

# Academy

## FUNDAMENTAL Level CW Curriculum

### Version 1.6

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By CW Academy

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#### Revision Record

2022 Jul – 1.0 original version

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# CW Academy Fundamental Level Curriculum

## Introduction

Welcome to CW Academy and the Fundamental Level CW Class.

## Course Overview

The Fundamental Level class accepts students who have learned the Morse code characters and can copy and receive Morse code at around 6 words per minute.

The class initially concentrates on Instant Character Recognition (ICR) and on sending well-formed Morse code characters. The goal of ICR is to reduce the amount of time between hearing the character and knowing what the character is to almost instantaneous. About half the time will be spent working on sending 'readable' Morse code.

The course is eight weeks long with about an hour of homework each day during the week. Students who diligently do the homework every day and participate in the twice-weekly class activities will be successful in reaching the class objectives.

## Class Objectives

By the end of the course, students should be able to copy Morse code at about 10-13 words per minute and send 'readable' Morse code at about the same rate. The student should have excellent Instant Character Recognition as well as be able to hear common two and three letter groups as words. The student should be ready to take the Intermediate Level CW Class, if desired. The student will also have experience using Morse code on the air and capable of having a QSO at about 10-13 words per minute.

## Curriculum Organization

The daily homework assignments follow. Please note that the Advisor has the discretion to modify the homework assignments as needed to suit the class or individual student needs.

The homework is organized by days. Three days' worth of homework is due for each online session. In class the advisor will likely discuss the homework, your progress, and provide advice and encouragement.

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## Tools

The following tools and aids will be used during the semester:

**NOTE: Cntl+Click to open each link in a new tab, so you retain your place in this document**

**Learn CW Online** Cntl+Click <https://lcwo.net/> – Practice ICR, words, abbreviations, and call signs

## LCWO ICR

Cntl+Click <https://cwops.org/wp-content/uploads/2022/07/LCWO-ICR-Guidelines-1.2.pdf>

*Recommend you read this document and understand the process for the Fundamental class*

LCWO Video of Cntl+Click [LCWO ICR](#)

**Morse Code Trainer** Cntl+Click <https://morsecode.world/international/trainer/trainer.html>

ICR and copy training

**MCT Demo Video** Cntl+Click [MCT ICR](#)

## Daily Scales

Cntl+Click <https://cwops.org/wp-content/uploads/2022/03/Everyday-Send-Code-WR7Q-ver.-7.pdf>

*You should download and print this document. You will use them almost every practice session*

**Voice Recorder** You will need the ability to record and play back your sending. Most smart phones have a voice recorder function which works well to fill this requirement.

## A Note about Speed

It is CW Academy's practice to send Morse code at a character speed of 25wpm and use Farnsworth spacing to achieve a specific effective speed.

The Fundamental class starts at an effective speed of 6wpm and gradually increases to an effective speed of at least 10 wpm by the end of the class.

Students should consider the effective speed for each practice session to be the 'minimum' speed. If the student is capable of a higher speed, the student should use that speed or higher.

Note that there is no learning in the comfort zone and there is no comfort in the learning zone!  
(Carl Dierschow)

Push yourself into the learning zone

# CW Academy Fundamental Level Curriculum

<b>Session 1 Homework Day 1</b> <b>Effective Speed: 6wpm</b>	
COPY	SEND
<b>Send 1</b> Send the 'Daily Scales' <i>Warm Up</i>	
<p>The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group            Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed. That would be one character every two seconds. Send the following:</p> <p style="text-align: center;"> <b>EEEE TTTT IIII MMMM SSSS OOOO HHHH 0000 5555</b>   <b>AAAA NNNN UUUU DDDD VVVV BBBB 4444 6666</b> </p> <p style="text-align: center;">Get into the habit of doing a warmup at the beginning of each practice session.</p>	
<p><b>Copy 1</b>            Open lcwo.net in your browser and register your account. With a registered account you can see your progress during the eight weeks of the class.</p> <p>Once registered, click on 'CW Settings' under 'Account' in the left column. Change the parameters to:            Character Speed: 25wpm (always use this setting)            Effective Speed: 6wpm            Extra Word Spacing: 0            Tone: Your choice. Normally 600 Hz            CW Player: jscwlib            No transmission prefix / suffix            Start Delay (seconds): 2 seconds            Group length: 2 fixed            Click Submit            Now click on 'Code Groups' under 'Speed Practice'            Parameters should read:            Character Speed = 25 WPM, Effective Speed = 6 WPM, Tone = 600 Hz, Start Delay = 2 seconds            Change mode to 'letters' and the duration to 1 minute. Do NOT select Use REAL speed            Click the 'Play' button. Type in each character as you hear it. After each group click 'Enter'            At the end of a minute, check your results. Make a note of all the characters you missed</p> <p>In this exercise, do not 'ponder' over a character. If you don't know what it is, just type a period (.) and go on to the next character. Be sure the press the Enter key after each two-letter group. Pondering will cause you to miss the next character....</p>	
<b>Send 2</b> Set keyer speed at 25wpm character speed and send at 6wpm effective speed Send your first name five times	
<p style="text-align: center;">Be deliberate with your character formation. At 6wpm you would send one character about every two seconds</p>	
<p><b>Copy 2</b>            Do a second LCWO session as described in Copy 1 above            Do a third LCWO one minute session as described above</p>	
<b>Send 3</b> Send your call sign five times	
<p><b>Copy 3</b>            Do a final LCWO session as describe in Copy 1 above</p> <p>You should now have four lists of characters that you missed. Combine this list into one list of characters that you missed two or more times.</p>	

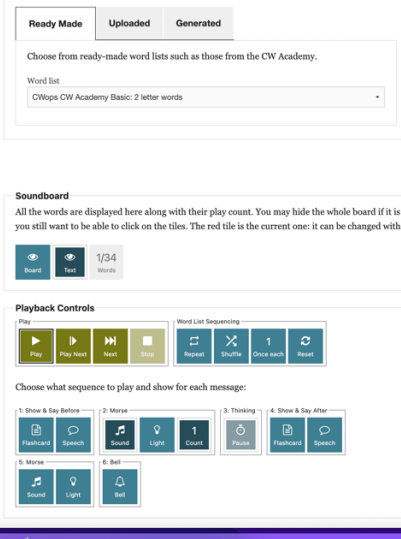
# CW Academy Fundamental Level Curriculum

<b>Session 1 Homework Day 2 - Effective Speed: 6wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">From the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group. Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed (that would be one character every two seconds). Send the following:</p> <p style="text-align: center;"><b>ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890</b></p> <p>Send in groups of five (or six) with space between each group. Concentrate on slow, deliberate sending with good character formation</p>	
<p><b>Copy 1</b></p> <p>Using the LCWO instructions from Day 1, do two sessions of Code Groups for one minute each. Continue refining your list of characters that you miss more than once</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p>Send each of the characters on your list of characters that you have missed more than once. Say the character and then send the character Go through the list twice</p>	
<p><b>Copy 2</b></p> <p>In LCWO change your settings as follows:            Character Speed: 25wpm            Effective Speed: 6wpm            Extra word spacing: 0            Group length: 2</p> <p>On the right side, check each of the letters on your list of characters that you have missed more than twice and Submit Select Code Groups</p> <p>Change the mode to 'Custom characters'</p> <p>Run a one-minute code groups typing in the characters and pressing Enter after each group of 2 characters.            Check your results</p> <p>Do this twice more, keeping track of the characters that you missed more than once</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p>With keyer set to 25wpm, send your name five times paying attention to your character spacing and character formation.</p>	
<p><b>Copy 3</b></p> <p>Do two more one-minute sessions of LCWO using the characters that you are missing more than once. Continue refining your list</p>	

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<b>Session 1 Homework Day 3 - Effective Speed: 6wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">From the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of characters correctly. If a mistake is made start over for that group Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed (that would be one character every two seconds). Send the following:</p> <p style="text-align: center;"><b>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 70364 51289</b></p>	
<p><b>Copy 1</b> Modify your LCWO settings to the characters that you're continuing to miss more than once Do two more one-minute sessions</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p>With your keyer set at 25wpm and at an effective speed of 6wpm, send your call sign followed by your name five times in this fashion:</p> <p style="text-align: center;"><b>(NAME) DE (CALLSIGN)</b></p>	
<p><b>Copy 2</b> Reset LCWO to the settings for Day 1, Copy 1. Run three one-minute sessions and refine your list of difficult characters</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p>Using the voice recorder on your smart phone or on your computer, record yourself sending your callsign de your name five times</p> <p style="text-align: right;">Play back the recording and analyze your sending</p> <p>Are the characters well formed? That is, are you sending a 'Y' and not 'TW'? Check your spacing when sending a character and between words. Can you copy your own sending?</p>	
<p style="text-align: center;"><b>You have finished the homework for the first 'class' session. Be prepared to report in class your code group score. Note any questions so you'll remember to ask them in class. If you have a question, it's highly probably someone else has the same question</b></p>	

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Session 2 Homework Day 1 Effective Speed: 6wpm	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">Send the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of 5 characters correctly. If a mistake is made start over for that group Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed. That would be one character every two seconds. Send the following:</p> <p style="text-align: center;"><b>EEEEE TTTTT IIIII MMMMM SSSSS OOOOO HHHHH 00000 55555</b></p> <p style="text-align: center;"><b>AAAAA NNNNN UUUUU DDDDD VVVVV BBBB 4444 66666</b></p> <p style="text-align: right;">Get into the habit of doing a warmup at the beginning of each practice session.</p>	
<p><b>Copy 1</b></p> <p>Work on your 'difficult letters' list. Set up LCWO with those letters plus 3-5 more common letters. Run two sessions of one-minute each and revise your list</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p style="text-align: right;">Set your keyer to 25wpm and send your list of difficult letters. Say out loud each letter as you send it. Concentrate on good character formation and good pacing ... which should be at about one letter every two seconds</p>	
<p><b>Copy 2</b></p> <p>Reset LCWO mode to 'Letters' so it will use all the letters. Do three more one-minute sessions, making a new list of characters that you miss more than once</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p style="text-align: right;">Send your call sign five times without a mistake. If you make a mistake, stop, rewind, and start again trying to send your call sign five times without an error.</p> <p style="text-align: right;">If, after four tries, you haven't succeeded in sending your call sign five times in a row without a mistake, stop and go on to</p>	
<p><b>Copy 3</b></p> <p>Using the Word List Trainer <a href="https://morsecode.world/international/trainer/words.html">https://morsecode.world/international/trainer/words.html</a> set up as described:</p>  <p>Select 'Ready Made' and 'CWops CW Academy Basic: 2 letter words' Click 'Play' and say out loud each letter as you hear it. Don't ponder over the letter or you will miss the next letter You can click 'Play' again to hear the two letters and the word over again After both letters have played, what is the word? Click 'Next' then 'Play' and do the next word Continue until the end of the word list (34 words)</p>	

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Session 2 Homework Day 2 - Effective Speed: 6wpm	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p>From the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group. Set the keyer at 25wpm character speed and practice character spacing at 6wpm effective speed (that would be one character every two seconds). Send the following:</p> <p style="text-align: center;"><b>ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890</b></p> <p>Send in groups of five (or six) with space between each group. Concentrate on slow, deliberate sending with good character formation</p>	
<p><b>Copy 1</b></p> <p>Again, back to LCWO. Set the mode to 'Letters' and do three sessions of one minute each. Start a new list of letters that you miss more than once.</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p>Use the Word List Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/trainer.html">https://morsecode.world/international/trainer/trainer.html</a></p> <p>Click the 'Copying' tab Set the session to 7/13 Click Play and listen to the word Using your key, send the word mimicking what you heard Click 'Next' and do the next word</p>	
<p><b>Copy 2</b></p> <p>Do another two sessions of one minute each of LCWO. Refine your list of letters missed more than once. Compare that new list to the previous list and note your improvement</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p>Send your name and location (QTH) five times. Many amateur radio operators shorten their name to 3-4 letters. If you QTH is complicated and difficult to send, then use a nearby city and send 'nr (nearby city)', where 'nr' is an abbreviation for 'near'. For example: 'nr alban ny'.</p> <p>It is common practice to send your name and qth twice. For example: John john qth is nr alban ny alban ny</p> <p>You should practice sending your name, qth, and call sign until you can send them without making a mistake. It is embarrassing to have to correct your own name on the air....</p>	



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<b>Session 2 Homework Day 3 - Effective Speed: 6wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
From 'Daily Scales' <i>Exercise</i> send the following:	
AAA BBB CCC DDD EEE FFF GGG HHH III JJJ KKK LLL MMM	
NNN OOO PPP QQQ RRR SSS TTT UUU VVV WWW XXX YYY ZZZ	
If you make a mistake, start the group over again. If you make a second mistake in the same group, note the letters you are having trouble with, and continue through the alphabet	
Sending well-formed characters at 6wpm should take about 4 minutes to send the letters above	
You, like all the other students, can send faster than you can copy. Be deliberate and SLOW DOWN	
<b>Copy 1</b>	
Do three more sessions of one minute in LCWO in the mode 'Letters'. Combine your results with the list from yesterday	
<b>Send 2</b>	
Send your call sign five times without making a mistake. If you make a mistake, stop, take a breath, and start again. If after four tries you haven't been able to send your call sign five times in a row correctly, stop and go on to the next activity	
<b>Copy 2</b>	
Do three more sessions of one minute in LCWO in the mode 'Letters'. Combine your results with the list from Copy 1	
<b>Send 3</b>	
Send your name five times without making a mistake. If you make a mistake, stop, take a breath, and start again. If after four tries you haven't been able to send your name five times in a row correctly, stop and go on to the next activity	
<b>Copy 3</b>	
Set LCWO up in 'Custom' mode and select the letters from your list of letters you have gotten wrong more than once in the past two days. Do several one-minute sessions and take a break between them. Cross the letters off you list that you feel you have mastered	

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<b>Session 3 Homework Day 1</b> <b>Effective Speed: 7wpm</b>									
<b>COPY</b>	<b>SEND</b>								
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">Send the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of 5 characters correctly. If a mistake is made start over for that group            Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds. Send the following:</p> <p style="text-align: center;"> <b>EEEEEE TTTTTT IIIII MMMMM SSSSS OOOOO HHHHH 00000 55555</b>   <b>AAAAA NNNNN UUUUU DDDDD VVVVV BBBB 4444 66666</b> </p> <p style="text-align: center;">Get into the habit of doing a warmup at the beginning of each practice session.</p>									
<p><b>Copy 1</b></p> <p>Work on your 'difficult letters' list. Set up LCWO with those letters plus 3-5 more common letters. Run two sessions of one-minute each and revise your list</p>									
<p style="text-align: right;"><b>Send 2</b></p> <p>Set your keyer to 25wpm and send your list of difficult letters. Say out loud each letter as you send it. Concentrate on good character formation and good pacing ... which should be at about one letter every two seconds</p>									
<p><b>Copy 2</b></p> <p>Reset LCWO mode to 'Letters' so it will use all the letters. Do three more one-minute sessions, making a new list of characters that you miss more than once</p>									
<p style="text-align: right;"><b>Send 3</b></p> <p>Send your name five times without a mistake. If you make a mistake, stop, rewind, and start again trying to send your name five times without an error.            If, after four tries, you haven't succeeded in sending your name five times in a row without a mistake, stop and go on to Copy 3</p>									
<p><b>Copy 3</b></p> <p>Listen to QSO 102 at 7wpm:  <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/qso-07.102.mp3">https://cwops.org/wp-content/uploads/2022/07/qso-07.102.mp3</a>            Listen and copy as best you can all the way through without stopping            Fill out the following information as best you can. Then listen to the QSO as many times as needed to fill in any missing information:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">CQer Call Sign _____</td> <td style="width: 50%;">Answerer Call Sign _____</td> </tr> <tr> <td>CQer Name _____</td> <td>Answerer Name _____</td> </tr> <tr> <td>CQer RST Sent _____</td> <td>Answerer RST Sent _____</td> </tr> <tr> <td>CQer QTH _____</td> <td>Answerer QTH _____</td> </tr> </table>		CQer Call Sign _____	Answerer Call Sign _____	CQer Name _____	Answerer Name _____	CQer RST Sent _____	Answerer RST Sent _____	CQer QTH _____	Answerer QTH _____
CQer Call Sign _____	Answerer Call Sign _____								
CQer Name _____	Answerer Name _____								
CQer RST Sent _____	Answerer RST Sent _____								
CQer QTH _____	Answerer QTH _____								

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<b>Session 3 Homework Day 2 - Effective Speed: 7wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">From the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group. Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed (that would be one character every two seconds). Send the following:</p> <p style="text-align: center;"><b>ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890</b></p> <p>Send in groups of five (or six) with space between each group. Concentrate on slow, deliberate sending with good character formation</p>	
<p><b>Copy 1</b></p> <p>Set LCWO up in 'Custom' mode. Check all the letters from yesterday's Copy 3 plus three more. Do three one-minute sessions making note of the characters missed.</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p style="text-align: right;">Do the 'Daily Scales' <i>Exercise</i></p> <p style="text-align: center;">Keyer speed at 25wpm character speed with good Farnsworth spacing for 7wpm effective speed</p>	
<p><b>Copy 2</b></p> <p>Set LCWO up in 'Custom' mode. Check four of the difficult letters only. Do three one-minute sessions with just those four characters</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p>Send your call sign five times without a mistake. If you make a mistake, stop, rewind, and start again trying to send your call sign five times without an error.</p> <p style="text-align: right;">If, after four tries, you haven't succeeded in sending your call sign five times in a row without a mistake, stop and go on to Copy 3</p>	
<p><b>Copy 3</b></p> <p>Set LCWO up in 'Custom' mode. Check a different four of the difficult letters. Do three one-minute sessions with just those four characters</p>	

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<b>Session 3 Homework Day 3 - Effective Speed: 7wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">From the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group. Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed (that would be one character every two seconds). Send the following:</p> <p style="text-align: center;"><b>ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890</b></p> <p style="text-align: right;">Send in groups of five with space between each group. Concentrate on slow, deliberate sending with good character formation</p>	
<p><b>Copy 1</b></p> <p>Continue working on your difficult letters, four at a time. Set LCWO up in 'Custom' mode. Check four of the difficult letters only. Do three one-minute sessions with just those four characters</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p style="text-align: right;">From the 'Daily Scales' <i>Drill</i></p> <p style="text-align: center;">Keyer speed at 25wpm character speed with good Farnsworth spacing for 7wpm effective speed Send the first two lines of the 'Drill'</p>	
<p><b>Copy 2</b></p> <p>If there are more difficult characters, do the same with those as outlined in Copy 1. Otherwise, set LCWO up for letters and do three one-minute sessions. Start a new list of characters missed more than once</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p style="text-align: center;">Using the Word List Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/trainer.html">https://morsecode.world/international/trainer/trainer.html</a></p> <p style="text-align: right;">Click on the 'Sending' tab Set the session to 8/13 Click Play and listen to the word Using your key, send the word mimicking what you heard Click 'Next' and do the next word</p>	
<p><b>Copy 3</b></p> <p>Do two more LCWO sessions on letters. Continue to revise your list from Copy 2</p>	

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<b>Session 4 Homework Day 1</b> <b>Effective Speed: 7wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> The objective is to send each group of characters correctly. If a mistake is made start over for that group Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds Send the following pangram twice:  <b>WALTZ JOB VEXED QUICK FROG NYMPHS</b>	
<b>Copy 1</b> Using LCWO, set up to run a session of 'Code Groups' Character Speed: 25wpm Effective Speed: 7wpm Letters Groups of 3 Time: 2 minutes Run one session of two minutes (15-16 groups). Check your results and revise your list of difficult characters	
<b>Send 2</b> Send the following pangram twice. If a mistake is made start over for that word. Keyer speed at 25wpm character speed and send at 7wpm effective speed. Send the following:  <b>GO, LAZY FAT VIXEN. BE SHREWD, JUMP QUICK</b>	
<b>Copy 2</b> Using LCWO Code Groups, run a two-minute session of 3 letter groups at an effective speed of 7wpm. Check your results and update the list of characters missed. You should have two columns of characters missed, one from the first session and one from the second session	
<b>Send 3</b> Send your call sign 5 times in a row correctly. If you make a mistake, start the five time again. If after 4 tries you're unable to send your call sign five times in a row correctly, stop and go on to the Copy exercise	
<b>Copy 3</b> Using LCWO Code Groups, run two two-minute sessions of 3 letter groups as done earlier. Check your results and add to your list of difficult characters	

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<b>Session 4 Homework Day 2 - Effective Speed: 7wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">From the 'Daily Scales' <i>Warm Up</i></p> <p>The objective is to send each group of 5 or 6 characters correctly. If a mistake is made start over for that group. Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds. Send the following:</p> <p style="text-align: center;"><b>ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890</b></p> <p style="text-align: center;"><b>ABCDEF GHIJK LMNOP QRSTU VWXYZ 12345 67890</b></p> <p style="text-align: right;">Slow down and be very deliberate about character formation</p>	
<p><b>Copy 1</b></p> <p>Using LCWO, set up to run a session of 'Code Groups'</p> <p>Character Speed: 25wpm Effective Speed: 7wpm Custom from your list of difficult characters</p> <p>Groups of 3 Time: 2 minutes</p> <p>On the right side of the 'Change CW settings' page, unclick all the letters EXCEPT for the ones on your list from Day 1. Then turn on an additional 5 characters of your choice. Run two two-minute sessions, checking your results after each run. Mark your list of difficult characters as to which ones are still problematic</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p style="text-align: right;">From the 'Daily Scales' Drill</p> <p>Keyer speed at 25wpm character speed with good Farnsworth spacing for 7wpm effective speed. Send the following:</p> <p style="text-align: center;"><b>BENS BEST BENT WIRE    BENS BEST BENT WIRE    BENS BEST BENT WIRE</b></p> <p style="text-align: center;"><b>BENS BEST BENT WIRE    BENS BEST BENT WIRE    BENS BEST BENT WIRE</b></p>	
<p><b>Copy 2</b></p> <p>Using LCWO Code Groups, as set up in <b>Copy 1</b>, run two more two-minute sessions. Check your results after each run. Mark your list of difficult characters as to which ones are still problematic</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p>Send your call sign five times in a row correctly. Again, stop after 4 tries if unable to send five times in a row correctly</p>	
<p><b>Copy 3</b></p> <p>Using LCWO Code Groups as set up in Copy 1, run one more two-minute session. Check your results and update your list of difficult characters ... that is, characters you missed twice or more in the five sessions</p>	

# CW Academy Fundamental Level Curriculum

<b>Session 4 Homework Day 3 - Effective Speed: 7wpm</b>	
Update your list of difficult characters	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
<p>Send the following pangram twice. If a mistake is made start over for that group            Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds            Send the following:</p> <p style="text-align: center;"><b>HOW RAZORBACK JUMPING FROGS CAN LEVEL SIX PIQUED GYMNASTS</b></p>	
<b>Copy 1</b>	
<p>Using LCWO, set up to run a session of 'Code Groups'            Character Speed: 25wpm            Effective Speed: 7wpm            Custom; select letters from your list of difficult characters            Groups of 3            Time: 2 minutes            Run one session of two minutes (15-16 groups). Check your results and revise your list of difficult characters</p>	
<b>Send 2</b>	
<p>Send the following pangram twice. If a mistake is made start over for that group            Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character every two seconds            Send the following:</p> <p style="text-align: center;"><b>The job requires extra pluck and zeal from every young wage earner</b></p>	
<b>Copy 2</b>	
<p>Using LCWO Code Groups, set up to run custom using letters from your list of difficult letters. Run a two-minute session of 3 letter groups at an effective speed of 7wpm. Check your results and update the list of characters missed.</p>	
<b>Send 3</b>	
<p>Send your call sign 5 times in a row correctly. If you make a mistake, start the five time again. If after 4 tries you're unable to send your call sign five times in a row correctly, stop and go on to the Copy exercise</p>	
<b>Copy 3</b>	
<p>Listen to QSO 106 at 7wpm:  <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/qso-07.106.mp3">https://cwops.org/wp-content/uploads/2022/07/qso-07.106.mp3</a>            Listen and copy as best you can all the way through without stopping            Fill out the following information as best you can. Then play the qso again as often as needed to fill in the rest of the information:</p>	
CQer Call Sign _____	Answerer Call Sign _____
CQer Name _____	Answerer Name _____
CQer RST Sent _____	Answerer RST Sent _____
CQer Park _____	Answerer QTH _____
<p>Now listen to the QSO a second time and fill in any missing information</p>	

# CW Academy Fundamental Level Curriculum

<b>Session 5 Homework Day 1</b> <b>Effective Speed: 7wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed	
<b>Copy 1</b> Run a three-minute session of 'Code Groups' Character Speed: 25wpm Effective Speed: 7wpm Mode: letters Groups of 3 Time: 3 minutes Start a new list of difficult letters	
<b>Send 2</b> Practice sending your name and a signal report  <b>Name is (YOUR NAME) UR RST 5nn &lt;BK&gt;</b>  Send this several times until you've sent it three times in a row without a mistake	
<b>Copy 2</b> Do another three-minute session of 'Code Groups' as in Copy 1 above and revise your list of difficult letters. That is, remove characters you are now getting right and add any new characters you're missing more than once	
<b>Send 3</b> Practice sending your name and your QTH  <b>Name is (YOUR NAME) ES QTH is (your qth)</b>  Send this several times until you've sent it three times in a row without making a mistake	
<b>Copy 3</b> Do a three-minute session of 'Code Groups', figures only Note the numbers that you are missing more than once	



# CW Academy Fundamental Level Curriculum

<b>Session 5 Homework Day 2 - Effective Speed: 7wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed	
<b>Copy 1</b>	
For a different exercise, do two sentences of LCWO 'Plain Text Training'	
Character Speed: 25	
Effective Speed: 7	
Do one sentence and check results	
Do a second sentence and check results	
How did you do? If this was quite difficult, drop the effective speed to 7wpm (or even 7wpm) and try again	
<b>Send 2</b>	
You should now have a 'help sheet' of phrases for a QSO. If not make one up using these phrases:	
<b>NAME IS (YOUR NAME)</b> <b>UR RST 5NN</b> <b>QTH IS (YOUR QTH)</b> <b>RIG IS (YOUR RADIO)</b> <b>ANT IS (YOUR ANTENNA)</b> <b>HAM SINCE (YEAR LICENSED)</b>	
Send the list of phrases twice while reading from your 'help sheet'	
<b>Copy 2</b>	
Try another two sentences of LCWO 'Plain Text Training'	
Can you do 80% at 7wpm?	
<b>Send 3</b>	
Send TWO pangrams on the CWops website: CW Academy → Additional Info & Practice Material for Students	
Exaggerate the spacing between words so it is clear when one word ends, and the next word starts	
Record your sending and play it back	
Critique your smoothness and character formation	
<b>Copy 3</b>	
Back to LCWO 'Code Groups'	
Set up for <b>figures</b> at 25wpm character speed and 7wpm effective speed	
Do two one-minute sessions of 3-letter groups	

# CW Academy Fundamental Level Curriculum

<b>Session 5 Homework Day 3 - Effective Speed: 7wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p>Pay particular attention to good character formation when sending. For instance,                      be sure that you are sending an 'F' and not 'I N'</p> <p>When copying, watch for the characters you are having difficulty recognizing                      You can change one of the Copy exercises to doing a 'Custom' code groups using only your difficult characters</p>	
<p><b>Send 1</b></p> <p>From the 'Daily Scales' <i>Drill</i></p> <p>The objective is to send each group of characters correctly. If a mistake is made start over for that group                      Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character                      every two seconds                      Send the following:</p> <p style="text-align: center;"><b>THE JULY SUN CAUSED A FRAGMENT OF BLACK PINE WAX TO OOZE ON THE VELVET QUILT</b></p>	
<p><b>Copy 1</b>                      Using LCWO, set up to run a session of 'Code Groups'                      Character Speed: 25wpm                      Effective Speed: 7wpm                      Letters                      Groups of 3                      Time: 2 minutes                      Run one session of two minutes (15-16 groups). Check your results and make a list of characters missed</p>	
<p><b>Send 2</b></p> <p>Send the following pangram twice. If a mistake is made start over for that group                      Set the keyer at 25wpm character speed and practice character spacing at 7wpm effective speed. That would be one character                      every two seconds                      Send the following:</p> <p style="text-align: center;"><b>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 70364 51289</b></p> <p style="text-align: center;"><b>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 70364 51289</b></p>	
<p><b>Copy 2</b>                      Using LCWO Code Groups, run a two-minute session of 3 letter custom groups using your difficult letters at an effective                      speed of 7wpm. Check your results and update the list of characters missed</p>	
<p><b>Send 3</b></p> <p>Using the Word List Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/trainer.html">https://morsecode.world/international/trainer/trainer.html</a>                      Click the Sending' tab                      Set the session to 9/13                      Set the Farnsworth speed to 7wpm                      Click Play and listen to the word                      Using your key, send the word mimicking what you heard                      Click 'Next' and do the next word</p>	
<p><b>Copy 3</b>                      Repeat Copy 2</p>	

# CW Academy Fundamental Level Curriculum

<b>Session 6 Homework Day 1</b> <b>Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> From the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the first two lines of the Warmup Daily Scales	
<b>Copy 1</b> Run LCWO Code Groups 2-minute session, letters 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Start a new list of difficult characters	
<b>Send 2</b> From the 'Daily Scales' <i>Drill</i> Keyer speed at 25wpm character speed and send at 8wpm effective speed Send the first two lines	
<b>Copy 2</b> Run LCWO Code Groups twice 2-minute session, letters 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Update your list of difficult characters	
<b>Send 3</b> Practice sending the following pangram:	
<b>PACK MY BOX WITH FIVE DOZEN LIQUOR JUGS</b>	
Send the pangram 5 times using good 8wpm pacing and error correction	
<b>Send 4</b> Send your name and qth five times using good 8wpm pacing and error correction:	
<b>NAME IS (YOUR NAME) (YOUR NAME) &lt;BT&gt; QTH HR (YOUR QTH) (YOUR QTH)</b>	
<b>Copy 3</b> Run LCWO Code Groups for two sessions 2-minute session, Custom characters Select from the Change CW Settings only those characters from the earlier LCWO sessions then add five more random characters and numbers 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Check your results and note characters you missed	

# CW Academy Fundamental Level Curriculum

<b>Session 6 Homework Day 2 - Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
From the 'Daily Scales' <i>Warm Up</i>	
Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the first two lines	
<b>Copy 1</b>	
Run LCWO Code Groups	
2-minute session, figures	
25wpm Character Speed, 8wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Update your list of difficult figures	
<b>Send 2</b>	
From the 'Daily Scales' <i>Exercise</i>	
Keyer speed at 25wpm character speed with good Farnsworth spacing for 8wpm effective speed. Send the letters of the alphabet, each character repeated 3 times. For example:	
<b>AAA BBB CCC DDD EEE ...</b>	
<b>Copy 2</b>	
Run LCWO Code Groups twice	
2-minute session, figures	
25wpm Character Speed, 8wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Update your list of difficult figures	
<b>Send 3</b>	
Practice sending the following:	
<b>JAMES LOVED HIS CAR &lt;BT&gt;</b>	
<b>IT WAS FAST AND A PLEASURE TO DRIVE.</b>	
<b>HE WISHED HE COULD SPEND THE ENTIRE DAY</b>	
<b>DRIVING HIS NEW CAR BUT THAT WOULD NOT BE POSSIBLE.</b>	
<b>JAMES SADLY PARKED THE CAR AND WENT TO HIS OFFICE.</b>	
Send using good 8wpm pacing and error correction	
<b>Copy 3</b>	
Run LCWO Code Groups for two sessions	
2-minute session, Custom characters (choose from your list of difficult figures)	
Select from the Change CW Settings only those figures from the earlier LCWO sessions then add two more random numbers	
25wpm Character Speed, 8wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Check your results and note characters you missed.	

# CW Academy Fundamental Level Curriculum

<b>Session 6 Homework Day 3 - Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p><b>Send 1</b> From the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the first two line</p>	
<p><b>Copy 1</b> Run LCWO Code Groups twice 2-minute session, Letters 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Update your list of difficult characters</p>	
<p><b>Send 2</b> Do the 'Daily Scales' <i>Exercise</i> Keyer speed at 25wpm character speed with good Farnsworth spacing for 8wpm effective speed. Send the alphabet repeating each letter three times. For example:</p> <p style="text-align: center;"><b>AAA BBB CCC DDD EEE ...</b></p>	
<p><b>Copy 2</b> Run LCWO Code Groups for two sessions 2-minute session, Custom characters Select from the Change CW Settings only those characters from the earlier LCWO sessions then add five more random characters and numbers 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Check your results and note characters you missed</p>	
<p><b>Send 3</b> Using the Word List Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/trainer.html">https://morsecode.world/international/trainer/trainer.html</a> Click the 'Sending' tab Set the session to 10/13 Set the Farnsworth speed to 8wpm Click Play and listen to the word Using your key, send the word mimicking what you heard Click 'Next' and do the next word</p>	

# CW Academy Fundamental Level Curriculum

<b>Session 7 Homework Day 1</b> <b>Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">Do the 'Daily Scales' <i>Warm Up</i></p> <p>Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the entire Warm Up</p>	
<p><b>Copy 1</b></p> <p><b>Note the speed increase to 8wpm effective speed</b></p> <p>Run LCWO Code Groups            1-minute session, letters            25wpm Character Speed, 8wpm Effective speed            Set Extra Word Spacing to 2 (give yourself a bit more time between groups)            Set Start Delay at 2 seconds            Groups of 5 characters            Run the 1-minute session, check results, and repeat three times</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p style="text-align: right;">Do the 'Daily Scales' <i>Drill</i></p> <p style="text-align: center;">Keyer speed at 25wpm character speed and send at 8wpm effective speed            Send the last two lines, including the pro signs</p>	
<p><b>Copy 2</b></p> <p>Run LCWO Code Groups            1-minute session, figures            25wpm Character Speed, 8wpm Effective speed            Set Extra Word Spacing to 2 (give yourself a bit more time between groups)            Set Start Delay at 2 seconds            Groups of 5 characters            Run the 1-minute session, check results, and repeat three times</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p style="text-align: right;">Send your side of a QSO:</p> <p style="text-align: center;"> <b>UR SIG 5NN</b>  <b>NAME IS (YOUR NAME TWICE)</b>  <b>QTH IS (YOUR QTH TWICE)</b>  <b>RIG IS (YOUR RADIO) RUNNING (POWER)</b>  <b>CUL 73 73</b> </p> <p style="text-align: right;">pay attention to pacing and exaggerate spacing between words</p>	
<p><b>Copy 3</b></p> <p>Do a set of 'Callsign Training'. Filter out the difficult call signs. Start at 8wpm and set your preference for the maximum speed:</p> <p>Speed: <input type="text" value="8"/> WPM            min. Character Speed: <input type="text" value="25"/> WPM            max. Speed: <input style="border: 1px solid red;" type="text" value="10"/> WPM            Fixed speed*: <input type="checkbox"/>            Tone: <input type="radio"/> <input type="text" value="600"/> Hz  <input checked="" type="radio"/> random (500-900Hz)            Filter callsigns: <input type="text" value="Filter long calls (like DL60DARC)"/>            Stop on error: <input type="checkbox"/>            Blind mode: <input type="checkbox"/>  <input type="button" value="Start"/></p> <p><small>* For training; makes scores ineligible for the highscore list.</small></p>	

# CW Academy Fundamental Level Curriculum

<b>Session 7 Homework Day 2 - Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed. Send the entire Warmup	
<b>Copy 1</b> Using LCWO, do a session of 'Word training' using CW abbreviations and check your results Repeat by doing another 'Word training' session	
<b>Send 2</b> From the 'Daily Scales' <i>Exercise</i> Keyer speed at 25wpm character speed with good Farnsworth spacing for 8wpm effective speed Send each letter of the alphabet and each number three times. For example:  <b>AAA BBB CCC DDD EEE ... 111 222 333 ...</b>	
<b>Copy 2</b> Using LCWO, do a session of 'Word training' using CW abbreviations and check your results Repeat by doing another 'Word training' session	
<b>Send 3</b> Using a magazine or newspaper, send several sentences Record your sending and play it back Can you copy what you sent? Note what you need to improve	
<b>Copy 3</b> Do an LCWO session of 'Word training' using CW abbreviations. Uncheck 'fixed speed' and allow the speed to increase or decrease. Note the speed you ended	

# CW Academy Fundamental Level Curriculum

<b>Session 7 Homework Day 3 - Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i>	
<p><b>Copy 1</b>            Run LCWO Code Groups            1-minute session, letters            25wpm Character Speed, 8wpm Effective speed            Set Extra Word Spacing to 2 (give yourself a bit more time between groups)            Set Start Delay at 2 seconds            Groups of 5 characters            Run the 1-minute session, check results, and repeat three times</p>	
<b>Send 2</b> Do the 'Daily Scales' <i>Drill</i>	
<p><b>Copy 2</b>            Run LCWO Code Groups            1-minute session, figures            25wpm Character Speed, 8wpm Effective speed            Set Extra Word Spacing to 2 (give yourself a bit more time between groups)            Set Start Delay at 2 seconds            Groups of 5 characters            Run the 1-minute session, check results, and repeat three times</p>	
<b>Send 3</b>	
Using the Word List Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/trainer.html">https://morsecode.world/international/trainer/trainer.html</a> Select 'Sending' tab Set the session to 10/13 Set the Farnsworth speed to 8wpm Click Play and listen to the word Using your key, send the word mimicking what you heard Click 'Next' then 'Play' to do the next word Click 'Next' and do the next word	
<p><b>Copy 3</b>            Run a session of LCWO call sign training</p>	



# CW Academy Fundamental Level Curriculum

<b>Session 8 Homework Day 1</b> <b>Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session, check results, and repeat three times	
<b>Send 2</b> The practice today is to begin working on going from your head to the key without first writing it down Think of a favorite song, poem, story, or nursery rhyme Send it with your eyes closed. Don't worry about error correction, just send it as best you can	
<b>Copy 2</b> Do 'copy 1' again ... three one-minute sessions	
<b>Send 3</b> Do 'send 2' again, this time using error correction	
<b>Copy 3</b> Do a session of LCWO call sign training. Set up and described in the homework for Copy 3 in Session 7 Day 1	

# CW Academy Fundamental Level Curriculum

<b>Session 8 Homework Day 2 - Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, letters	
25wpm Character Speed, 8wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Run the 1-minute session, check results, and repeat three times	
<b>Send 2</b>	
Send at an effective speed of at least 8wpm the things that are around you	
Look at the thing and send it. No writing it down first	
Send at least 15 items	
<b>Copy 2</b>	
Run LCWO Word training	
Speed: 25wpm	
Min Character Speed: 8wpm	
Characters from lesson 40	
English words	
Maximum length: 3	
Fixed speed	
<b>Send 3</b>	
For this short session you'll send a list of common two-letter words. The list:	
<b>BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO</b>	
Send the list through one time without stopping	
Then send the list a second time with error correction as needed	
<b>Copy 3</b>	
Run LCWO Word training	
Speed: 25wpm	
Min Character Speed: 8wpm	
Characters from lesson 40	
English words	
Maximum length: 3	
Uncheck fixed speed	

# CW Academy Fundamental Level Curriculum

<b>Session 8 Homework Day 3 - Effective Speed: 8wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Drill</i> Set the keyer at 25wpm character speed and practice character spacing at 8wpm effective speed.	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, figures 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Do three 1-minute sessions	
<b>Send 2</b> Practice sending your call sign and name ten times in a row Use error correction If you heard your call sign in Morse Code while you were taking a nap, would it wake you up?	
<b>Copy 2</b> Run LCWO Code Groups 2-minute session, figures 25wpm Character Speed, 8wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Do at least one 2-minute session in preparation for 'copy 3' below	
<b>Send 3</b> For this session you'll send a list of common two-letter words. The list:  <b>BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO</b>  Send the list through one time without stopping Then send the list a second time with error correction as needed	
<b>Copy 3</b> Do a session of LCWO Code Groups Effective speed: 8wpm (minimum ... if you wish you can go higher) figures Five-character groups Extra word spacing as you wish Run a 2-minute session	

# CW Academy Fundamental Level Curriculum

Session 9 Homework Day 1 Effective Speed: 9wpm	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Warm Up</i>	
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed	
<p><b>Copy 1</b></p> <p>Run LCWO Code Groups            1-minute session, letters            25wpm Character Speed, 9wpm Effective speed            Set Extra Word Spacing to 2 (give yourself a bit more time between groups)            Set Start Delay at 2 seconds            Groups of 5 characters            Run the 1-minute session and check results</p> <p>If score is less than 80%, repeat until 80% or 5 times</p>	
<b>Send 2</b>	
<p style="text-align: center;">Using Morse Code Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/trainer.html">https://morsecode.world/international/trainer/trainer.html</a></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%; border: 1px solid #ccc; padding: 5px;"> <p><b>Session</b></p> <p>Choose your session and then practise the copying and sending segments.</p> <div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <span style="background-color: #666; color: white; padding: 2px 5px;">⏪</span> <span style="border: 1px solid #ccc; padding: 2px 5px;">11/13</span> <span style="background-color: #666; color: white; padding: 2px 5px;">⏩</span> </div> <div style="display: flex; justify-content: center; align-items: center; gap: 10px; font-size: 8px;"> <span style="background-color: #666; color: white; padding: 2px 5px;">Previous</span> <span style="border: 1px solid #ccc; padding: 2px 5px;">Session</span> <span style="background-color: #666; color: white; padding: 2px 5px;">Next</span> </div> </div> <div style="width: 45%; border: 1px solid #ccc; padding: 5px;"> <p><b>Feedback</b></p> <p>For <i>Copying</i> and <i>Random</i> activities, choose whether you want to hide the text, or see a flashcard displayed afterwards.</p> <div style="display: flex; justify-content: space-between; align-items: center; gap: 10px;"> <div style="display: flex; gap: 5px;"> <span style="background-color: #007bff; color: white; padding: 2px 5px;">👁</span> <span style="background-color: #007bff; color: white; padding: 2px 5px;">📄</span> </div> <div style="text-align: right;"> <p>Thinking time ⌵</p> <div style="display: flex; align-items: center; gap: 5px;"> <input style="width: 40px; text-align: center;" type="text" value="75"/> %         </div> </div> </div> </div> </div> <div style="margin-top: 10px; border: 1px solid #ccc; padding: 5px;"> <div style="display: flex; justify-content: space-around; border-bottom: 1px solid #ccc; margin-bottom: 5px;"> <span style="background-color: #666; color: white; padding: 2px 5px;">Copying</span> <span style="background-color: #666; color: white; padding: 2px 5px;">Sending</span> <span style="background-color: #666; color: white; padding: 2px 5px;">Free-form</span> <span style="background-color: #666; color: white; padding: 2px 5px;">Random</span> </div> <p style="font-size: 8px;">Play a segment, then try to imitate it, exactly, using your key or keyer. Repeat it as many times as it takes to feel that you've got the correct word pattern.</p> <div style="border: 1px solid #ccc; padding: 5px; margin: 5px 0;"> <p style="font-family: monospace; font-size: 10px; color: red;">k6rb de [your callsign] - ur rst 57n in [your town/city and state abbreviation] - name is [your name] btu k6rb de [your callsign] k</p> </div> <div style="display: flex; justify-content: center; align-items: center; gap: 10px; font-size: 8px;"> <span style="background-color: #666; color: white; padding: 2px 5px;">▶</span> <span style="background-color: #666; color: white; padding: 2px 5px;">⏸</span> <span style="background-color: #666; color: white; padding: 2px 5px;">⏹</span> <span style="background-color: #666; color: white; padding: 2px 5px;">⏪</span> <span style="border: 1px solid #ccc; padding: 2px 5px;">1/3</span> <span style="background-color: #666; color: white; padding: 2px 5px;">⏩</span> <span style="background-color: #007bff; color: white; padding: 2px 5px;">🔄</span> <span style="background-color: #007bff; color: white; padding: 2px 5px;">🔀</span> <span style="background-color: #007bff; color: white; padding: 2px 5px;">⬇️</span> </div> </div>	
<p>Set the session to 11/13</p> <p>Set your Farnsworth speed to at least 9wpm</p> <p>In the text box, click on 'k6rb', listen to the code, then mimic what you heard</p> <p>When you feel you are sending that call sign correctly, click on the next word and send it</p> <p>Send what is indicated in the red text</p> <p>Do at least the first of the three segments</p>	

# CW Academy Fundamental Level Curriculum

<b>Session 9 Homework Day - 2 Effective Speed: 9wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, letters	
25wpm Character Speed, 9wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Run the 1-minute session, check results, and repeat three times	
<b>Send 2</b>	
Send at an effective speed of at least 9wpm the things that are around you	
Look at the thing and send it. No writing it down first	
Send at least 15 items	
<b>Copy 2</b>	
Run LCWO Plain text training	
Character Speed: 25wpm	
Effective Speed: 9wpm	
English Proverbs	
Run through 5 sentences	
<b>Send 3</b>	
Send the following pangrams:	
<b>JACK AMAZED A FEW GIRLS BY DROPPING THE ANTIQUE ONYX VASE &lt;BT&gt;</b>	
<b>WE PROMPTLY JUDGED ANTIQUE IVORY BUCKLES FOR THE NEXT PRIZE &lt;BT&gt;</b>	
<b>SIX BIG JUICY STEAKS SIZZLED IN A PAN AS FIVE WORKMEN LEFT THE QUARRY</b>	
Record sending all three pangrams and then play the recording back. What do you need to work on? Pacing? Breaks between words? Character formation?	
Use correct error correction. If you make a mistake in a word, send several dits and start the word over again. If you make another mistake in the same word, pause, and start the word over again	
<b>Copy 3</b>	
Run LCWO Word training	
Speed: 25wpm	
Min Character Speed: 9wpm	
Characters from lesson 40	
English words	
Maximum length: 3	
Uncheck fixed speed	
Note your score and maximum speed	

# CW Academy Fundamental Level Curriculum

<b>Session 9 Homework Day 3 - Effective Speed: 9wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b> Do the 'Daily Scales' <i>Drill</i></p> <p style="text-align: center;">Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed</p>	
<p><b>Copy 1</b> Run LCWO Code Groups 1-minute session, mixed characters 25wpm Character Speed, 9wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Do three 1-minute sessions</p>	
<p style="text-align: right;"><b>Send 2</b> end a list of common two-letter words</p> <p style="text-align: center;"><b>BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO</b></p> <p style="text-align: right;">Send the list through one time without stopping Then send the list a second time with error correction as needed</p>	
<p><b>Copy 2</b> Back to Morse Code Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/words.html">https://morsecode.world/international/trainer/words.html</a> The link should take you to the 'Word List' tab. If not, click on 'Word List' in the orange navigation bar Select 'Ready Made' Select Word list: CWops CW Academy Basic: 2 letter words Set 25wpm Character Speed and 9wpm Effective speed Turn on the controls with the red arrows</p> <p><b>Playback Controls</b></p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <p>Play</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="display: flex; gap: 5px;"> <div style="background-color: #4CAF50; color: white; padding: 5px; border: 1px solid #ccc;">▶ Play</div> <div style="background-color: #4CAF50; color: white; padding: 5px; border: 1px solid #ccc;">▶▶ Play Next</div> <div style="background-color: #4CAF50; color: white; padding: 5px; border: 1px solid #ccc;">▶▶▶ Next</div> <div style="background-color: #4CAF50; color: white; padding: 5px; border: 1px solid #ccc;">■ Stop</div> </div> <div style="display: flex; gap: 5px;"> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">↺ Repeat</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">↻ Shuffle</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">1 Once each</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">↺ Reset</div> </div> </div> </div> <p>Choose what sequence to play and show for each message:</p> <div style="display: flex; flex-wrap: wrap; gap: 10px;"> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>1: Show &amp; Say Before</p> <div style="display: flex; justify-content: space-between;"> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">📄 Flashcard</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">🗣️ Speech</div> </div> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>2: Morse</p> <div style="display: flex; justify-content: space-between;"> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">🎵 Sound</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">💡 Light</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">1 Count</div> </div> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>3: Thinking</p> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc; text-align: center;">⏸️ Pause</div> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>4: Show &amp; Say After</p> <div style="display: flex; justify-content: space-between;"> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">📄 Flashcard</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">🗣️ Speech</div> </div> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>5: Morse</p> <div style="display: flex; justify-content: space-between;"> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">🎵 Sound</div> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc;">💡 Light</div> </div> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>6: Bell</p> <div style="background-color: #009688; color: white; padding: 5px; border: 1px solid #ccc; text-align: center;">🔔 Bell</div> </div> </div> <p>One run will be a list of 34 words Press 'Play' which will send the first word. Don't write anything down.</p> <p>If you think you know the word, <b>say it</b>, then check History below to see if you have it right If not, press play again to hear the word another time</p> <p>If you can't figure out the word, press Play again to repeat the two-letter word After three tries, look at History to see what the word was and press Next to go on</p> <p>Pressing 'Play' repeats the word Pressing 'Play Next' goes to the next word</p>	

# CW Academy Fundamental Level Curriculum

## A Challenge for Anyone Consistently Getting 80% or Better on the LCWO Exercises:

Replace the LCWO exercises in the homework with the following:

Set up LCWO Word training as follows:

Speed:  WPM  
min. Character Speed:  WPM  
Characters from lesson:   
Tone:  650 Hz  
 random (500-900Hz)  
Language / Collection:   
Hold down Shift while clicking to select multiple entries.  
Maximum length (letters):   
Simplify characters:   
Fixed speed:   
Skip automatically after 5 seconds:

Press 'Start'. Each word you enter correctly will cause the speed to increase by one wpm. If you get the word wrong, it'll decrease by one wpm. Repeat this exercise a couple of times on a daily basis, until you are consistently getting maximum speed of 15wpm or more. Make a note of your score and max speed for each try.

When the goal of 15wpm on 3-letter words is consistently reached, Start over again with word length of 4 letters. When you reach a consistent speed of 15wpm, move the word length to 5 letters and do the same.

When you are consistently reaching 15wpm or more on 5-letter words, you are ready for the Intermediate Level CW Academy class.

# CW Academy Fundamental Level Curriculum


<b>Session 10 Homework Day 1</b> <b>Effective Speed: 9wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 9wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results  If score is less than 80%, repeat until 80% or 5 times	
<b>Send 2</b> Using Morse Code Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/trainer.html">https://morsecode.world/international/trainer/trainer.html</a>	
Set the session to 11/13 Set your Farnsworth speed to at least 9wpm In the text box, click on 'k6rb', listen to the code, then mimic what you heard When you feel you are sending that call sign correctly, click on the next word and send it Send what is indicated in the red text Do the third of the three segments	
<b>Copy 2</b> If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training'. Otherwise repeat 'Copy 1'	
<b>Send 3</b> Do 'send 2' again	



# CW Academy Fundamental Level Curriculum

<b>Session 10 Homework Day 2 - Effective Speed: 9wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, numbers	
25wpm Character Speed, 9wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Run the 1-minute session, check results, and repeat three times	
<b>Send 2</b>	
Have an imaginary QSO with someone and be both sides of the QSO	
<b>Copy 2</b>	
Run LCWO Plain text training	
Character Speed: 25wpm	
Effective Speed: 9wpm	
English (or American) Proverbs ... your choice	
Run through 5 sentences	
<b>Send 3</b>	
Send the following pangrams:	
<b>HOW RAZORBACK-JUMPING FROGS CAN LEVEL SIX PIQUED GYMNASTS &lt;BT&gt;</b>	
<b>WHENEVER THE BLACK FOX JUMPED THE SQUIRREL GAZED SUSPICIOUSLY &lt;BT&gt;</b>	
<b>A QUART JAR OF OIL MIXED WITH ZINC OXIDE MAKES A VERY BRIGHT PAINT &lt;BT&gt;</b>	
<i>Do NOT try this at home</i>	
Record sending all three pangrams and then play the recording back. What do you need to work on? Pacing? Breaks between words? Character formation?	
Use correct error correction. If you make a mistake in a word, send several dits and start the word over again. If you make another mistake in the same word, pause, and start the word over again	
<b>Copy 3</b>	
Run LCWO Word training	
Speed: 25wpm	
Min Character Speed: 9wpm	
Characters from lesson 40	
English words	
Maximum length: 4	
Check fixed speed	
Note your score	

# CW Academy Fundamental Level Curriculum

<b>Session 10 Homework Day 3 - Effective Speed: 9wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b> Do the 'Daily Scales' <i>Drill</i></p> <p style="text-align: center;">Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed</p>	
<p><b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 9wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Do three 1-minute sessions</p>	
<p style="text-align: right;"><b>Send 2</b> Send a list of common two-letter words</p> <p style="text-align: center;"><b>BE TO OF IN IT ON HE AS DO AT BY WE OR AN MY SO UP IF GO</b></p> <p style="text-align: right;">Send the list through one time without stopping Then send the list a second time, record, and play back. Critique your sending and repeat if necessary</p>	
<p><b>Copy 2</b> Back to Morse Code Trainer <b>Cntl+Click</b> <a href="https://morsecode.world/international/trainer/words.html">https://morsecode.world/international/trainer/words.html</a> The link should take you to the 'Word List' tab. If not, click on 'Word List' in the orange navigation bar Select 'Ready Made' Select Word list: CWops CW Academy Basic: 3 letter words Set 25wpm Character Speed and 9wpm Effective speed Turn on the controls with the red arrows</p> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> <p><b>Playback Controls</b></p>  </div> <p>Choose what sequence to play and show for each message:</p> <div style="display: flex; flex-wrap: wrap; gap: 10px;"> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>1: Show &amp; Say Before</p> <p>Flashcard Speech</p> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>2: Morse</p> <p>Sound Light <b>1</b> Count</p> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>3: Thinking</p> <p>Pause</p> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>4: Show &amp; Say After</p> <p>Flashcard Speech</p> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>5: Morse</p> <p>Sound Light</p> </div> <div style="border: 1px solid #ccc; padding: 5px; width: 25%;"> <p>6: Bell</p> <p>Bell</p> </div> </div> <p>One run will be a list of 34 words Press 'Play' which will send the first word. Don't write anything down.</p> <p>If you think you know the word, <b>say it</b>, then check History below to see if you have it right If not, press play again to hear the word another time</p> <p>If you can't figure out the word, press Play again to repeat the two-letter word After three tries, look at History to see what the word was and press Next to go on</p> <p>Pressing 'Play' repeats the word Pressing 'Play Next' goes to the next word</p>	

# CW Academy Fundamental Level Curriculum

Session 11 Homework Day 1 Effective Speed: 9wpm	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 9wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results  If score is less than 80%, repeat until 80% or 5 times	
<b>Send 2</b> Send the following:  <b>WHY DID THE GOLFER WEAR TWO TROUSERS? IN CASE HE GOT A HOLE IN ONE</b>  <b>WHAT GETS WET WHILE IT IS DRYING? A TOWEL</b>  <b>WHAT IS WORSE THAN RAINING CATS AND DOGS? HAILING TAXIS</b>	
<b>Copy 2</b> If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training'. Otherwise repeat 'Copy 1'	
<b>Send 3</b> More jokes to send:  <b>WHAT DO YOU CALL A BOOMERANG THAT DOES NOT COME BACK? A STICK</b>  <b>I WAS NOT ARGUING. I WAS SIMPLY EXPLAINING WHY I AM RIGHT</b>  <b>WHY DID THE ORANGE FAIL TO WIN THE RACE? BECAUSE IT RAN OUT OF JUICE</b>	
<b>Copy 3</b> Listen to Short Story 111 at 9wpm: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/ss-09.111.mp3">https://cwops.org/wp-content/uploads/2022/07/ss-09.111.mp3</a> Listen to the story all the way through without stopping, then listen as many times as needed to understand the short story Make notes as you listen Please spend a half-hour on this exercise.	

# CW Academy Fundamental Level Curriculum

<b>Session 11 Homework Day 2 - Effective Speed: 9wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, figures	
25wpm Character Speed, 9wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Run the 1-minute session, check results, and repeat three times	
<b>Send 2</b>	
Send the following list of European Union Country Codes	
Identify the country associated with the code. The list of countries and codes is in Appendix B	
<b>AT BE BG HR CY CZ DK EE FI FR DE GR HU IE IT LV LT LU MT NL PL PT RO SK SI ES SE</b>	
Send the list a second time	
<b>Copy 3</b>	
Set your browser to <b>Cntl+Click</b> <a href="https://morse.mdp.im/news/">https://morse.mdp.im/news/</a>	
25wpm Character Speed, 9wpm Effective speed	
Click on the play button and try to copy the headline. Repeat once or twice	
Hoovering over the blurred text will reveal the headline	
Play a couple of the headlines. The headlines change every day	
<b>Send 3</b>	
Send the following words. Pay attention to how the full word sounds	
<b>THIS BUT HIS BY FROM THEY WE SAY HER SHE OR WILL AN MY ONE</b>	
If you make a mistake sending a word then stop, pause, and start the word over again	
Send the list twice	

# CW Academy Fundamental Level Curriculum

<b>Session 11 Homework Day 3 - Effective Speed: 9wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' Drill	
Set the keyer at 25wpm character speed and practice character spacing at 9wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, letters	
25wpm Character Speed, 9wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Do three 1-minute sessions	
<b>Send 2</b>	
Send a list of common words	
Send the list through one time without stopping. Exaggerate the space between words	
<b>THEY FROM WE SAY HER SHE OR WILL AN MY ONE AN WILL UP OUT WHO</b>	
Then send the list a second time, record, and play back. Critique your sending and repeat if necessary	
<b>Copy 2</b>	
Set your browser to <b>Cntl+Click</b> <a href="https://morse.mdp.im/news/">https://morse.mdp.im/news/</a>	
25wpm Character Speed, 9wpm Effective speed	
Click on the play button and try to copy the headline. Repeat once or twice	
Hoovering over the blurred text will reveal the headline	
Play a couple of the headlines. The headlines change every day	
<b>Send 3</b>	
Open either <a href="http://bbc.com">bbc.com</a> or <a href="http://cnn.com">cnn.com</a>	
On <a href="http://bbc.com">bbc.com</a> click on 'News' and send the headlines in bold	
On <a href="http://cnn.com">cnn.com</a> send the headlines in the far-right column	
<b>Copy 3</b>	
Listen to QSO 101 at 9wpm: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/qso-09.101.mp3">https://cwops.org/wp-content/uploads/2022/07/qso-09.101.mp3</a>	
Listen all the way through without stopping. You've heard this QSO before. Then listen a second time. You're listening to get the important parts of the QSO:	
CQer Call Sign _____	Answerer Call Sign _____
CQer Name _____	Answerer Name _____
CQer RST Sent _____	Answerer RST Sent _____
CQer QTH _____	Answerer QTH _____

# CW Academy Fundamental Level Curriculum

<b>Session 12 Homework Day 1</b> <b>Effective Speed: 10wpm</b>	
COPY	SEND
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 10wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results  If score is less than 80%, repeat until 80% or 5 times	
<b>Send 2</b> Send the following:	
<p>WHAT DID ONE TRAFFIC LIGHT SAY TO THE OTHER?            STOP LOOKING &lt;BT&gt;            I AM CHANGING</p> <p>WHY WAS THE PONY UNABLE TO SING?            BECAUSE HE WAS A LITTLE HOARSE</p> <p>WHERE DID THE MUSIC TEACHER LEAVE HER KEYS?            IN THE PIANO</p>	
<b>Copy 2</b> If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training'. Otherwise repeat 'Copy 1'	
<b>Send 3</b> More jokes to send:	
<p>WHY DO BIRDS FLY SOUTH IN THE WINTER?            BECAUSE WALKING TAKES TOO LONG</p> <p>SANDYS MUM HAS FOUR KIDS &lt;BT&gt;            NORTH, EAST, AND WEST. WHAT IS THE NAME OF THE FOURTH CHILD?            SANDY, OBVIOUSLY</p> <p>WHY WAS 6 AFRAID OF 7?            BECAUSE 7,8,9</p>	
<b>Copy 3</b> Listen to Short Story 112 at 9wpm: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/ss-10.112.mp3">https://cwops.org/wp-content/uploads/2022/07/ss-10.112.mp3</a> Listen to the story all the way through without stopping, then listen a second time. Please spend a half-hour on this exercise. Make notes about what you heard in the story	

# CW Academy Fundamental Level Curriculum

<b>Session 12 Homework Day 2 - Effective Speed: 10wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, numbers	
25wpm Character Speed, 10wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Run the 1-minute session, check results, and repeat three times	
<b>Send 2</b>	
Be very precise sending the following:	
<b>GD MATE UR SIG 5NN DE (YOUR CALLSIGN)</b> <b>TU NAME HR IS (YOUR NAME) (YOUR NAME) DE (YOUR CALLSIGN)</b> <b>QTH IS (YOUR QTH) (QTH) DE (YOUR CALLSIGN)</b>	
Repeat three times	
<b>Copy 2</b>	
Set your browser to <b>Cntl+Click</b> <a href="https://morse.mdp.im/news/">https://morse.mdp.im/news/</a>	
25wpm Character Speed, 10wpm Effective speed	
Click on the play button and try to copy the headline. Repeat once or twice	
Hoovering over the blurred text will reveal the headline	
Play a couple of the headlines. The headlines change every day	
<b>Send 3</b>	
Repeat precisely sending the qso phrases from Send 2	
Record your sending and play it back	
Critique your sending and try again. Record and play back. Did you improve?	

# CW Academy Fundamental Level Curriculum

<b>Session 12 Homework Day 3 - Effective Speed: 10wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' Drill	
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, mixed characters	
25wpm Character Speed, 10wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Do three 1-minute sessions	
<b>Send 2</b>	
Send a list of common words	
Send the list through one time without stopping	
<b>THEY FROM WE SAY HER SHE OR WILL AN MY ONE AN WILL UP OUT WHO</b>	
Then send the list a second time, record, and play back. Critique your sending and repeat if necessary	
<b>Copy 2</b>	
Set your browser to <b>Cntl+Click</b> <a href="https://morse.mdp.im/news/">https://morse.mdp.im/news/</a>	
25wpm Character Speed, 10wpm Effective speed	
Click on the play button and try to copy the headline. Repeat once or twice	
Hoovering over the blurred text will reveal the headline	
Play a couple of the headlines. The headlines change every day	
<b>Send 3</b>	
Open either <a href="http://bbc.com">bbc.com</a> or <a href="http://cnn.com">cnn.com</a>	
On <a href="http://bbc.com">bbc.com</a> click on 'News' and send the headlines in bold	
On <a href="http://cnn.com">cnn.com</a> send the headlines in the far-right column	
<b>Copy 3</b>	
Listen to QSO 103 at 10wpm: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/qso-10.103.mp3">https://cwops.org/wp-content/uploads/2022/07/qso-10.103.mp3</a>	
Listen all the way through without stopping. Then listen a second time. You're listening to get the important parts of the QSO:	
CQer Call Sign _____	Answerer Call Sign _____
CQer Name _____	Answerer Name _____
CQer RST Sent _____	Answerer RST Sent _____
CQer QTH _____	Answerer QTH _____



# CW Academy Fundamental Level Curriculum

<b>Session 13 Homework Day 1</b> <b>Effective Speed: 10wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 10wpm Effective speed Set Extra Word Spacing to 3 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results  If score is less than 80%, repeat until 80% or 5 times	
<b>Send 2</b> Read the following QSO carefully and then send it:	
<b>CQ CQ DE K6RB K6RB K6RB K</b> <b>(YOUR CALL) (YOUR CALL) K</b>  <b>(YOUR CALL) DE K6RB TU FER CALL UR RST 589 58N QTH IS SANTA CRUZ SANTA CRUZ</b> <b>NAME IS ROB ROB HW?</b> <b>(YOUR CALL) DE K6RB K</b>  <b>K6RB DE (YOUR CALL) R TU ROB UR RST IS 589 QTH IS (YOUR QTH) (YOUR QTH) ES NAME IS (YOUR</b> <b>NAME) HW?</b> <b>K6RB DE (YOUR CALL) K</b> <b>(YOUR CALL) DE K6RB ROCK SOLID (YOUR NAME) TU FER UR INFO NICE TO MEET U HPE CU AGN SN</b> <b>73 SK</b> <b>(YOUR CALL) DE K6RB K</b>  <b>K6RB DE (YOUR CALL) OK ROB NICE TO MEET U TOO ES HPE WE CAN DO IT AGN 73 SK</b> <b>K6RB DE (YOUR CALL) E E</b>  <b>E E</b>	
<b>Copy 2</b> If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training'. Otherwise repeat 'Copy 1'	
<b>Send 3</b> Send the QSO from Send 2 again. Record your sending and play it back. Critique your sending Then send it a second time based on what you learned listening to your sending	
<b>Copy 3</b> Listen to Short Story 113 at 10wpm: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/ss-10.113.mp3">https://cwops.org/wp-content/uploads/2022/07/ss-10.113.mp3</a> Listen to the story all the way through without stopping, then listen a second time and as many times needed to understand the story. Please spend a half-hour on this exercise. Make notes about what you heard in the story.	

# CW Academy Fundamental Level Curriculum

<b>Session 13 Homework Day 2 - Effective Speed: 10wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, figures	
25wpm Character Speed, 10wpm Effective speed	
Set Extra Word Spacing to 3 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Run the 1-minute session and check results, and repeat a second time	
<b>Send 2</b>	
Send your call sign and name five times in a row without making a mistake	
If you make a mistake, start over again	
If after three tries you haven't succeeded, take a break and come back to try again	
<b>Copy 2</b>	
Set your browser to <b>Cntl+Click</b> <a href="https://morse.mdp.im/news/">https://morse.mdp.im/news/</a>	
25wpm Character Speed, 10wpm Effective speed	
Click on the play button and try to copy the headline. Repeat once or twice	
Hoovering over the blurred text will reveal the headline	
Play a couple of the headlines. The headlines change every day	
<b>Send 3</b>	
Repeat Send 2 and record your sending	
Play back the recording and critique your code. Can you copy it? Does it sound like what you want others to hear?	

# CW Academy Fundamental Level Curriculum

<b>Session 13 Homework Day 3 - Effective Speed: 10wpm</b>									
<b>COPY</b>	<b>SEND</b>								
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right; font-size: small;">Do the 'Daily Scales' <i>Drill</i></p> <p style="text-align: center;">Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed</p>									
<p><b>Copy 1</b></p> <p>Run LCWO Code Groups            1-minute session, letters            25wpm Character Speed, 10wpm Effective speed            Set Extra Word Spacing to 3 (give yourself a bit more time between groups)            Set Start Delay at 2 seconds            Groups of 5 characters            Do two 1-minute sessions</p>									
<p style="text-align: right;"><b>Send 2</b></p> <p style="text-align: center;">Now send your call sign, name, and QTH five times in a row without an error            If you make a mistake, start over again            If after three tries you still haven't sent it without error, take a break and come back to try again later</p>									
<p><b>Copy 3</b></p> <p>Listen to QSO 104 at 10wpm: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/qso-10.104.mp3">https://cwops.org/wp-content/uploads/2022/07/qso-10.104.mp3</a>            Listen all the way through without stopping. Then listen a second time. You're listening to get the important parts of the QSO:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">CQer Call Sign _____</td> <td style="width: 50%;">Answerer Call Sign _____</td> </tr> <tr> <td>CQer Name _____</td> <td>Answerer Name _____</td> </tr> <tr> <td>CQer RST Sent _____</td> <td>Answerer RST Sent _____</td> </tr> <tr> <td>CQer QTH _____</td> <td>Answerer QTH _____</td> </tr> </table>		CQer Call Sign _____	Answerer Call Sign _____	CQer Name _____	Answerer Name _____	CQer RST Sent _____	Answerer RST Sent _____	CQer QTH _____	Answerer QTH _____
CQer Call Sign _____	Answerer Call Sign _____								
CQer Name _____	Answerer Name _____								
CQer RST Sent _____	Answerer RST Sent _____								
CQer QTH _____	Answerer QTH _____								
<p style="text-align: right;"><b>Send 3</b></p> <p style="text-align: center;">Do Send 2 again while recording your sending            Play the recording back and critique your sending            Send your call sign, name, and QTH again putting into practice what you learned by listening to your sending</p>									

# CW Academy Fundamental Level Curriculum

<b>Session 14 Homework Day 1</b> <b>Effective Speed: 10wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i> Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 10wpm Effective speed Set Extra Word Spacing to 2 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results  If score is less than 80%, repeat until 80% or 5 times	
<b>Send 2</b> Read the following QSO carefully and then send it:	
<b>CQ CQ DE AC4BT AC4BT K</b>  <b>AC4BT DE (YOUR CALL) (YOUR CALL) K</b>  <b>(YOUR CALL) DE AC4BT TU FER CALL UR RST IS 559 559 IN VA VA NAME IS JERRY JERRY HW? (YOUR CALL) DE AC4BT K</b>  <b>AC4BT DE (YOUR CALL) R GUD CPY JERRY ES TU FER RPT FM VA UR RST IS 569 IN (YOUR QTH)</b>  <b>NAME IS (YOUR NAME) HW?</b>  <b>AC4BT DE (YOUR CALL) K</b>  <b>(YOUR CALL) DE AC4BT GUD CPY (YOUR NAME) MNI TKS FER QSO HPE CU AGN SN 73 SK</b>  <b>(YOUR CALL) DE AC4BT K</b>  <b>DE (YOUR CALL) OK JERRY NICE TO QSO WID U TOO I WILL LOOK FER U AGN JERRY 73</b>  <b>AC4BT DE (YOUR CALL) SK E E</b>  <b>E E</b>	
<b>Copy 2</b> If 'Copy 1' yielded 80% within 5 attempts, do a session of 'Call Sign Training' at 10wpm effective speed. Otherwise repeat 'Copy 1'	
<b>Send 3</b> Send the QSO from Send 2 again. Record your sending and play it back. Critique your sending Then send it a second time based on what you learned listening to your sending	
<b>Copy 3</b> Listen to Short Story 114 at 10wpm: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/ss-10.114.mp3">https://cwops.org/wp-content/uploads/2022/07/ss-10.114.mp3</a> Listen to the story all the way through without stopping, then listen a second time and as many times needed to understand the story. Please spend as much time as needed on this exercise. Make notes about what you heard in the story.	

# CW Academy Fundamental Level Curriculum

<b>Session 14 Homework Day 2 - Effective Speed: 10wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b>	
Do the 'Daily Scales' <i>Exercise</i>	
Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed	
<b>Copy 1</b>	
Run LCWO Code Groups	
1-minute session, numbers	
25wpm Character Speed, 10wpm Effective speed	
Set Extra Word Spacing to 2 (give yourself a bit more time between groups)	
Set Start Delay at 2 seconds	
Groups of 5 characters	
Run the 1-minute session and check results, and repeat a second time	
<b>Send 2</b>	
Send your call sign and name five times in a row without making a mistake	
If you make a mistake, start over again	
If after three tries you haven't succeeded, take a break, and come back to try again	
<b>Copy 2</b>	
Set your browser to <b>Cntl+Click</b> <a href="https://morse.mdp.im/news/">https://morse.mdp.im/news/</a>	
25wpm Character Speed, 10wpm Effective speed	
Click on the play button and try to copy the headline. Repeat once or twice	
Hoovering over the blurred text will reveal the headline	
Play a couple of the headlines. The headlines change every day	
<b>Send 3</b>	
Repeat Send 2 and record your sending	
Play back the recording and critique your code. Can you copy it? Does it sound like what you want others to hear?	

# CW Academy Fundamental Level Curriculum

<b>Session 14 Homework Day 3 - Effective Speed: 10wpm</b>	
<b>COPY</b>	<b>SEND</b>
<p style="text-align: right;"><b>Send 1</b></p> <p style="text-align: right;">Do the 'Daily Scales' <i>Drill</i></p> <p style="text-align: center;">Set the keyer at 25wpm character speed and practice character spacing at 10wpm effective speed</p>	
<p><b>Copy 1</b></p> <p>Run LCWO Code Groups            1-minute session, mixed characters            25wpm Character Speed, 10wpm Effective speed            Set Extra Word Spacing to 2 (give yourself a bit more time between groups)            Set Start Delay at 2 seconds            Groups of 5 characters            Do two 1-minute sessions</p>	
<p style="text-align: right;"><b>Send 2</b></p> <p style="text-align: center;">Now send your call sign, name, and QTH five times in a row without an error            If you make a mistake, start over again            If after three tries you still haven't sent it without error, take a break and come back to try again later</p>	
<p><b>Copy 3</b></p> <p>Listen to QSO 105: <b>Cntl+Click</b> <a href="https://cwops.org/wp-content/uploads/2022/07/qso-10.105.mp3">https://cwops.org/wp-content/uploads/2022/07/qso-10.105.mp3</a>            Listen all the way through without stopping. Then listen a second time. You're listening to get the important parts of the QSO:</p> <p>CQer Call Sign _____                      Answerer Call Sign _____</p> <p>CQer Name _____                              Answerer Name _____</p> <p>CQer RST Sent _____                        Answerer RST Received _____</p> <p>CQer QTH _____                              Answerer QTH _____</p>	
<p style="text-align: right;"><b>Send 3</b></p> <p style="text-align: center;">Do Send 2 again while recording your sending            Play the recording back and critique your sending            Send your call sign, name, and QTH again putting into practice what you learned by listening to your sending</p>	

# CW Academy Fundamental Level Curriculum

<b>Session 15 Homework Day 1 - 3</b> <b>Effective Speed: 11wpm</b>	
<b>COPY</b>	<b>SEND</b>
<b>Send 1</b> Do the 'Daily Scales' <i>Warm Up</i>	
Set the keyer at 25wpm character speed and practice character spacing at 11wpm effective speed	
<b>Copy 1</b> Run LCWO Code Groups 1-minute session, letters 25wpm Character Speed, 11wpm Effective speed Set Extra Word Spacing to 3 (give yourself a bit more time between groups) Set Start Delay at 2 seconds Groups of 5 characters Run the 1-minute session and check results  If score is less than 80%, repeat until 80% or 5 times	
The homework for this week is to GET ON THE AIR! Make at least three QSO's before the next online session	

<b>Session 16 Homework</b>
<p>By now you should have developed a habit of daily Morse code practice. Your homework is to continue this practice habit. Don't let it slip away.</p> <p>You should have been one the air and made some CW contacts. The best use of your Morse code skills is to GET ON THE AIR! Set some goals and track your progress!</p> <p>Thank you for sticking with the class to the end of the semester!</p>

Appendix A:  
Morse Code World Setup for Word List

International Morse Training
CW Generator CWops (EN) CWops (JP) QSO Word List ICR

Board

Text

0/34  
Words

### Playback Controls

**Play**

▶ Play

▶▶ Play Next

▶▶▶ Next

■ Stop

**Word List Sequencing**

↺ Repeat

✂ Shuffle

1 Once each

↻ Reset

Choose what sequence to play and show for each message:

1: Show & Say Before

📄 Flashcard

🗣️ Speech

2: Morse

🎵 Sound

💡 Light

1 Count

3: Thinking

⏸️ Pause

4: Show & Say After

📄 Flashcard

🗣️ Speech

5: Morse

🎵 Sound

💡 Light

6: Bell

🔔 Bell

### History

Time	Text	Speed	#

Text

Download

Clear

### Morse Sound Controls

Frequency

Volume

Advanced timing

Character speed

Farnsworth speed

### Speech Controls

Voice

Rate  Volume



# CW Academy Fundamental Level Curriculum

## Appendix B: List of EU Country

### Codes:

<b>AT</b>	<b>Austria</b>	<b>LV</b>	<b>Latvia</b>
<b>BE</b>	<b>Belgium</b>	<b>LT</b>	<b>Lithuania</b>
<b>BG</b>	<b>Bulgaria</b>	<b>LU</b>	<b>Luxembourg</b>
<b>HR</b>	<b>Croatia</b>	<b>MT</b>	<b>Malta</b>
<b>CY</b>	<b>Cyprus</b>	<b>NL</b>	<b>Netherlands</b>
<b>CZ</b>	<b>Czech Republic</b>	<b>PL</b>	<b>Poland</b>
<b>DK</b>	<b>Denmark</b>	<b>PT</b>	<b>Portugal</b>
<b>EE</b>	<b>Estonia</b>	<b>RO</b>	<b>Romania</b>
<b>FI</b>	<b>Finland</b>	<b>SK</b>	<b>Slovakia</b>
<b>FR</b>	<b>France</b>	<b>SL</b>	<b>Slovenia</b>
<b>DE</b>	<b>Germany</b>	<b>ES</b>	<b>Spain</b>
<b>GR</b>	<b>Greece</b>	<b>SE</b>	<b>Sweden</b>
<b>HU</b>	<b>Hungary</b>		
<b>IE</b>	<b>Ireland</b>		

# CW Academy Fundamental Level Curriculum

## Appendix C: US State

### Abbreviations

AK - Alaska

AL - Alabama

AR - Arkansas

AZ - Arizona

CA - California

CO - Colorado

CT - Connecticut

DE - Delaware

FL - Florida

GA - Georgia

HI - Hawaii

IA - Iowa

ID - Idaho

IL - Illinois

IN - Indiana

KS - Kansas

KY - Kentucky

LA - Louisiana

MA - Massachusetts

MD - Maryland

ME - Maine

MI - Michigan

MN - Minnesota

MO - Missouri

MS - Mississippi

MT - Montana

NC - North Carolina

ND - North Dakota

NE - Nebraska

NH - New Hampshire

NJ - New Jersey

NM - New Mexico

NV - Nevada

NY - New York

OH - Ohio

OK - Oklahoma

OR - Oregon

PA - Pennsylvania

RI - Rhode Island

SC - South Carolina

SD - South Dakota

TN - Tennessee

TX - Texas

UT - Utah

VA - Virginia

VT - Vermont

WA - Washington

WI - Wisconsin

WV - West Virginia

WY - Wyoming