CW Academy Beginner CW Curriculum

Practice Instructions and Homework Assignments

(Fourth Edition)

(Release: 4.2.8.1 Mar, 10 2024)

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This document was inspired by "Practice Instructions and Homework Assignments for the Beginner CW Academy Course" (Third Edition) by : Rob Brownstein, K6RB, 2016-2022.

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Document revision history and copyright notice
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Revision History:

Date	Revision	Author	Description
2016	2.0.0	Rob Brownstein, K6RB	Original Document
2019	2.1.0	Bob Carter, WR7Q	Change course name from Level 1 to Beginner.
2020 – Apr	2.2.0	Bob Carter, WR7Q	Change Session 7 Sending Segments to Copying Segments.
2020 – Sep	2.3.0	Bob Carter, WR7Q	Added Zoom .
2022 – Jul	3.0.0	Bob Carter, WR7Q	Added 6 WPM speed suggestion for class completion, daily practice time and WPM to 25.
2023 – Feb	3.1.0	Bob Carter, WR7Q	Moved 'Z' to section 10 from 9.
2023 – Apr	3.2.0	Bob Carter, WR7Q	Changed 'sk' to <SK>; removed '-' from sections 11 thru 13.
2023 – Jul	4.0.0	Ken Rainey, AC5EZ	Creation of version 4.0 CW Academy Beginner CW Course. "Practice-Instructions-and-Homework-Assignments-Beginner-CW" Initial document release.
2023 – Jul	4.1.0	Bob Carter, WR7Q	Minor corrections.
2023– Aug	4.2.0	Ken Rainey, AC5EZ	Minor format corrections.
2023– Sep	4.2.1	Ken Rainey, AC5EZ	Replaced "RIG" with "STN" in advanced section of sessions 3,4,5,6. Session-07 changed characters learned from 24 to 29.
2023-Sep	4.2.2	Ken Rainey, AC5EZ	Session-04 changed 1 to L. copy phrases changed BOB to TOD. Sending Phrases changed BOB to TOD. MCT script updated to reflect changes. Added Release note to page one.
2023-Sep	4.2.3	Ken Rainey, AC5EZ	Session-06 replaced LOG with DWN, UP with MY, YOUR with YRS. Sending Phrases: Removed "?" to match

			copy phrases. Replaced "HW CPY" with "UR NAME?".
			Session-07 removed B4 from abbreviations.
2023-Oct	4.2.4	Ken Rainey, AC5EZ	Added CPY to Appendix A .
			Added CPI and CPY to Appendix D.
			Added **Numbers** copy segment in Session-02.
2023-Nov	4.2.5	Ken Rainey, AC5EZ	Added the comma "," to session-06.
			Moved the letter "Q" from session-10 to Session-07.
			Added pro-sign <AR> to session-08
2023-Dec	4.2.7	Ken Rainey, AC5EZ	1. Replaced the word "segment(s)" with the work "practice".
			2. Removed *CW Abbreviations* from all Additional Practice sections
			3. Added Characters to sending practice, section in all sessions.
			4. Changed Sending Drill font to Courier.
			5. Removed Additional practice and made it Daily Sending Drill.
			6. Replaced Morse Code Trainer data with new Images and data.
			7. Miscellaneous formatting updates.
2023-Dec	4.2.7.1	Ken Rainey, AC5EZ	1.Fixed typo in "**Preparing for Copy practice**" section **Repeat on** Changed "t" to "text".
			Changed color of Q from **red** to **black**.
			2. Fixed typo on page 6.
			3. Added "." to *new characters this session*.
2024-Jan	4.2.7.2	Ken Rainey, AC5EZ	Updated the default settings in Appendix H & I to Match the MCT online training tool.
2024-Jan	4.2.7.3	Ken Rainey, AC5EZ	Session-06: changed NANE to NAME, MY to MI.
			Updated QRL definition in Appendix C.
			Removed OC from session-04.
			Removed OT from session-02.
			Removed OC, OT, OM from Appendix B.
2024-Mar	4.2.8	Ken Rainey, AC5EZ	Removed <BK> as a prosign.
2024-Mar	4.2.8.1	Ken Rainey, AC5EZ	Added <BK> back into syllabus with a note in Session-10 explaining usage of BK and <BK>.

Welcome to CW Academy's Beginner Morse code (CW) course

Before starting the Beginner CW (Morse code) course assignments, you should understand how CW Academy expects you to practice during the eight-week course. The Beginner CW course uses an online learning tool called Morse Code Trainer (MCT). A link will be shared to the online learning tool in a moment but first let's go over a few ground rules.

The Beginner Morse code course is broken up into 16 sessions. Students will meet with an advisor twice-weekly online via video conference. Students are expected to practice the assignment for the current session. For example, practice session-01 before meeting for the on-line session-01 so the advisor can assess your progress and address any problems that arise. So, practice the session-01 assignments for the days preceding session-01, and then practice the session-02 assignment for the days preceding session-02 meeting, and so on.

There are four key tools that will help ensure your success in this course. This curriculum workbook. This is your guide and workbook assignment document. It is laid out in a step-by-step fashion for you to follow.

Second is an online video conference tool like Zoom, Skype, Meet, meet.jit.si, etc. which enables students and advisors to meet in a virtual training environment two times per week. This allows everyone to see and hear each other, and the code being sent.

Third is a daily practice log. Keeping a log of your practice is essential. A Log will show where progress is made and the characters that need more practice. Create a spreadsheet, a handwritten paper log, or a paper tablet. Anything that works. Appendix J is a sample log that can be printed out and used.

The last and most important tool is MCT online learning tool. **MCT** is an online learning tool that is pre-loaded with curriculum workbook assignment sessions. Play the characters, words, abbreviations, and numbers over and over, until you feel comfortable that you recognize each letter and number sound pattern. **Note**, we did not say each letter or number in dots and dashes or dits and dahs – we said sound the pattern. That's the secret to learning Morse code in a way that will scale up in speed as you progress. Learn Morse code like it is a new language. Listen to the complete sound of the characters being presented not the individual dits and dahs that make up the character.

At the beginning of Session-11 you will be introduced to a new tool called Instant Character Recognition (**ICR**). All the letters, numbers, punctuation, and pro-signs have been presented in the learning tool. It is now time to try your hand ICR. The purpose of this tool is to get you started learning to copy the sounds in your head. Work through all the characters you have learned.

Multiple paths to take on your Morse code journey

There are many paths to take in your Morse code journey like contesting, rag-chewing, or short QSOs. And they all start with learning the basic character recognition. This course will help you start that journey. Good luck and enjoy the ride!

Suggested readings for incoming students

1. *Instant Recognition* by Nancy Kott, SK,WZ8C.
   Nancy talks about building your Morse code speed. She also talks about Instant recognition and how to find out if you have instant recognition. She goes on to explain how to gain proficiency as well as CW speed using instant recognition.

2. *The FOC Guide to Morse Code Proficiency* by Gary Hinson, ZL2IFB.
   In the document Gary goes into great detail about Morse code speed, and timing that is worth reading several times to understand the full meaning of the rhythm of Morse code (CW).

3. *Controlling Frustration and Nervousness* by Bill Leahy, K0MP. Bill is a CWops advisor and in this document, he brings up some really good points everyone should know about while on their Morse code journey. He talks about the best ways to study and how to overcome frustration. It is well worth your time to read it.

These documents can be found on the CWops website under:
[Additional Info & Practice Material for Students](#).

A few Words on Learning Morse code

Morse code is an audio language. We don't write the dits and dahs that we hear. We train our brain to translate the dit-dah patterns into characters. These characters are then assembled into words, phrases, and sentences that we humans can understand. Learning to copy Morse code in your head takes practice. You will not become proficient in Morse code without practice and a lot of it.

As with learning anything new we need to start with the basics. Learning the alphabet, numbers, punctuation, and some basic pro-signs are what this class is designed to do.

There is a pre-defined order in the learning process and if you follow the curriculum guidelines by the time you reach session-16 you will be ready to get on-air and enjoy your newfound skill.

Introduction to Morse Code Online Trainer (MCT)

MCT is an online practice tool designed to work with this CW Beginner curriculum workbook.
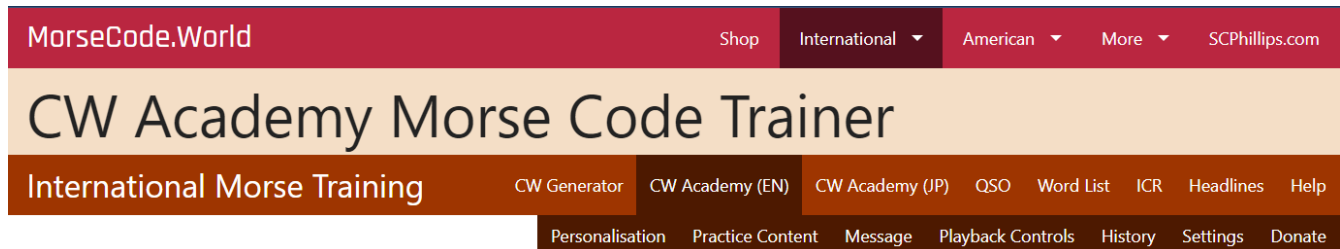
This link will take you to the **Online MCT Tool**. Bookmark it so you can go to the **MCT** tool anytime. Your advisor can assist you if necessary.

Personalization:

You will need to enter this information when you get to session-11. You can enter it now or wait until you reach session-11. It's up to you. You can fill in this information at any time.
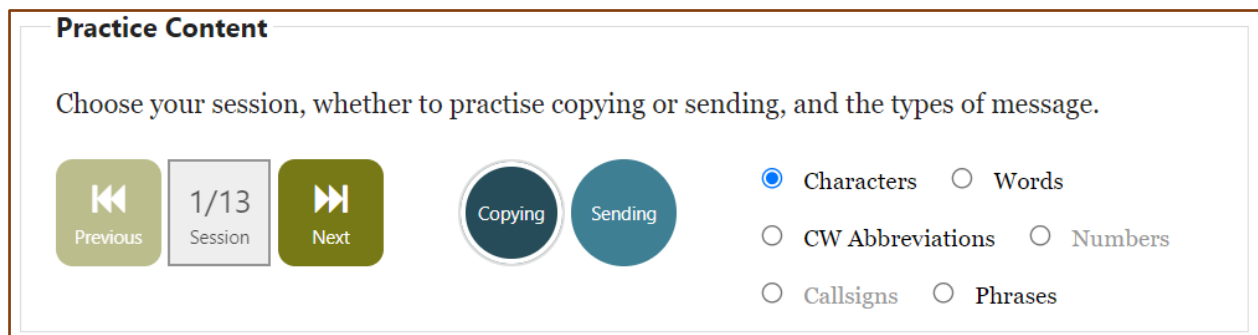
Preparing for Copy practice.

Your copy practice will be set to 25 CPM with a Farnsworth of 6 CPM for a good reason. You need to be able to translate Morse code at a high character speed that prevents you from counting the dits and dahs. You can Increase the character speed if necessary. A brief explanation of Farnsworth timing can be found in Appendix K.

Follow these steps when you are ready to start practice:

- Open the online MCT tool
- **Practice Content**
  - 1: Select the **Copying** button. **MCT** tool will autoload copy practice settings.
  - 2: Select the Session (1 to 13) that you want to practice.
  - 3: Select the *Message* Type to practice.

Start each new copy session with Characters. Once you have them committed to memory move to Words the CW Abbreviations, Numbers, Callsigns, and finally Phrases. If a message type is grayed out that means they are not available for that session.

In **Play options** there are three repeat settings:

- **Off** no repeat. Plays the message type selected one time.
- **Repeat On** will repeat the message text selected over and over again.
- **Repeat-one** will repeat the single message selected again and again.

Once you have learned to copy all the characters in a message type try setting **Repeat on** and turning **Random on**.

Your advisor can explain how each repeat button works.

Preparing for Sending practice.

Your sending practice will be set to 15 CPM with a Farnsworth of 6 CPM for a good reason. You need to be able to send Morse code at a character speed that allows you to form good rhythm and timing habits. Try to stay at the 15 CPM character speed. It is plenty fast to carry on an "**ON-THE-AIR**" QSO. As you progress try increasing the Farnsworth speed.

- If not already open start the online MCT tool
- **Practice Content**
  - 1: Select the **Sending** button. **MCT** tool will autoload sending practice settings.
  - 2: Select the Session (1 to 13) that you want to practice.
  - 3: Select the *Message* Type to practice.

Start each new sending session with Characters. Once you have good rhythm and timing move to Words the CW Abbreviations, Numbers, Callsigns, and finally Phrases. If a message type is grayed out that means they are not available for that session.

In **Play options** there are three repeat settings :

- **Off** no repeat. Plays the message type selected one time.
- **Repeat On** will repeat the message text selected over and over again.
- **Repeat-one** will repeat the single message selected again and again.
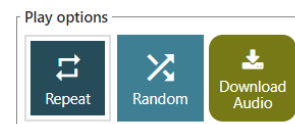
Once you have learned to send all the characters in a message type try setting **Repeat-on** and turning **Random on**.

Sending or Keying Morse code.

Learning to copy Morse code uses only your brain to memorize and to recognize letter patterns as words or phrases. Learning at a high character/per/minute (CPM) rate allows you to hear the characters as a unique sound pattern not the individual dits and dahs that make up the character.

Sending involves mechanical motion and dexterity. You form the character or word in your brain, the brain tells the hand to move in certain ways, and then the hand reacts to the brain's command. Wow, that's a lot of steps. Well actually, it all happens very fast but the problem most beginners have is not knowing what to send but learning the hand motions needed to form the dit dahs patterns with a mechanical keying device. This is why your sending practice is set to a slower CPM rate. Trying to send as fast as you can copy will only lead to frustration. The question a lot of new CW operators is how to send faster. The question should be how to send well-formed, readable code that another person can copy. You do this be learning to send a speed that is fast enough to make the conversation meaningful yet slow enough for the message to be understood by the other person. Speed will come with practice and getting on the air and making contacts is the goal of this course.

Keep track of your time by watching the Elapsed practice timer in the Playback Controls section. Try to limit your practice time to around 15 minutes a session.

How the sessions are arranged

Let us look at an example of how to get started. Your first curriculum workbook assignment is to play the following messages, one at a time, until you feel you can recognize them. New characters introduced in each session highlighted in **RED**.

Daily Sending Drill

We offer some additional practice in the form of a sending/keying drill in each session to help you practice sending each character. For example, the *Daily Sending Drill* is designed to help master the spacing and rhythm of Morse code by sending each character repeatedly. One way to judge an individual's sending skill is to record what is being sent and then play it back and try to copy your own sending. You can use a phone or a PC to record your sending.

Learning Morse code takes determination and practice to master. Repetition is the best way to lock in the sound and rhythm of the characters you are learning. Sending the *Daily Sending Drill* is a great way to practice the CW rhythm. Once you have learned the characters, begin each session by sending the Daily Sending Drill several times to warm up your keying hand and to get your brain ready to learn.

If you decide to do the daily sending drill, please note that it does not appear in the online Morse Code Trainer tool. It is presented in each section to help you gain proficiency in Morse code sending.

Daily Sending Drill:

```
A A A A A      E E E E E      N N N N N      T T T T T
```

Before meeting for session-01, you should be able to recognize and send the patterns using the character's '**T**', '**E**', '**A**' and '**N**.' And be able to recognize the words 'TEA,' 'TEN,' 'NET,' and 'TEE.' And be able to do that at a character speed of at least 25 WPM and Farnsworth spacing of at least 4 WPM or higher.

During this first session, your advisor will be sending those characters and words to everyone, individually, to see if you have learned them. Then, he/she will ask individuals to send the characters and words with their keyer to assess how well everyone has learned good element (dit or dah) timing and spacing.

Practice Sessions and Workbook Assignments General Information

Sessions 1 through 10 will introduce new letters, numbers, punctuation, and pro-signs. Sessions 11 through 13 is where you will put all that has been learned into practice. The building of a simple QSO is introduced here as well as simple contesting practice. Sessions 14 through 16 are set aside for your advisor to help you prepare for getting "**ON-THE-AIR**".

Sessions 1 through 10 are broken down into several parts. First will be the setup instructions for the online Morse Code Trainer program. Start with the initial setup instructions mentioned above.

- Characters for this session are those you will be working on in this session. New characters introduced in the current session will be shown in **red**.
- Characters learned (x) is a running list of all the letters, numbers, punctuation, and pro-signs that have been presented so far.

The next part is the **Copy Practice** portion of the session. The message types presented here are pre-loaded in the online MCT tool. They are listed here for reference so you can see what will be presented in the online MCT. The **Copy Practice** portion has section labels.

- ▪ *Characters*
- ▪ *Words*
- ▪ *CW Abbreviations*
- ▪ *Numbers*
- ▪ *Callsigns*
- ▪ *Phrases*

The labels are there to better understand what you are learning. Notice that some words look a little strange and you might think they are miss-spelled. Actually, these are CW abbreviation words we use to convey our message in as few keystrokes as necessary. Refer to Appendix A for the definition of the shorthand words and how they are used in a QSO.

This is followed by the **Sending practice** section. When entering the sending portion on the MCT tool, listen to the message and then try emulating the sounds with a key/keyer. The **Sending practice** portion is also divided into labels.

- *Characters*
- *Words*
- *CW Abbreviations*
- *Numbers*
- *Callsigns*
- *Phrases*

At the end of session 10 there is an introduction to Instant Character Recognition (ICR). ICR is the process of listening to and recognizing the characters without writing them down. Yes, using the conscious and sub-conscious portions of the brain. If you want to increase your Morse code speed above 13 to 15 WPM ICR is the only way to go.

Your advisor can help you to get started using the ICR tool

 if you choose to use them.

Sessions 11-13 is also where you will put your knowledge to use by going through QSO scripts.

Sessions 14 through 16 are set aside for your advisor to help you prepare for getting "**ON-THE-AIR**".

Session 01:

Characters for this session: **A E N T**
Characters learned **4**:   A E N T

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

A T E N

Words:

TEA	TEE	EAT	ATE	AT	TAT	TEEN
NEAT	TEN	TAN				

CW Abbreviations:

AA	ANT	NET

Phrases:

EAT AT TEN	AN ANT	AT TEE	A NEAT ANT

Sending practice

Characters:

A T E N

Words:

TEA	TEN	TEE

CW Abbreviations:

AA	ANT	NET

Phrases:

EAT AT TEN	AN ANT	AT TEE	A NEAT ANT

Daily Sending Drill:

T T T T T	E E E E E	A A A A A	N N N N N

Session 02:

Characters for this session:	**A E N T S I O 1 4**
Characters learned 9:	A E I N O S T 1 4

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

A E N T S I O 1 4

Words:

TEN	TON	TIN	TIE	TOE	NO	NOT
NOTE	IT	AT	ONE	NEAT	NET	NITE
TOES	STONE	TEASE	NOISE			

CW Abbreviations:

ES	SAE	SASE	SN	STN

Numbers:

1441	4114	1414

Callsigns:

N1AS	N4ON	S41T	NO1S	AI1E	IT4O	EA1ON	ES4IT

Phrases:

NO NET STN	1 TO 4	ITS A TEST	4 TON STONE

Sending practice

Characters:

AENTSIO14

Words:

TIN	TIE	NO	NOT	IT	AT	ONE

CW Abbreviations:

ES	OT	SAE	SASE	SN	STN

Numbers:

1441	4114	1414

Callsigns:

N1AS	N4ON	S41T	NO1S	AI1E	IT4O	EA1ON	ES4IT

Phrases:

NO NET STN	1 TO 4	ITS A TEST	4 TON STONE

Daily Sending Drill:

```
AAAAA   EEEEE   IIIII   NNNNN   OOOOO
SSSSS   TTTTT   11111   44444
```

Session 03:

Characters for this session: **O I S D H L R 2 5**
Characters learned 15:   A D E H I L N O R S T 1 2 4 5

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

O I S R H D L 2 5

Words:

ALL	TELL	TALL	DEAL	THE	THEIR	DOLL
DELL	HALL	HILL	HOLE	LOAD	LEAD	LATE
LATER	SEAL	SELL	SOLE	SHE	HER	HEAR

CW Abbreviations:

AA	ES	SN	STN	DE	DN	HI
HR	LSN	NR	RST			

Numbers:

142	451	1425

Callsigns:

DL1AT	HH5H	HS1TD	ND2T	NA4T

Phrases:

LSN DN 1	RST IS 555	HAIL ES RAIN	DE NR4DL	LSN DN 2

Sending practice

Characters:

O I S R H D L 2 5

Words:

ALL	TELL	THE	LEAD	LATE	SHE	HER

CW Abbreviations:

DE	DN	HI	HR	NR	RST	TR

Numbers:

142	451	1425

Callsigns:

DL1AT	HH5H	HS1TD	ND2T	NA4T

Phrases:

LSN DN 1	RST IS 555	HAIL ES RAIN	DE NR4DL	LSN DN 2

Daily Sending Drill:

AAAAA	DDDDD	EEEEE	HHHHH	IIIII	LLLLL	NNNNN
OOOOO	RRRRR	SSSSS	TTTTT	11111	22222	44444
55555						

Session 04:

Characters for this session: **R H D L 1 4 C U**
Characters learned 17: A C D E H I L N O R S T U 1 4 2 5

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

R H D L 1 4 U C

Words:

CHAT	CHAIR	CHIN	CHART	OUCH	COUCH	TOUCH
SUCH	TEACH	REACH	SUN	SON	HOLD	TOLD
SAIL	RAIL	TAIL	NAIL	OIL	SOIL	TOIL
COIL	RAIN	CAUSE	SAUCE	TOSS	TOLL	TALL
TELL	CELL	CALL				

CW Abbreviations:

ADR	CL	CS	CUL	DE	DN	ES
NR	RST	SOTA	STN	TU	UR	

Numbers:

4241	1452	5441	2145

Callsigns:

NC5A	NA2T	CU1LL	CO5NO	NU4R	CT1AC	CE1NI

Phrases:

UR RST IS	HR IN UT	CUL TOD	LSN DN 1	SOTA 2514

Sending practice

Characters:

R H D L 1 4 U C

Words:

CHAT	CHIN	TEACH	SAIL	RAIN	TALL	TELL

CW Abbreviations:

CUL	DE	ES	NR	RST	TU	UR

Numbers:

4241	1452	5441	2145

Callsigns:

NC5A	NA2T	NC5A	NA2T	CU1LL	CO5NO	NU4R
CT1AC	CE1NI					

Phrases:

UR RST IS	HR IN UT	CUL TOD	LSN DN 1	SOTA 2514

Daily Sending Drill:

AAAAA	CCCCC	DDDDD	EEEEE	HHHHH	IIIII	LLLLL
NNNNN	OOOOO	RRRRR	SSSSS	TTTTT	UUUUU	11111
22222	44444	55555				

Session 05:

Characters for this session: **U C 2 5 M W 3 6 ?**
Characters learned 22:   A C D E H I L M N O R S T U W 1 2 3 4 5 6 ?

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

U C 2 5 M W 3 6 ?

Words:

WAIT	WALL	WELL	WILL	MALL	MILL	CHUM
MOW	MUCH	SUCH	WATER	WET	WHAT	DEW
DATE	ATOM	TOW	TOWER	WERE	WHERE	WAS
WISH	WASH	MAT	MATT	MEL	HIM	HER
HIS	HW?					

CW Abbreviations:

CS	CUD	CUL	DE	ES	HR	HW?
OM	RST	SHUD	STN	TU	UR	WL

Numbers:

3354	1432	6122	5564	4321	2346

Callsigns:

W3AA	N3AM	DM5RA	W6AM	N2AT	RW5L	ON4UN

Phrases:

NAME?	UR RST IS 56N	CU TMW DON	SWR IS 2 TO 1	CUL TOM

Sending practice

Characters:

U C 2 5 M W 3 6 ?

Words:

WAIT	WELL	MALL	MILL	WET	DATE	

CW Abbreviations:

CUL	DE	ES	HW?	RST	TMW	TU	UR

Numbers:

3354	1432	6122	5564	4321	2346	

Callsigns:

W3AA	N3AM	DM5RA	W6AM	N2AT	RW5L	ON4UN

Phrases:

NAME?	UR RST IS 56N	CU TMW DON	SWR IS 2 TO 1	CUL TOM

Daily Sending Drill:

```
AAAAA   CCCCC   DDDDD   EEEEE   HHHHH   IIIII   LLLLL
MMMMM   NNNNN   OOOOO   RRRRR   SSSSS   TTTTT   UUUUU
WWWWW   11111   22222   33333   44444   55555   66666
?????
```

Session 06:

Characters for this session: **M W 3 6 F Y ,**

Characters learned 25:   A C D E F H I L M N O R S T U W Y 1 3 4 2 5 6 , ?

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

M W 3 6 F Y ,

Words:

YOU	TOY	FOOT	TOOTH	ROOT	CUTE	NOISE
LARRY	ROY	TON	TEETH	FEET	YET	THEY
SAY	RAY	HAY	YRS	FAIR	FARE	FAR
FUR	FURRY					

CW Abbreviations:

CUL	CW	DE	DWN	ES	FER	HR
HW?	NAME	RF	RST	SWR	TU	MI

Numbers:

1512	3316	4352	6135

Callsigns:

F5IN	YO1AR	HH5H	NO3M	AA3U	S52R

Phrases:

NAME IS WILL	UR RST 56N	HOME IS CODY, WY	UR NAME?

Sending practice

Characters:

M W 3 6 F Y ,

Words:

CUTE	SAID	RAID	STIR	HIM	FEET	HW?

CW Abbreviations:

CUL	DE	ES	FER	DWN	TU	UR

Numbers:

1512	3316	4352	6135

Callsigns:

F5IN	YO1AR	HH5H	NO3M	AA3U	S52R

Phrases:

NAME IS WILL	UR RST 56N	HOME IS CODY, WY	UR NAME?

Daily Sending Drill:

```
AAAAA   CCCCC   DDDDD   EEEEE   FFFFF   HHHHH   IIIII
LLLLL   MMMMM   NNNNN   OOOOO   RRRRR   SSSSS   TTTTT
UUUUU   WWWWW   YYYYY   11111   22222   33333   44444
55555   66666   ?????
```

Session 07:

Characters for this session: **F Y 3 6 G P Q 7 9 /**
Characters learned 31:   A C D E F G H I L M N O P Q R S T U W Y 1 3 4 2 5 6 7 9 / , ?

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

F Y 3 6 G P Q 7 9 /

Words:

PAGE	PAPER	PEPPER	GLAD	GLARE	LARGE	LEDGE
GEORGE	GEO	CHAS	CHASE	CHANGE	PEG	PUG
PIG	PEN	PENCIL	PIPE	PIT	GAIN	GARAGE
GUARD	GAS	GUS	CHUG	YES	YET	YONDER
COY						

CW Abbreviations:

AGN?	CPI	CUL	DE	GM	GE	LID
OM	OP	QTH	RIG	RST	QRM	TU

Numbers:

7423	14253	579	599	2N222

Callsigns:

G4AN/3	N1AR/5	W9UCA/9	W3/PY2AA	F6/N6AM

Phrases:

GD SIG RON	SOLID CPI MAT	RIG IS ICOM	QTH IS TRAPPE, MD	HW CPI?

Sending practice

Characters:

F Y 3 6 G P Q 7 9 /

Words:

PAGE	GLARE	LEDGE	GEORGE	PEN	PIT

CW Abbreviations:

AGN?	CPI	CUL	DE	GM	GE	LID
OM	OP	QTH	RIG	RST	QRM	TU

Numbers:

7423	14253	579	599	2N222

Callsigns:

G4AN/3	N1AR/5	W9UCA/9	W3/PY2AA	F6/N6AM

Phrases:

GD SIG RON	SOLID CPI MAT	RIG IS ICOM	QTH IS TRAPPE, MD	HW CPI?

Daily Sending Drill:

AAAAA	CCCCC	DDDDD	EEEEE	FFFFF	GGGGG	HHHHH
IIIII	LLLLL	MMMMM	NNNNN	OOOOO	PPPPP	QQQQQ
RRRRR	SSSSS	TTTTT	UUUUU	WWWWW	YYYYY	11111
22222	33333	44444	55555	66666	77777	99999
/////	,,,,,	?????				

Session 08:

Characters for this session: **7 9 / B V <AR>**

Characters learned 34: A B C D E F G H I L M N O P Q R S T U V W Y 2 3 4 5 6 7 9 / , ? <AR>

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

B V 7 9 / <AR>

Words:

VOTE	VAT	VIEW	WAVE	PAVE	SAVE	VOW
VALVE	SOLVE	VOLT	VAULT	BAD	BODY	BORE
BORN	BARN	BARNEY	BRAD	BREAD	BED	BETTER
BEST	BILL	BUILD	BUILT	BOLT	BULB	BLAME
BLEND	BLAND	BLOW				

CW Abbreviations:

73	AGN	B4	BURO	CS	CUL	DE
DN	EFHW	ES	FB	FER	GA	GE
HI	HW?	LID	OP	POTA	PSE	PWR
QRM	RCVR	RPT	SIG	TU	UR	<AR>

Numbers:

6146	5514	2345	9765

Callsigns:

BV2AA	BA1RO	WB2AE	N6RB/4	W2/VE1AR	VE2/W2LE

Phrases:

NAME IS BOB	NAME IS BILL	SOME QSB	NAME IS VAL
UR RST IS 559	UR RST IS 459	BENS BEST BENT WIRE	GOING QRT

Sending practice

Characters:

B V 7 9 / <AR>

Words:

VOTE	VALVE	BED	BEST

CW Abbreviations:

73	AGN	FB	FER	HW?
QRM	RST	<AR>		

Numbers:

6146	5514	2345	9765

Callsigns:

BV2AA	BA1RO	WB2AE	N6RB/4	W2/VE1AR	VE2/W2LE

Phrases:

NAME IS BILL	NAME IS TED	UR RST IS 579	BENS BEST BENT WIRE

Daily Sending Drill:

```
AAAAA   BBBBB   CCCCC   DDDDD   EEEEE   FFFFF   GGGGG
HHHHH   IIIII   LLLLL   MMMMM   NNNNN   OOOOO   PPPPP
QQQQQ   RRRRR   SSSSS   TTTTT   UUUUU   VVVVV   WWWWW
YYYYY   11111   2222    33333   44444   55555   66666
77777   99999   /////   ,,,,,   ?????
```

Session 09:

Characters for this session: **B V J K 0 8 <BT>**

Characters learned 39:   A B C D E F G H I J K L M N O P Q R S T U V W Y
1 2 3 4 5 6 7 8 9 0 / , ? <BT> <AR>

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

Characters:

B V J K 8 0 <BT>

Words:

JACK	JAY	JOHN	JIM	JERRY	BACK	RACK
TACK	TECH	TACH	REACH	EACH	TEACH	HELP
HIGH	HILL	FACT	FACE	FAR	FEAR	THEN
THEIR	HIM	HER	HIS	HERS	THEM	THEY
THEIR	SWITCH	LINE	ANT	DIPOLE	VERTICAL	OHMS
HOME	AWAY	TEST	ASIA	AFRICA		

CW Abbreviations:

AGN	BK	CPI	CUAGN	DE	ES	FB
GUD	K	OK	OP	R	RCVR	RPT
RST	SK	SKED	TKS	TMW	WKD	YL

Numbers:

807	7300	4250A

Callsigns:

K1JD	N1AR	W2TT	K2UMU	N2NW	VE3NE	VA3KP
K4BAI	N5KO					

Phrases:

HW CPI?	NAME IS JOE	NAME IS JOHN	NAME IS JIM
UR RST IS 579	UR RST IS 339	SRI NO CPY	QRM ON YR SIG

Sending practice

Characters:

B V J K 8 0 <BT>

Words:

JACK	TACH	REACH	EACH	FEAR	HIS	ANT

CW Abbreviations:

K	OK	OP	RPT	RST	SKED	TKS
UR	WKD	YL				

Numbers:

07	7300	4250A

Callsigns:

K1JD	N1AR	W2TT	K2UMU	N2NW	VE3NE	VA3KP
K4BAI	N5KO					

Phrases:

HW CPI?	NAME IS JOE	NAME IS JOHN	NAME IS JIM
UR RST IS 579	UR RST IS 339	SRI NO CPY QRM ON YR SIG	

Daily Sending Drill:

```
AAAAA   BBBBB   CCCCC   DDDDD   EEEEE   FFFFF   GGGGG
HHHHH   IIIII   JJJJJ   KKKKK   LLLLL   MMMMM   NNNNN
OOOOO   PPPPP   RRRRR   SSSSS   TTTTT   UUUUU   VVVVV
WWWWW   YYYYY   11111   2222    33333   44444   55555
66666   77777   88888   99999   00000   /////   ,,,,,
?????   <AR><AR><AR><AR>        <BT><BT><BT><BT>
```

Session 10:

Characters for this session: **K J 8 0 Q X Z . <BK> <SK>**

Characters learned 44:   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 / . , ? <BT> <BK> <SK> <AR>

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

NOTE: There are some that say **<BK>** is not an "official" prosign and should not be sent a one character. Although **<BK>** is used quite often when working POTA and SOTA contacts. As a new Morse code operator, you will hear it sent both ways, **BK** and **<BK>**. **<BK>** is presented here, as a prosign, to offer practice in hearing and sending it as a prosign. Your advisor has the option as to how it is presented.

Copy Practice

Characters:

K J 8 0 X Q Z . <BK> <SK>

Words:

NAME	MEMPHIS	NYC	SF	DALLAS	HOUSTON	TOKYO
PARIS	LONDON	HAMBURG	SYDNEY			

CW Abbreviations:

BTU	CUL	ES	DE	DX	FB	FER
GLD	HR	KW	OP	PSE	RPT	RST
SRI	TKS	TU	VY	WX	XYL	YL

Numbers:

8044	7400	73	88

Callsigns:

ZL2TT	VK4OM	JE1TRV	BA1CW	KH6LC	AL2A	AA3B

Phrases:

U HV QSB	U HV QRM	NAME?	QTH?	QTH IS NY	QTH IS PARIS
PSE QSY TO 7054					

Sending practice

Characters:

K J 8 0 X Q Z . <BK> <SK>

Words:

WL	UR	OK	PSE	RIG	WX	ANT
PWR	KW	OP	TKS	RST	FER	GLD

CW Abbreviations:

BTU	CUL	ES	DE	DX	FB	FER
GLD	HR	KW	OP	PSE	RPT	RST
SRI	TKS	TU	VY	WX	XYL	YL

Numbers:

8044	7400	73

Callsigns:

ZL2TT	VK4OM	JE1TRV	BA1CW	KH6LC	AL2A	AA3B

Phrases:

UR RST IS 579	QTH IS NR TULSA	NAME IS BARRY	UR RST IS 559
QTH IS DAYTON OH	NAME IS JOHN		

Daily Sending Drill:

```
AAAAA    BBBBB    CCCCC    DDDDD    EEEEE    FFFFF    GGGGG
HHHHH    IIIII    JJJJJ    KKKKK    LLLLL    MMMMM    NNNNN
OOOOO    PPPPP    QQQQQ    RRRRR    SSSSS    TTTTT    UUUUU
VVVVV    WWWWW    XXXXX    YYYYY    ZZZZZ    11111    2222
33333    44444    55555    66666    77777    88888    99999
00000    /////    , , , , ,    ?????    <BT><BT><BT><BT>
<BK><BK><BK><BK>               <SK><SK><SK><SK>
<AR><AR><AR><AR>
```

Introduction to Instant Character Recognition (ICR) – Practice

Morse Code Trainer Instant Character Recognition

(ICR) Learning to copy Morse code in your head without using a pen and paper. After you have performed the copying and sending exercises in each session to a point where you can recognize the characters and words it's time to begin working on your ICR skills.

Your advisor can explain and assist you in getting started using the (ICR) tool in your daily practice.

ICR Copying: Select the *CW Academy* tab then select the session(s) you want to practice. When you select the session button the characters presented in this curriculum workbook will be highlighted.

You can add characters or remove characters by simply clicking on each character.

You have three ICR options to work with Individual characters, random none-sense words using the characters in the sessions being practiced, or sentences of various number of words.

For this class you need to focus on single character recognition first. You need to have a good character ICR foundation before advancing to words and sentences.

- Choosing Letters, the program will play each individual letter.
- Choosing words allows you to select how many characters the words should be.
- Choosing sentences allows you to build sentences of various number of words.

Play: You are now ready to practice ICR. Select the next button. Set back with your eyes closed and listen to the characters. visualize the character in your mind before the computer says the character. Keep working on this until you can beat the computer.

When you reach about 75% correct copy it is time to increase the Farnsworth speed by 1 or 2 WPM.

Session 11:

Putting what you've learned into practice.

It's now time to put all the letters, numbers, punctuation, and pro-signs together in QSO scripts that you can use as a model when you get on the air. This session and the next several sessions will give you some actual QSO practice.

Make sure you fill out all the information in the Personalisation section. This information will be used in the copying and sending practice that follows.

For the next six sessions you want to set your character speed to 25+ WPM and Farnsworth set to 6+ WPM. Remove any extra time gap settings you might have set. This is the goal for the beginner class.

Personalisation

For some of the sessions some additional information is needed. This information is not stored on the server.

Your call sign:	Your town/city and state abbreviation:	Your name:
Your Call Sign	Your city/province & state/DX	Your firstname

Your age:	Your power:	Your antenna:
Your Age	Transmitting Power	Your antenna

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

[your callsign] DE K6RB UR RST 579 NR SF <BT>
NAME ROB HW? [your callsign] DE K6RB K

[your callsign] DE N3JT UR RST IS 5NN <BT>
QTH MCLEAN VA MCLEAN VA
OP IS JIM DE N3JT

[your callsign] DE W1RM <BT>
UR RST 569 569 IN CT NAME IS PETE <BK>

K6RB DE [your callsign] UR RST 57N IN [your town/city and ST abbrev] <BT>

NAME IS [your name] BTU K6RB DE [your callsign] K

N3JT DE [YOUR CALLSIGN] UR RST 56N IN [your town/city and ST abbrev] <BT>

NAME IS [your name] N3JT DE [your callsign] K

W1RM DE [your callsign] UR RST 45N WID QRN IN [your town/city and ST abbrev] <BT>

NAME IS [your name] W1RM DE [your callsign] K

ICR Single Character Practice:

Letters to Practice: **Sessions-01 thru 10**
*Message Options: **Letters***. Practice single characters.

Session 12:

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

[your callsign] DE K6RB WX CLDY TEMP 58 <BT>
RIG RUNS 100 W TO VERT <BT>
AGE IS 66 SO HW?[your callsign] DE K6RB K

[your callsign] DE N3JT <BT>
WX RAIN TEMP 42 <BT>
RIG IS K3 ES ANT IS 4 EL YAGI <BT>
AGE IS 65
OK? DE N3JT

[your callsign] DE W1RM WX SNOW TEMP 24 <BT>
RIG IS IC 7700 PWR IS KW ES ANT IS DIOPLE <BT>
AGE IS 70 HW? <BK>

Sending practice

K6RB DE [your callsign] WX SUNNY TEMP 82

RIG RUNS [your power] W TO [your antenna]

AGE IS [your age]

HW? K6RB DE [your callsign] K

N3JT DE [your callsign] WX RAIN TEMP 54

RIG RUNS [your power] W TO [your antenna]

AGE IS [your age]

HW? N3JT DE [your callsign] K

W1RM DE [your callsign] WX OC TEMP 70

RIG RUNS [your power] W TO [your antenna]

AGE IS [your age]

HW? W1RM DE [your callsign] K

ICR Single Character Practice:

Letters to Practice: **Sessions-01 thru 10**
*Message Options: **Letters***. Practice single characters.

Session 13:

Work through the copy practice for each message group using the MCT tool. Once you have committed all the copy practice to memory proceed to the sending practice section and go through each section in the same way.

Copy Practice

[your callsign] DE K6RB TNX FER QSO ES HPE CU AGN 73 <SK>
[your callsign] DE K6RB
E E

[your callsign] DE N3JT NICE QSO TNX CUL 73 <SK>
[your callsign] DE N3JT GN

[your callsign] DE W1RM ENJOYED QSO <SK>
[your callsign] DE W1RM
E E

Sending practice

K6RB DE [your callsign] TU FER QSO CU AGN 73 <SK>
K6RB DE [your callsign]

N3JT DE [your callsign] CUL ES NICE QSO 73 <SK>
N3JT DE [your callsign]
E E

W1RM DE [your callsign] ENJOYED QSO ALSO 73 <SK>
W1RM DE [your callsign] CU
E E

ICR Single Character Practice:

Letters to Practice: **Sessions-01 thru 10**
Message Options: Letters. Practice single characters.

Session 14:

Before your online sessions, listen to HF radio on CW sub bands. Listen for slower stations calling CQ and copy their callsigns. Listen to slower stations in QSO and see if you can copy some of what they are saying. Practice sending your callsign, QTH and name, over and over again.

Session 15:

Before your online sessions, listen to HF radio on CW sub bands. Listen for slower stations calling CQ and copy their callsigns. Listen to slower stations in QSO and see if you can copy some of what they are saying. Practice listening to your callsign using many different methods.

Session 16:

Before your online sessions, listen to HF radio on CW sub bands. Listen for slower stations calling CQ and copy their callsigns. Listen to slower stations in QSO and see if you can copy some of what they are saying. Practice sending first, second and wrap exchanges.

A great time to practice callsigns, name, and location abbreviations is during K1USN's Slow Speed Contest (SST) Friday afternoon and Sunday evenings. You can read all about the SST by going to K1USN Radio Club website. This is an easy contest where you can make that first "**ON-AIR**" contact. Your advisor can offer logging suggestions that assist during the SST event.

Appendix A: Some Common CW Abbreviations

AA	All after		HR	Here, Hear, Hour
AB	All Before		HV	Have
ABT	About		HW	How
ADR	Address		K	Invitation to transmit
AGN	Repeat, Say Again		LID	Poor operator
ANT	Antenna		LSN	Listen
AS	Standby, wait		MNI	Many
BCI	Broadcast Interference		NIL	Nothing, not in log
BCNU	Be seeing you		NR	Number
BK	Break, Break in		NW	New
BTU	Back to you		OB	Old boy
BUG	Semi-Automatic key		OK	Correct
BURO	Bureau		OM	Old man
B4	Before		OP	Operator
CFM	Confirm, I confirm		OT	Old Timer
CL	I am closing my station; Call		PSE	Please
CLG	Calling		PWR	Power
CONDX	Conditions		R	Roger, Received
CQ	Calling any Station		RCVR	Receiver
CS	Callsign		RFI	Radio Freq interference
CPI, CPY	Copy		RIG	Station equipment
CUD	Could		RPT	Report
CUL	See you later		RST	Signal Report
CUZ	Because		RTTY	Radio teletype
DE	From; This is		RX	Receive, receiver
DN	Down		SASE	Self-addressed stamped envelope
DX	Distance		SED	Said
EMRG	Emergency		SEZ	Says
ENUF	Enough		SHUD	Should
ES	And		SIG	Signal, Signature
FB	Fine business		SK	Out, clear, end of contact
FER	For		SKED	Schedule
FM	Freq Modulation; From		SN	Soon
FREQ	Frequency		SRI	Sorry
GA	Good afternoon		SSB	Single sideband
GE	Good evening		STN	Station
GG	Going		TEMP	Temperature
GLD	Glad		TKS	Thanks
GM	Good morning		TMW	Tomorrow
GN	Good night		TNX	Thanks
GND	Ground		TRE	There
GUD	Good		TT	That
HI	Laughing		TU	Thank you

TX	Transmitter, Transmit		WUD	Would
U	You		WX	Weather
UR	Your		XCVR	Transceiver
URS	Yours		XMTR	Transmitter
VY	Very		XYL	Wife
WID	With		YL	Young lady
WKD	Worked		73	Best regards
WL	Well, Will		?	Question
WID	With			

Appendix B: Commonly used Ham Radio words

A	DX	ITS	RICH	WERE
ABOUT	EFHW	JT65	RST	WHAT
AGE	ELECRAFT	JUST	SLEET	WHEN
AGN	ES	JUST	SLOPER	WHERE
ALINCO	FB	KENWOOD	SNOW	WINDOM
ALL	FLEX	KN	SO	WINDY
AM	FOG	KNEW	SOME	WITH
AND	FOR	KNOW	SSB	WX
ANT	FROM	LIKE	SUNNY	YAESU
ARE	G5RV	LSB	SWR	YEAH
AS	GA	MEAN	TEMP	YOU
AT	GE	MY	TENTEC	YOUR
BEAM	GM	NAME	TEST	YRS
BK	HAD	NO	THAT	.
BUT	HAIL	NOT	THE	,
BTU	HAVE	NR	THEM	?
BY	HEATHKIT	OCF	THERE	/
CAN	HI	OF	THEY	5NN
CLEAR	HIS	ON	THINK	599
CLOUDY	HOT	ONE	TNX	589
COLD	HOUR	OR	TO	58N
COLLINS	HR	OTHER	TU	579
COOL	HW	OUT	UH	57N
CPI	HW?	PSE	UP	479
CPY	I	PSK	USB	47N
CQ	ICOM	PSK31	VERTICAL	359
CW	IF	PWR	WARM	35N
DIGITAL	IN	R	WAS	489
DIPOLE	INV	RAIN	WE	48N
DO	IS	REALLY	WE	559
DONT	IT	RIG	WELL	55N

Appendix C: Abbreviated list of Some Common International Q Signals

A Q signal followed by a ? asks a question.
A Q signal without the ? answers the question, unless otherwise indicated.

QRA .... What is the name of your station?
? QRG.......... What's my exact frequency
QRH .... Does my frequency vary?
QRI.............. How is my tone? (1-3)
QRK............. What is my signal intelligibility? (1-5)
QRL............. Is the frequency in use?
QRM .... Man made interference
QRN .... Natural interference
QRO .... Shall I increase transmit power?
QRP............. Shall I decrease transmit power?
QRQ............ Shall I send faster?
QRS............. Shall I send slower?
QRT............. I'm closing my station down
QRV .... Are you ready?
QRX............. When will you call again?
QRZ............. Who is calling me?
QSA............. What is my signal strength? (1-5)
QSB............. Are my signals fading?
QSD............. Is my keying defective?
QSK............. Can you work break-in?
QSY............. Shall I change frequency?
QTH .... What is your location?
QTR............. What is your time?

For a full list of CW abbreviations with explanations go to the CWops website at:
https://cwops.org/additional-practice/ and click on CW Abbreviations.

Appendix D: Top 100 plus English words

A	EACH	ITS	OUT	UP
ABOUT	EVEN	JUST	OVER	US
AFTER	FIND	KNOW	SAID	USE
ALL	FIRST	LIKE	SAY	WANT
ALSO	FOR	LOOK	SEE	WAS
AN	FROM	MAKE	SHE	WAY
AND	GET	MANY	SO	WE
ANY	GIVE	MAY	SOME	WELL
ARE	GO	ME	TAKE	WERE
AS	GOOD	MORE	THAN	WHAT
AT	HAD	MOST	THAT	WHEN
BACK	HAS	MY	THE	WHICH
BE	HAVE	NEW	THEIR	WHO
BEEN	HE	NO	THEM	WILL
BUT	HER	NOT	THEN	WITH
BY	HIM	NOW	THERE	WORD
CALL	HIS	OF	THESE	WORK
CAN	HOW	ON	THEY	WOULD
COME	I	ONE	THINK	YEAR
COULD	IF	ONLY	THIS	YOU
DAY	IN	OR	TIME	YOUR
DID	INTO	OTHER	TO	
DO	IT	OUR	TWO	

Appendix E: US States, Territories, and Canadian Provinces

US States and Territories Abbreviations

AL - Alabama	**LA** - Louisiana	**OK** - Oklahoma
AK - Alaska	**ME** - Maine	**OR** - Oregon
AZ - Arizona	**MD** - Maryland	**PA** - Pennsylvania
AR - Arkansas	**MA** - Massachusetts	**RI** - Rhode Island
CA - California	**MI** - Michigan	**SC** - South Carolina
CO - Colorado	**MN** - Minnesota	**SD** - South Dakota
CT - Connecticut	**MS** - Mississippi	**TN** - Tennessee
DE - Delaware	**MO** - Missouri	**TX** - Texas
DC - District of Columbia	**MT** - Montana	**UT** - Utah
FL - Florida	**NE** - Nebraska	**VT** - Vermont
GA - Georgia	**NV** - Nevada	**VA** - Virginia
HI - Hawaii	**NH** - New Hampshire	**WA** - Washington
ID - Idaho	**NJ** - New Jersey	**WV** - West Virginia
IL - Illinois	**NM** - New Mexico	**WI** - Wisconsin
IN - Indiana	**NY** - New York	**WY** - Wyoming
IA - Iowa	**NC** - North Carolina	**GU** - Guam
KS - Kansas	**ND** - North Dakota	**PR** - Puerto Rico
KY - Kentucky	**OH** - Ohio	**VI** - (US) Virgin Islands

Canadian Provinces

AB - Alberta	**NS** - Nova Scotia
BC - British Columbia	**ON** - Ontario
MB - Manitoba	**PE** - Prince Edward Island
NB - New Brunswick	**QC** - Quebec
NL - Newfoundland and Labrador	**SK** - Saskatchewan

Appendix F: NATO International Phonetic Alphabet

Letter	Phonetic
A	Alpha
B	Bravo
C	Charlie
D	Delta
E	Echo
F	Foxtrot
G	Golf
H	Hotel
I	India
J	Juliet
K	Kilo
L	Lima
M	Mike
N	November
O	Oscar
P	Papa
Q	Quebec
R	Romeo
S	Sierra
T	Tango
U	Uniform
V	Victor
W	Whiskey
X	X-ray
Y	Yankee
Z	Zulu

Appendix G: Morse Code Trainer (MCT) Features & Functions

The online MCT tool is very flexible with many settings and adjustments that you can make to change how the tool works. Experiment, you can always reload the setup files

MCT trainer is divided into several sections:

Let's briefly look at each section to see how they can be tailored to help you work through the Practice-Instructions-and-Homework-Assignments-Beginner-CW curriculum workbook. There is a help tab in the main banner that you can use to get a full definition of each feature. Your advisor can also help you with any questions you may have.

Personalization:

You will need to enter this information when you get to session-11. You can enter it now or wait. It's up to you. You can fill in this information at any time.

Practice Content:

There are sixteen sessions in the Beginner CW curriculum workbook. The first 10 sessions are set up to teach you the alphabet, numbers, 4 punctuation marks, and 4 Morse code pro-signs. Sessions 11 through 13 puts everything you learn into real QSO practice. Sessions 14 through 16 are set aside for advisors to help new CW operators get on the air.

In the Practice Content the **Next** and **Previous** buttons will step through the sessions. The session currently being played will be in the gray *Sessions* box.

Learning Morse code starts with learning the sounds of each character, number, punctuation, and pro-sign.

The check boxes on the right represent the 6 practice message types presented in each section of the CW Beginner curriculum workbook. The term *message[1]* is used to describe the type of information to be played.

Message Types	
☐ Characters	☐ Words
☐ CW Abbreviations	☐ Numbers
☐ Callsigns	☐ Phrases

Message (Show/Hide):

The message box displays the characters, words, CW abbreviations, numbers, callsigns, or phrases i.e., *messages[1]* that are being played.

Playback Controls: Morse⚙ | Speech⚙ | Bell⚙ | Help⚙

This is where most of the settings that control speech, timing, repetition, and sound reside.
Detailed controls can be hidden once they are set to your liking. If in doubt about any function you can always use the **Help⚙** tab for more information.

---

[1] The term **message** is used collectively in both this document and the MCT online trainer to refer to Characters, Words, CW Abbreviations, Numbers, Callsigns, and Phrases.[1]

History:

As you go through the exercises the messages are displayed in the history box. You can turn off the **History visibility** so it will not interfere with the learning. You can even **Download** the history file if you wish. **Clear history** will clear the history box.

Settings:

Here is where you can **Upload**, **Download**, or **Reset** the program functions and controls. There are some java script files that will be loaded to configure the MCT tool for either copying or sending practice.

Appendix H: Manual Settings for Copy Practice

These are the default settings for copy practice. Nearly every section is adjustable meaning you can to a feature **on** or **off**. You can even adjust the timing values as well. *1000 ms*. Equals *1 second* in time. The best way to hear the effects of a feature is to try it.

- **Practice Content**: [Copying] **button** is highlighted.
- Check any of the **Message** boxes.
- **Message** (show/hide): **Hide**
- Detailed controls **on**
- Playback style: **Custom**
- Character / Farnsworth are set to **25 / 6**
- Reset the **Elapsed practice time** by clicking on the reset button
- Play options: **Repeat on**   *Random*: **off**
    - **Repeat off** the current message will play once.
    - **Repeat on** will continuously play all messages sectioned.
    - **Repeat 1** will continuously play the current message.
- 1: Show & Say Before: Flashcard **off** and Speech: **on**   *Flashcard Time*: **0 m**s.
- 2: Morse Count set to **5**   *Extra Gap*: **0 ms.**
- 3: Recognition Time is grayed out,   *Additions Recognition Time*: **0 ms**.
- 4: Show & Say After: Flashcard **off** and Speech **off**   *Flashcard Time*: **0 ms.**
- 5: Morse Repeat: **off**   *Extra Gap*: **0 ms.**
- 6: Bell: **on**   *Bell Gap*: **200 ms**. *(0.2 sec.)*

Message Types

☐ Characters	☐ Words
☐ CW Abbreviations	☐ Numbers
☐ Callsigns	☐ Phrases

Morse✿ | Speech✿ | Bell✿ | Help✿

A note about Extra Gap space: As you progress through the sessions if you want to shorten the gap time between messages here are some suggestions you can try. Reducing the gap time will force the program to play the messages quicker. Appendix A gives you a complete breakdown of the copying practice setup.

- 2: Morse -play…: *Extra Gap of* **250 - 500 – 750 - 1000 *ms.***
- 3: Recognition – optional…: *Recognition Time of* **250 - 500 – 750 - 1000 *ms***.
- 5: Morse Repeat – option…: *Extra Gap of* **250 - 500 – 750 - 1000 *ms***.

Appendix I: Manual Settings for Sending Practice

These are the default settings for copy practice. Nearly every section is adjustable meaning you can to a feature **on** or **off**. You can even adjust the timing values as well. *1000 ms*. Equals *1 second* in time. The best way to hear the effects of a feature is to try it.

Message Types

☐ Characters	☐ Words
☐ CW Abbreviations	☐ Numbers
☐ Callsigns	☐ Phrases

- **Practice Content**: [Sending] **button** is highlighted.
- Check any of the ***Message*** boxes.
- Message: (show/hide): **Hide**
- Detailed controls **on**
- Playback style: **Custom**
- Character / Farnsworth are set to **15 / 6**
- Reset the **Elapsed practice time** by clicking on the reset button
- Play options: **Repeat on**   *Random*: **off**
  - **Repeat off** the current message will play once.
  - **Repeat on** will continuously play all messages sectioned.
  - **Repeat 1** will continuously play the current message.

Morse✿ | Speech✿ | Bell✿ | Help✿

- 1: Show & Say Before: Flashcard **off** and Speech: **off**   *Flashcard Time*: **1000 ms.** *(1 sec.)*
- 2: Morse Count set to **5**   *Extra Gap: **3000 ms**. (3 sec.)*
- 3: Recognition Time is grayed out,   *Additions Recognition Time*: **3000 ms**.
- 4: Show & Say After: Flashcard **off** and Speech **off**   *Flashcard Time*: **1000 ms.** *(1 sec.)*
- 5: Morse Repeat: **off**   *Extra Gap*: **3000 ms**. *3 sec.)*
- 6: Bell: **on**   *Bell Gap: **200 ms**. (0.2 sec.)*

A note about Extra Gap space: As you progress through the sessions some of the messages my take longer to key than the time initially allowed. If you find that you do not have sufficient time to key the message before the program starts playing again here are some extra gap adjustments you can make.

- 2: Morse -play…: *Extra Gap of **5000 - 6000 ms.** (5 – 6 sec.)*
- 3: Recognition – optional…: *Recognition Time of **5000 - 6000 ms**.*
- 5: Morse Repeat – option…: *Extra Gap of **5000 - 6000 ms**.*

Appendix J: CW Daily Practice Log

Class:

Student Name:

DATE	TIME	SESSION	TIME SPENT	NOTES

Appendix K: 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 a high rate of speed, while extra spacing is inserted between characters and words to slow the transmission down. The advantage of this is that you get used to recognizing characters at a higher speed, and thus it will be easier to increase the word speed later on.

The ARRL uses a Farnsworth setting of 18 WPM (90 CPM) timing for its daily Morse code transmission announcements.

Farnsworth timing was invented by Donald R. Farnsworth (W6TTB) in the late 1950s.