



## **CW Academy**

### **BEGINNER Level CW Curriculum**

Practice Instructions and Homework Assignments

(Fourth Edition)

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## 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 online 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 preloaded 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 prosigns 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, ragchewing, 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 at the link:

[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 prosigns are what this class is designed to do.

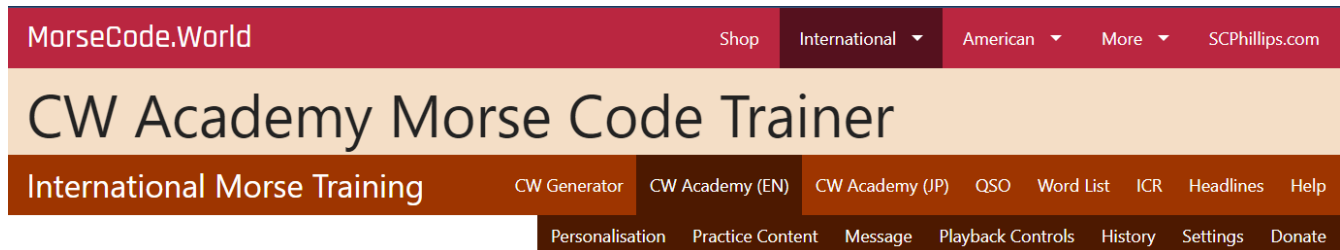
There is a predefined order in the learning process and if you follow the curriculum guidelines by the time you reach session-16 you will be ready to get on-air and enjoy your newfound skill.

## For Our Blind Students

We endeavor to make CW Academy accessible to all. Student resource documents are formatted for accessibility for low-vision and also blind people using screen readers. They are available in both PDF and HTML versions. Many of the daily lessons include abbreviations, random letter sequences and other items that screen readers may attempt to pronounce as nonsensical words. When you encounter those, have it spell the words. Tables and graphical items have descriptive alternate text. Table of contents and structured headers will aid your navigation. If you encounter difficulties with the materials, please tell your advisor and we will try to make improvements.

## Introduction to Morse Code Online Trainer (MCT)

MCT is an online practice tool designed to work with this CW Beginner curriculum workbook. It is part of the [MorseCode.World website](http://MorseCode.World), which offers many training tools.



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.

**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:                                  |
| <input type="text" value="Your Call Sign"/> | <input type="text" value="Your city/province &amp; state/DX"/> | <input type="text" value="Your firstname"/> |
| Your age:                                   | Your power:  | Your antenna:                               |
| <input type="text" value="Your Age"/>       | <input type="text" value="Transmitting Power"/>                | <input type="text" value="Your antenna"/>   |

### 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
- **Under 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 via the Next and Previous buttons.
  - 3: Select the **Message Type** to practice, such as characters or words.

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

In **Playback 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 by 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 will be identified and 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 prosigns. 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 identified and shown in **red**.
- Characters learned (x) is a running list of all the letters, numbers, punctuation, and prosigns that have been presented so far.

The next part is the **Copy Practice** portion of the session. The message types presented here are preloaded 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 the following 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 misspelled. 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 or keyer. The **Sending practice** portion is also divided into the following 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 subconscious 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 it.

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 (all are new): **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: previous **A E N T** plus new **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:

A E N T S I O 1 4

### 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:

A A A A A E E E E E I I I I I N N N N N O O O O O  
S S S S S T T T T T 1 1 1 1 1 4 4 4 4 4

## Session 03:

---

Characters for this session: previous **O I S** plus new **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:

|           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A A A A A | D D D D D | E E E E E | H H H H H | I I I I I | L L L L L | N N N N N |
| O O O O O | R R R R R | S S S S S | T T T T T | 1 1 1 1 1 | 2 2 2 2 2 | 4 4 4 4 4 |
| 5 5 5 5 5 |           |           |           |           |           |           |

## Session 04:

---

Characters for this session: previous **R H D L 1 4** plus new **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:

|           |           |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A A A A A | C C C C C | D D D D D | E E E E E | H H H H H | I I I I I | L L L L L |
| N N N N N | O O O O O | R R R R R | S S S S S | T T T T T | U U U U U | 1 1 1 1 1 |
| 2 2 2 2 2 | 4 4 4 4 4 | 5 5 5 5 5 |           |           |           |           |



## Session 05:

---

Characters for this session: previous **U C 2 5** plus new **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 | EEEEEE | HHHHH | IIIII | LLLLL |
| MMMMM | NNNNN | OOOOO | RRRRR  | SSSSS | TTTTT | UUUUU |
| WWWWW | 11111 | 22222 | 33333  | 44444 | 55555 | 66666 |
| ????? |       |       |        |       |       |       |

## Session 06:

---

Characters for this session: previous **M W 3 6** plus new **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 | EEEEEE | FFFFFF | HHHHH | IIIII |
| LLLLL | MMMMM | NNNNN | OOOOO  | RRRRR  | SSSSS | TTTTT |
| UUUUU | WWWWW | YYYYY | 11111  | 22222  | 33333 | 44444 |
| 55555 | 66666 | ????? |        |        |       |       |

## Session 07:

---

Characters for this session: previous **FY 3 6** plus new **GPQ79/**  
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:

**FY 3 6 GPQ79 /**

#### 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 | EEEEEE | FFFFFF | 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: previous **7 9 /** plus new **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     | EEEEEE | FFFFFF | 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: previous **B V** plus new **J K O 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 | EEEEEE           | FFFFFF | 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: previous **K J 8 0 Q** plus new **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 as 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 | EEEEEE           | FFFFFF | 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

ICR practice will use Morse Code trainer at this link:

[Morse Code Trainer Instant Character Recognition](#)

**Instant Character Recognition**  
International Morse Training

CW Generator CWops (EN) CWops (JP) QSO Word List **ICR** Headlines

**Letters to Practise**  
Choose which order to learn the letters in:

Alphabetical **CW Academy** Koch LCWO LICW

Each [CW Academy Beginner session](#) introduces a few letters. Press the blue buttons to select a session's letters.

|      |      |   |   |     |      |      |   |     |   |      |      |   |
|------|------|---|---|-----|------|------|---|-----|---|------|------|---|
| S1:  | A    | E | N | T   | S2:  | I    | O | S   | 1 | 4    | S3:  | D |
| H    | L    | R | 2 | 5   | S4:  | C    | U | S5: | M | W    | 3    | 6 |
| ?    | S6:  | F | Y | S7: | G    | P    | 7 | 9   | / | S8:  | B    | V |
| S9:  | J    | K | 0 | 8   | <BT> | S10: | Q | X   | Z | <BK> | S11: | - |
| S13: | <SK> |   |   |     |      |      |   |     |   |      |      |   |

Extras not included in the CW Academy Beginner course:

|      |      |   |   |   |   |   |   |   |   |   |   |   |
|------|------|---|---|---|---|---|---|---|---|---|---|---|
| All: | &    | ' | @ | ( | ) | : | , | = | ! | . | + | * |
| All: | <AR> |   |   |   |   |   |   |   |   |   |   |   |

Choose characters by type:

Letters Numbers Punctuation Prosigns **Clear**

Instant character recognition is 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. There is an additional getting started document called Guidelines for MorseCodeWorld ICR available on our [student resources webpage](#).

**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.

Select Speech After in the Playback style dropdown menu.

You have three ICR options to work with: Individual characters, random nonsense 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 have.
- 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 prosigns 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 Personalization 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:<br><input type="text" value="Your Call Sign"/> | Your town/city and state abbreviation:<br><input type="text" value="Your city/province &amp; state/DX"/> | Your name:<br><input type="text" value="Your firstname"/>  |
| Your age:<br><input type="text" value="Your Age"/>             | Your power:<br><input type="text" value="Transmitting Power"/>   | Your antenna:<br><input type="text" value="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>

## Sending practice

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

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|          |                               |      |                                 |
|----------|-------------------------------|------|---------------------------------|
| 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      | Clad                          | 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 |
| U   | You                   |
| UR  | Your                  |
| URS | Yours                 |
| VY  | Very                  |
| WID | With                  |
| WKD | Worked                |
| WL  | Well, Will            |
| WID | With                  |

|      |              |
|------|--------------|
| WUD  | Would        |
| WX   | Weather      |
| XCVR | Transceiver  |
| XMTR | Transmitter  |
| XYL  | Wife         |
| YL   | Young lady   |
| 73   | Best regards |
| ?    | Question     |

## 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 – 9)                    |
| 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 – 9)        |
| QSB | Are my signals fading?                     |
| QSD | Is my keying defective?                    |
| QSK | Can you work breakin?                      |
| QSL | Acknowledge receipt                        |
| QSO | Communicate with                           |
| 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/additionalpractice/> and click on CW Abbreviations.

## Appendix D: Top 100 plus English words

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|       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 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

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

### Canadian Provinces and Territories

|           |                           |           |                      |
|-----------|---------------------------|-----------|----------------------|
| <b>AB</b> | Alberta                   | <b>NS</b> | Nov Scotia           |
| <b>BC</b> | British Columbia          | <b>NU</b> | Nunavut              |
| <b>MB</b> | Manitoba                  | <b>ON</b> | Ontario              |
| <b>NB</b> | New Brunswick             | <b>PE</b> | Prince Edward Island |
| <b>NL</b> | Newfoundland and Labrador | <b>QC</b> | Quebec               |
| <b>NT</b> | Northwest Territories     | <b>SK</b> | Saskatchewan         |
|           |                           | <b>YT</b> | Yukon                |

## Appendix F: NATO International Phonetic Alphabet

| <u>Letter</u> | <u>Phonetic</u> |
|---------------|-----------------|
| 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             | Xray            |
| 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 prosigns. 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 prosign.

The list below represent the six practice message types presented in each section of the CW Beginner curriculum workbook. The term **message**<sup>1</sup> is used to describe the type of information to be played.

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

### ***Message (Show/Hide):***

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

---

<sup>1</sup> 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.<sup>1</sup>

## **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.

## **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

---

Here are the default settings for copy practice in Morse Code Trainer. Nearly every section is adjustable meaning you can turn 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** radio buttons. Default is **Characters**. Others are CW Abbreviations, Callsigns, Words, Numbers, Phrases.
- **Message** (show/hide): **Hide**
- Detailed controls **off** [Morse](#) | [Speech](#) | [Bell](#) | [Help](#)
- 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 ms.*
- 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.)*

**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

---

Here are the default settings for sending practice in Morse Code Trainer. 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:** [ **Sending** ] button is highlighted.
- Check any of the **Message** radio buttons. Default is **Characters**. Others are CW Abbreviations, Callsigns, Words, Numbers, Phrases.
- Message: (show/hide): **Hide**
- Detailed controls **on** [Morse](#) | [Speech](#) | [Bell](#) | [Help](#)
- 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.
- 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 may 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 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.

## 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.<br>"Practice-Instruction-sand-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.<br>Session07 changed characters learned from 24 to 29.   |
| 2023Sep    | 4.2.2    | Ken Rainey, AC5EZ    | Session04 changed 1 to L.<br>copy phrases changed BOB to TOD.<br>Sending Phrases changed BOB to TOD.<br>MCT script updated to reflect changes.<br>Added Release note to page one. |
| 2023Sep    | 4.2.3    | Ken Rainey, AC5EZ    | Session06 replaced LOG with DWN,<br>UP with MY, YOUR with YRS.<br>Sending Phrases: Removed "?" to match copy phrases. Replaced "HW CPY" with "UR NAME?".                          |
| 2023Oct    | 4.2.4    | Ken Rainey, AC5EZ    | Session07 removed B4 from abbreviations.<br>Added CPY to Appendix A .   |

|                 |         |                    |  |
|-----------------|---------|--------------------|--|
|                 |         |                    | Added CPI and CPY to Appendix D.<br>Added <b>Numbers</b> copy segment in Session02.  |
| 2023Nov         | 4.2.5   | Ken Rainey, AC5EZ  | Added the comma “,” to session06.<br>Moved the letter “Q” from session10 to Session07.   |
| 2023Dec         | 4.2.7   | Ken Rainey, AC5EZ  | Added prosign <AR> to session08<br>1. Replaced the word “segment(s)” with the work “practice”.<br>2. Removed <i>CW Abbreviations</i> from all Additional Practice sections<br>3. Added Characters to sending practice, section in all sessions.<br>4. Changed Sending Drill font to Courier.<br>5. Removed Additional practice and made it Daily Sending Drill.<br>6. Replaced Morse Code Trainer data with new Images and data.<br>7. Miscellaneous formatting updates. |
| 2023Dec section | 4.2.7.1 | Ken Rainey, AC5EZ  | 1.Fixed typo in “ <b>Preparing for Copy practice</b> ”<br><br><b>Repeat on</b> Changed “t” to “text”.<br>Changed color of Q from <b>red</b> to <b>black</b> .<br>2. Fixed typo on page 6.<br>3. Added “.” to <b>new characters this session</b> .  |
| 2024Jan         | 4.2.7.2 | Ken Rainey, AC5EZ  | Updated the default settings in Appendix H & I to Match the MCT online training tool.  |
| 2024Jan         | 4.2.7.3 | Ken Rainey, AC5EZ  | Session06: changed NANE to NAME, MY to MI.<br>Updated QRL definition in Appendix C.<br>Removed OC from session04.<br>Removed OT from session02.<br>Removed OC, OT, OM from Appendix B.   |
| 2024Mar         | 4.2.8   | Ken Rainey, AC5EZ  | Removed <BK> as a prosign.   |
| 2024Mar         | 4.2.8.1 | Ken Rainey, AC5EZ  | Added <BK> back into syllabus with a note in Session10 explaining usage of BK and <BK>.  |
| 2024Jul         | 4.3     | Gary Johnson, NA6O | Reformatted for blind accessibility. Added student log and intro section for blind students.   |
| 2024Sep         | 4.4     | Bob Carter, WR7Q   | Updated the Canadian Provinces.  |
| 2024Sep         | 4.5     | Bob Carter, WR7Q   | Corrected the Canadian Provinces.  |
| 2024Oct         | 4.6     | Bob Carter, WR7Q   | Added Q codes a  |