



CW Academy Advisor Guidelines

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Introduction

Soon after CWops was formed in January 2010, a dedicated group of members formed the CW Academy with Advisors to teach beginners and provide mentoring in the art and skills required for proficient use of Morse Code as an amateur radio operating mode. As of January 2012, the CW Academy has forty Advisors paired with students around the world who have expressed desire to learn or improve their skills in sending and receiving Morse Code.

The purpose of this document is to provide basic guidelines and resources for CW Academy Advisors teaching and mentoring students in the use of International Morse Code. Advisors are encouraged to offer comments, suggestions, and reference information in order to improve and expand this Advisor Guide.

Background

Thanks to Samuel Morse and his invention of Morse Code which has been used as a means of communications from 1837 until a few years ago by government agencies, commercial entities, military and amateur operators all over the world. While computers, data systems, Internet and e-mail have replaced commercial and government use of Morse Code, amateur operators keep this unique and valuable media alive. Morse Code better known as CW in the amateur community has a love/hate relationship as it is a skill loved by many and despised by others. Most any time, day or night and especially during contest weekends CW Operators continue to keep Morse Code alive and well.

The *Fiction* and *facts* section is provided as a resource for answering questions raised by students, Advisors or CWops members who are interested in becoming Advisors:

Morse Code Fiction and Facts for Students

Fiction: Morse Code is dead and a lost art

Fact: While Morse code has been eliminated by the FCC in the United States and other Telecommunications Authorities around the world as a requirement for obtaining an Amateur Radio License, Morse Code or CW remains an active and viable operating mode

Fiction: Nobody uses Morse Code in Amateur Radio

Fact: Morse Code is used by amateur operators around the world every day

Fiction: Morse Code is very difficult to learn

Fact: Morse Code is NOT difficult to learn if proper methods are employed

Fiction: I am too old to learn or improve my skill in Morse Code

Fact: Most anyone can learn and improve Morse Code skill if they are willing to do so

Fiction: Memorizing all the Morse Code letters and numbers is the only way to learn

Fact: Memorizing letters and numbers is the an inefficient way to learn Morse Code

Fiction: Slow speed Morse Code is the only way to learn

Fact: Slow speed Morse Code is inefficient - students can learn at 20 WPM or more

Fiction: I must learn all the letters and numbers before I can learn Morse Code

Fact: Students can learn to hear complete words as soon as T, E and A are taught

Fiction: I must learn to receive before I can send Morse Code

Fact: Students should send as soon as they learn the first three letters

Fiction: I don't have time to learn Morse Code

Fact: If you have the desire and fifteen minutes a day to devote, you can learn Morse

Fiction: I can learn Morse Code on my own

Fact: Perhaps you can but interactive learning with an advisor is the best way to learn

Morse Code Fiction and Facts for Advisors

Fiction: My method of teaching and mentoring is the one and only way to teach

Fact: If your method works use it, we are never too old to learn or use new tools

Fiction: I don't have time to teach or mentor

Fact: If you have forty five to sixty minutes twice a week to devote, you can be an Advisor

Advisor Fiction: I don't have the tools necessary to become an Advisor

Fact: CW Advisor resources provide tools of the trade to be a CW Academy Advisor

Fiction: Teaching or mentoring is no fun

Fact: Teaching and mentoring provides immediate gratification - try it

CW Academy Student Groups

Beginner

Individuals with limited or no prior experience with Morse Code

Class Objectives:

- Learn Morse Code characters (letters, numbers, and some punctuation)
- Learn to head copy and send Morse Code
- Learn on-air protocols of a basic QSO
- Use skills for on-air basic QSOs

Basic

Familiarity with Morse Code characters and desire to increase proficiency

Class Objectives:

- Increase head copy and send skills using Instant Character Recognition
- Increase skills for on-air conversational QSOs
- Introduction to contesting skills

Intermediate

Operating 10 plus wpm and desire to increase proficiency for contests, DX and ragchews

Class Objectives:

- Increase copy and send skills by use of CW apps
- Increase head copy skills
- Recognize words as sounds
- Increase on-air experience with various types of QSOs

Advanced

Operating 15 plus wpm and desire to increase proficiency for higher-speed on-air activity

Class Objectives:

- Increase head copy and send skills for higher-speed on-air activity
- Increase on-air experience with various types of higher-speed QSOs
- Increase contesting skills to 25 plus wpm
- Recognize phrases as sounds
- Learn to copy from behind
- Increase overall skills to become considered for CWops membership

CW Academy Advisor Guidelines

Advisor Guidelines are provided as a form of standardization for CW Academy teaching and mentoring methods. While Advisors have individual preference; we are never too old or to experienced not to realize that advances in research and technology provide new methods for teaching and learning. CW Academy will continue to provide resources and and reference materials - we can help each other. Advisors are encouraged to provide guidelines and suggestions to CW Adademy

Recommended Advisor guidelines for teaching any of the Class Levels

Before you start to teach or mentor:

- Interview students with a phone call and get to know them before you start teaching
- Determine student's level of proficiency and problems they face
- If you feel you are not up to meeting a student's needs, ask that they be reassigned
- Establish a teaching plan to address individual student's proficiency or problems
- Establish a time-line for teaching and mentoring based on student goals
- Decide if you will use on-the-air or Internet conferencing to teach or mentor
- Consider times, propagation, and frequencies for on-the-air sessions
- Internet based training allows you to see and hear students and their reactions
- There is no better way to teach and mentor students than one-on-one interactivity

Preparation

- Determine how you can best teach or mentor individual student needs
- Define mutually acceptable goals or objectives and work to achieve them
- Fifteen minute sessions work best - too much too often is overwhelming
- Schedule regular on-the-air or Internet Conference sessions
- Plan and assign 60 minute homework - self practice assignments

Interactive teaching and mentoring

- Teach students to learn CW as a second language
- Emphasize hearing the sound and rhythm of complete words
- Send characters and numbers at 20 WPM leaving spacing between as required
- Have students send back characters, words, phrases etc. as soon as they are heard
- Use 2 letter groups, three and short phrases for initial teaching and mentoring
- As students progress, reduce spacing between characters
- Move on to short sentences, questions, call signs, five letter and mixed groups
- Teach how to copy behind to prevent anticipation
- Progress to two, three and four word phrases

As you teach or mentor

- Use "Old Novice Sub Band frequencies - others may benefit by listening
- Start and end each on-the-air session with "CWA CW Practice" DE Your Call
- Encourage students to practice sending "The Quick Brown Fox" Sentence until they can send the complete sentence without error. When a mistake is made they must start over from the beginning. The Quick Brown Fox sentence includes all 26 letters in the English alphabet. *The quick brown fox jumps over the lazy dogs back*
- Concentrate on overcoming student problems as soon as they are discovered

Learning Morse Code As A Second Language

Children learn to talk during their first two years of life. During the second month of life babies start making random sounds then start to babble and by month four to five random sounds become real words, "mama" and "dada" are typically first words babies speak. Between years one and two babies repeat and associate single words they hear then migrate to combining words into two- to three-word sentences. Children learn, retain and associate word meanings by sound, some may learn as many as ten or more words a day, especially children that have parents that spend time teaching word sounds and associated meanings. The same is true regardless of whatever native language is spoken.

In similar fashion, single words are used when training dogs; "sit, stay, wait and outside" are typically some of the first words dogs learn to understand by associating the sound of a complete word with an action or desired command.

There is a direct correlation to teaching Morse Code to a beginner and mentoring an individual that has experience in CW. Every letter, number and punctuation mark used in CW has a distinct sound and rhythm regardless of the speed they are sent and the same is true for words which raises five important questions:

1. Which is the most effective method for teaching Morse Code to a beginner
2. What sequence of letters should be used
3. What speed should be used to teach and mentor CW
4. What spacing between characters should be used
5. Is there a proven method to answer questions 1 - 4

If we answer question 5 first, answers to questions 1 - 4 are simple and the task becomes easy; the method is outlined below.

Each CW Academy Advisor will have their own preferred teaching method. However, the teaching sequence and method outlined below has proven successful for many years and is offered as a recommendation.

Teach and mentor Morse Code in the same way and manner as babies learn to talk and dogs learn commands; make Morse Code an understandable language versus teaching students to memorize characters. Teach letters in sequence as they appear by frequency of usage in English or student's native language:

Group One E,T,A,O,N,I,R,S (64%)

Group Two H,D,L,U,C (19-20%)

Group Three M,W,F,Y,P,G,B,V (15%)

Group Four K,J,X,Q,Z (1-2%)

Most used first letters by frequency of use: T,A,S,O,I,C,W,P,B,F,H,M

Last Letter Most Used Frequency of use: E,T,S,D,N,R,Y,O,F,L,A,G

Double Letter by Frequency of use: ll, ee, ss, tt, oo, mm, ff, pp, rr ,nn, cc, dd

Most used digraphs by frequency of use:

th, he, in, er, an, re, on, en, at, es, ed, te, ti, or, st, ar, nd, to, nt, is, of, it, al, as, ha, ng, co, se, me, de

Note: The thirty most frequent digraphs comprise 1/3 of all letter usage

Digraph: reversal by frequency of use

er-re, es-se, an-na, it-ti, on-no, en-ne, ot-to, ed-de, st-ts, at-ta, ar-ra, in-ni

Trigraphs: by frequency of use

the, and, tio, ati, for, tha, ter, res, ere, con, ted, com, hat, ent, ion, nde, has, ing

CW Academy Advisor Teaching Recommendations

- Teach and mentor emphasizing the sound and rhythm of Morse characters, numbers and punctuation as demonstrated in The Morse Song and associated teaching MP-3 clips
- Follow the recommended letter teaching sequence for individual letters, digraphs and simple words
- Start with T, E and A sent 20 - 25 WPM leaving space between characters
- As students progress shorten the spacing and also slightly increase speed without informing the student
- Use interactive teaching, students are taught to recognize letters in their head and send them back or verbally repeat if working in person or using video conferencing
- Immediately combine all three letters to form simple words EAT, ATE, TEA, TAT, TEE
- Continue adding letters from the sequence matrix and use them to form words
- Progress to simple phrases using common words for example: I ate, we eat, my dog, her cat, etc.
- Any time a student has a problem or issue, immediately stop teaching and help overcome the problem by addressing the cause
- Morse Code Song MP-3 Files and Instructions listed in Advisor Tools can be used as teaching and homework assignments and are also useful in helping students overcome a number of typical problems associated with learning and improving Morse Code proficiency

Typical problems associated with learning Morse Code

Inability to distinguish timing
Transposition of Dits and Dahs
Lack of confidence
Mental fatigue

Tone deafness
Counting Dits and Dahs
Easily discouraged
Lack of attention

Anticipation
Inability to break old habits
Lack of commitment
Memorization vs. hearing

Letter, Diagraph and Word Teaching Segments

SEGMENT

ONE

LETTERS E T A O N I R S

SEQUENCE

DIAGRAPHS

TRIGRAPHS

THREE LETTER WORDS

E T	ET	TE									
A O	AO	OA	AOE	OAT	TOE	EAT	TEE	OAR	TEN	TAT	EAR
N I	NI	IN	NIA	INE	NAT	TEA	OAT	ONE	NET	SIN	EON
R S	RS	SR	RSE	SRO	RAT	SET	RAN	SAT	ATE	TAR	SIR

SEGMENT

TWO

LETTERS H D L U C

SEQUENCE

DIAGRAPHS

TRIGRAPHS

WORDS

H D	HD	DH	HDL	DLU	HAS	HER	HID	HIS	HAD	SET	SOD
L U	DU	UL	LDH	ULD	DOT	DIN	DAN	DID	DUE	TON	LED
C	CH	DC	CUD	DHC	CAN	CAD	CUT	COT	LAD	SIN	CAT
	EC	LN	RC	DOS	COD	HOT	HER	HAT	HIS	NOT	SAD

SEGMENT

THREE

LETTERS M W F Y P G B V

SEQUENCE

DIAGRAPHS

TRIGRAPHS

WORDS

M W	MW	WM	MWF	YWM	MET	WAR	FOR	YEN	PAN	GOT	VET
F Y	FY	YF	FYW	WYF	FAT	YET	SOP	GET	VIE	HUG	BUT
P G	PG	GP	FPG	GYP	PAD	FIN	LID	FUN	WOW	RIP	URN
V B	VB	BV	BVG	VBG	DID	BIN	YES	LOG	SAG	URN	WIG

SEGMENT

FOUR

LETTERS

K J X Q Z

SEQUENCE

DIAGRAPHS

TRIGRAPHS

WORDS

KJ	KJ	JK	KJX	JXK	KIN	JOG	NAB	PIG	JAR	BAD	VIE
XQ	XQ	QX	XQK	QXJ	QUE	XOR	ZIP	YOU	FUN	MOW	YES
Z	ZK	XZ	ZXK	ZJQ	ZOO	JOY	ZIN	SOW	PIN	WHY	NIP
	KJ	XJ	JZX	XQZ	OAK	QUE	GUN	YET	JUG	DAB	JET

Once students are proficient in copying and sending letters, digraphs, trigraphs and simple words move on to short phrases, common words listed. As proficiency increases move on to numbers and common punctuation, Domestic and Foreign Call Signs, Q Signals, and common ham radio abbreviations then QSO exchanges and finally contest type exchanges if desired.

By all means, encourage students to get on-the-air and practice their newly learned Morse Code Language...

One-Hundred Most Commonly Used English Language Words

the	at	there	some	my
of	be	use	her	than
and	this	an	would	first
a	have	each	make	water
to	from	which	like	been
in	or	she	him	call
is	one	do	into	who
you	had	how	time	oil
that	by	their	has	its
it	word	if	look	now
he	but	will	two	find
was	not	up	more	long
for	what	other	write	down
on	all	about	go	day
are	were	out	see	did
as	we	many	number	get
with	when	then	no	come
his	your	them	way	made
they	can	these	could	may
I	said	so	people	part

CW Academy Reference Materials and Tools

Tools for new students or those having problems learning CW word sounds and rhythm

- Morse Code Rhythm Song
<http://www.youtube.com/watch?v=FcTM35VsYo4&feature=related>
- MP3 Version of Morse Code Rhythm Song
<http://www.kb7tbt.com/vidclips/MorseAlphabetNoVoice.mp3>
- Morse Code Song MP-3 Sequence Files One, Two, Three and Four

Advisor Homework Assignment Tools

- Morse Code Translator - Text to Morse Practice Tool (Nice options - good practice tool)
<http://morsecode.scphillips.com/jtranslator.html>
- Morse Runner - Self teaching and practice Tool (Good for homework assignments)
<http://www.dxatlas.com/MorseRunner/>
- G4FON Morse Code Trainer (Another homework assignment tool)
<http://www.g4fon.net/CW%20Trainer.htm>
- Learn CW Online (OK for homework practice)
<http://lcwo.net/>
- RUFZ Call Sign Pile Up Trainer (Excellent Pile Up trainer for Group III. students)
<http://www.rufzxp.net/>

Internet Based Training Tools - A Free Internet Video Conferencing Application

Zoom - Students and Advisors can see and hear each other as send and receive. Advisors can train multiple students in a virtual video conference room.

- <http://www.zoom.us>