didn't get your whole call sign they may respond with "VE3?" Or some other portion of your call sign. You then send <your call> again once or maybe twice.

They respond with "<your call> 5NN <their Zone>" "5NN" is an abbreviation of "599". Everybody is 599 during a contest even if the signal is weak and near unreadable.

You respond with "<their call> 5NN <your Zone>" BTW, we are in CQ Zone 4

They may respond now with "<your call> TU" (TU means "Thank You")

The contact is over, both parties log the contact. The high speed contester starts calling CQ again. You have used your macros and keyer to send the high speed code.

To make it all flow, you have set up Macros into your Contest Logging program that actuates the Winkeyer by the computer "F" keys. For example, F2 may simply be your call sign, F3 may be the exchange info like "<his call sign> 5NN 4" for the CQ WW CW contest, F4 may be "<his call sign> TU" etc. Note that <his call sign> is got from you previously entering it into the logger as the station you are trying to contact.

CW and QRP go together.

Many Low Power Rigs (QRP) are designed for CW only and are favoured by "Back Packers" and SOTA enthusiasts. Many QRP CW rigs are inexpensive kits.



<http://www.qrpkits.com/tribander.html> \$225 US

From Elecraft, the KX1 \$300 US



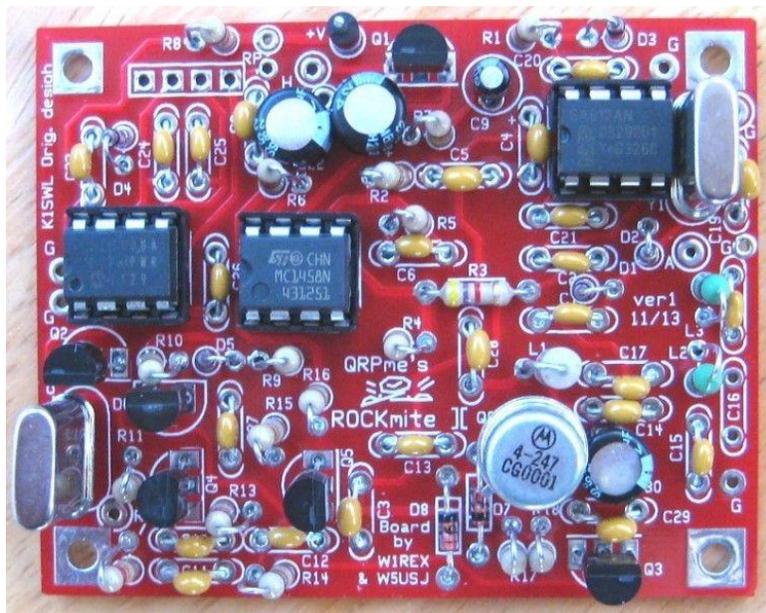
<http://www.elecraft.com/KX1/KX1.htm>

From YouKits Canada \$300



<http://youkits.com/>

Rockmite \$50



<http://www.qrpme.com/?p=product&id=RM4>

QSK Operation

QSK operation enables full duplex CW communications. A Transceiver capable of QSK operation means Key Down, you are transmitting, Key Up, you are receiving. The switching between Transmit and Receive is so quick, you are literally receiving between the dot and dashes of sending the code. This allows a very conversational exchange between communicating parties. You can literally interrupt the other party transmitting to you by yourself sending a dit dit.. and the other party will hear it and stop sending and listen.

Most QRP CW transceivers shown on the previous page can do QSK. Operating at higher power levels can be problematic doing QSK because of the rapid high power toggling of the antenna transfer switching between receive and transmit circuitry if mechanical relays are used in the transceiver design.

Keyers - Paddles & More

[Adjusting Straight Keys, Paddles, & Bugs](#) A "How-To" Article by N1FN
[American Morse Equipment](#) Stright keys & paddles
[Bencher](#) CW keys & paddles
[Begali Kays & Paddles](#) Italy
[Bulldog](#) Iambic keyers & memory keyers
[Bugs: Want some Technology with That?](#) A discussion of dual levers by N1FN
[CWTouchKeyer](#)
[ElectroInstrument](#) From Russia
[GHD Telegraph Key](#) Keys, paddles & bugs by Toshihiko, JA7GHD
[GHD Telegraph Key](#) GHD Japanese web site; Japanese language
[Hi-Mound](#) Straight keys & paddles from Japan
[Jackson Harbor](#) Keyer kits by WB9KZY
[K1EL](#) K-Keyers & WinKey CW Keyer
[K8RA](#) Solid brass Iambic CW paddles
[Kent Morse Keys](#)
[Lennart Pettersson & Co](#) The original Swedish key
[Logikey K-3 & Super CMOS-III Keyer Kits](#)
[Milestone Technologies](#) Keys, keyers & kits
[Morse Express Products](#)
[NorCal Keyer & Tips](#)
[North American Telegraph Keys](#) Hand-made keys from Jim, K6VDH
[Nye Viking](#) Keys and paddles from U.S.A.
[Palm Radio](#) Miniature paddles from Germany
[PLA Keys](#) Chinese military surplus
[SMART KEYER III](#) by Joe, N4YG
[Soxman Miniature Keys](#) U.S.A.
[Straight Keys](#) made in Ukraine
[The Art of Side-Swipery](#) by Jerry L. Bartachek KD0CA
[The Bulldog](#) Mini Iambic CW paddles by K9LU
[The Junker DBGM Key](#) Germany
[Vibroplex](#) Keys, bugs & paddles
[Vibroplex Collector's Page](#)
[Whiterooke Products](#) Keyers & paddles
[WK4DS CW Instruments](#) Precision, hand made paddles