Morse Code Basic Course
Practice Instructions
Version 3.0

By: P. Glenn Norman – W4YES

This document and class are dedicated to Nancy Kott, WZ8C, SK
Among Nancy's many grand CW achievements, she was the inspiration
for the CW learning concept of Instant Recognition

© Copyright 2022

Revision Record

2019 – Original Version (v 1.0) by Glenn Norman (W4YES), with support from Dallas Ward (K1DW), and Phil Bartash (W2OZB)
2020 – Revision 2.0 by Glenn Norman (W4YES) with support from Tom Weaver (W0FN) - Replace CW Player with Stephen Phillip's Word List Trainer in addition to significant arc of progression revisions
2020 – Revision 2.1 by Glenn Norman (W4YES) with support from Tom Weaver (W0FN) - Character Recognition practice emphasis, more clearly define each day's practice, diagrams added; created by Glenn)
2021 – Revision 2.2 by Glenn Norman (W4YES) with support from Tom Weaver (W0FN) – Updates, Clarifications, and Removal of references to videos
2022 – Revision 3.0 by Glenn Norman (W4YES) and Tom Weaver (W0FN) – Based upon student and advisor feedback

Table of Contents

All class resources are at:
w4yes.com

What is the Basic Class?

Introduction

Reading With Your Ears

This Morse Code Class is a unique and proven method for those wishing to *fully* experience the use of Morse Code in ways that are enjoyable and even exciting. This Class will place you on a trajectory toward Instant *Word* Recognition and Morse Code fluency. Regardless of whether your interest lies in SOTA (Summits on the Air), POTA (Parks on the Air), contesting, ragchewing, DXing, this class offers the means to enhance all aspects of Morse Code communication.

What's unique about this class? It focuses on Morse Code fluency. Morse Code classes typically begin and end with a focus on "decoding dits and dahs and copying" them by typing or writing the characters. Decoding and copying are necessary milestones, but this Morse Code class will put you on a path to Morse Code fluency.

This Morse Code Basic Class considers decoding and copying as *necessary preparation* for *relaxed and instant comprehension* of Morse Code (CW).

"Fluency" is derived from the word, "fluid," meaning to flow freely – changeable, not rigid, relaxed. The human mind has the capacity to fluently communicate in many ways. Ceasing the CW journey at decoding and copying individual characters misses the gratification of *relaxed comprehension*. CW fluency lets you to build and understand words as they are formed, which enables complete thoughts to be easily communicated – like in a spoken language.

If you're ready to begin your Morse Code journey toward the ultimate level, set your sights on **Instant Word Recognition (IWR)** and achieve whatever you're willing to set your mind to. This class offers the tools and knowledge necessary to achieve Morse Code fluency in a relaxed and fun way. Let's get started!

A Quick Overview

- Our CW comprehension practice starts at 4 words per minute (wpm) and ends at 12 wpm
- You'll learn Morse code by unique 'character sounds' that enable **I**nstant **C**haracter **R**ecognition and **I**nstant **W**ord **R**ecognition
- Practicing in multiple short sessions totaling one hour **every day** works best
- You'll practice online at **Morsecode.world** (in Word List Trainer)

Tutorial Video – Class Overview

Three Basic Class Goals

1. **Head Sending** with accuracy, confidence, and excellent timing
   - Sending from your thoughts – not sending character-by-character from a printed page
   - Focused on thoughts, choice of words, and spelling
   - Head sending is a mental/conversational skill – different than sending from a printed page
   - Being aware of and working to perfect your CW rhythm, tempo, and word spacing
   - Relax and accept sending mistakes. Even the most experienced CW operators make mistakes, so relax – they are part of the process.

2. **Head Copying** (using your ears and brain)
   - Understanding words, phrases, and short stories at 10-12 wpm with full comprehension
   - Eyes Closed – no writing or typing (there is nothing visual about CW)
   - Keep pace (flow) with the incoming code – recognize and miss with equal speed
   - Your comprehension will improve as CW sounds become as recognizable as spoken letters and numbers. All that's required is consistent daily practice discipline and patience.

3. **On-Air Activity** with "code buddies' and other CW operators
   - Have conversational Morse code QSOs using a paddle and your HF radio (rag chews)
   - On-air QSOs are the best way to improve – **don't wait to get better to get on the air; get on the air to get better**
   - Have QSOs of all types (conversational rag chews and/or quick exchanges); these are necessary to proceed to the next level of CW proficiency. On-air QSOs will significantly improve your progress.

Course Focus
Instant Word Recognition (IWR)

Recognizing unique CW character sounds is the key to word and thought recognition. You'll move beyond decoding and into recognizing individual and unique sounds of each CW character. This enables you to build and recognize words and thoughts as their characters arrive ("Reading With Your Ears"). That vital concept is incorporated throughout this Basic class. You'll practice and learn to recognize *and miss* characters at their incoming rate. Improving your **I**nstant **C**haracter **R**ecognition (**ICR**) speed *and* your character missing speed are equally vital. Morse code fluency requires a fluid approach – like a relaxed float downstream.

Course Requirements

1) Ability to get on the air (HF transceiver, antenna, and paddle)
2) Dedication and ability to practice at least one hour per day in <u>multiple short sessions</u>
3) Prior good familiarity with Morse code (letters, numbers, some punctuation and some prosigns)
4) High-speed Internet connection with ZOOM (on a Windows PC, Laptop, Tablet, Mac, etc.)
5) A webcam (microphone and camera device; built-in or a webcam plugged into a USB port)
6) Prior experience using a single or dual lever paddle – No Straight Keys or Bugs
7) Headphones or earbuds are **required** to avoid audio feedback and echoing during class
8) An audio recorder (a computer, a smartphone app, or any other preferred recording device)

Classes and Preparation

Class Structure and Meetings

The duration of the course is 8 weeks, consisting of 2 sessions per week with your Advisor and classmates. **Practice your assignments between and before each online class meeting.** Advisors assess how you are doing using interactive exercises and other means. Classes are not dedicated for practice; <u>most practice happens between classes</u>. Advisors coach, encourage, and provide feedback / tips to help you conquer difficulties and frustration.
NOTE: Recording your ICR practice and periodically sharing those recordings is vital to your success.

Be prepared to discuss these topics in Class

- Ask for clarification of anything you don't understand
- Discuss your list of thoughts, questions, frustrations and successes
- Share with your classmates any techniques you have discovered
- Discuss observations of your experience while head copying and head sending the content in this class
- What are the different feelings that emerge when head copying and head sending?
- Are you achieving your CW goals?
- How are you getting comfortable not recognizing characters and keeping pace with the code?

Basic Class Tips

- If you plan to use a CW decoder don't sign up for this class. Use your ears and brain.
- While you will have guidance, you are your own teacher. Become a practice expert.
- Recognizing and missing fast are mutually necessary, you can't have one without the other
- Hanging on to missed characters (failing to quickly let go and refocus) stops progress
- Practice and on-air consistency are the most important factors in your improvement.
- Relax, practice, enjoy the class, be patient and don't be hard on yourself
- Don't expect to comprehend CW in your head at first and please understand that using 'crutches' (pencil, keyboard, decoders, etc.) will stop your progress

- **Pausing and Pondering (don't!)**
    - Missing fast is necessary. Whether a miss or a 'get', keep pace.
    - **Do Not pause and ponder on unrecognized characters.** Insisting on 100% copy brings your CW comprehension to a screeching halt. Close your eyes and relax; there's nothing visual about copying or sending Morse code, and there's nothing wrong with missing stuff.

Practice Instructions

Managing Your Practice
- Practice 1 hour per day in multiple short (10-15 minutes) practice sessions
- Consistency is very important while learning to communicate in CW – practice <u>every</u> <u>single</u> <u>day</u>
- Know when to take a break. Taking a break can often be more productive than pressing on.
- Start by listening to the alphabet, numbers, and punctuation characters at 30 to 37 wpm for a few practice sessions prior to the first class. You'll begin to hear distinct CW character sounds.
- You'll start listening to short words, then move on to longer words, short phrases, and short stories as the Basic class progresses – and always practice daily on individual characters

Notice: You'll be moving beyond decoding dits and dahs
- You've learned Morse code one way, now you're learning it by unique CW character sounds
- Fast computer-generated character speeds (30 to 37wpm or so) enable you to hear unique character sounds instead of just dits and dahs

Practice is Everything
Without it, nothing happens.

Is class time considered individual practice? NO. While group practice may happen in class, classes are not a substitute for individual daily practice.

Perform the daily practice routine consistently every day of the week.

Practice Information
How to Use the Practice Tool – Word List Trainer

https://morsecode.world/international/trainer/words.html

1. **Tutorial Video – Navigating Practice**
2. **Tutorial Video – WLT - How it Works**
3. **Tutorial Video – WLT Practice Setup**

Instant Word Recognition (IWR)

Tutorial Video – How to Recognize Words

Daily Practice Routine
Description
This is every day for 60 days

Daily Practice Consists of 4 Main Steps

1) **Head Sending** – a 10 minute session/day
   a. Students that neglect sending practice routinely don't do well. Keep your eye on the ball (sending).
   b. **Eyes closed always** – there's nothing visual about head sending Morse code
   c. Set your keyer to a comfortable wpm speed that helps you to minimize sending errors; perhaps 15-20 wpm. Sending requires practice, so do your best, be consistent and enjoy your improvement.
   d. Record your sending practice – listening reveals rhythm and word spacing issues
   e. Mention the date on each recording; this will help you track your progress
   f. Head sending only – don't read and send - eyes closed while you send
   g. Head sending is a mental/conversational skill; it's different than sending while reading

2) **Head Copying** – 3 or more 15-minute sessions/day
   a. **Eyes closed always** - there's nothing visual about *listening* to Morse code
   b. Start by listening to the alphabet, numbers, and punctuation characters between 30–37 wpm. Those sending speeds let you hear distinct, unique overall character sounds instead of individual dits and dahs
   c. During the learning process, you'll speak each character, which creates a mental association of the overall Morse sounds to the characters. Once you can speak each character up to 8 wpm, you'll be ready to stop speaking and begin silent head copying.
   d. Miss and recognize characters and words <u>at their incoming rate</u> - **you're here *to learn how to head copy*, not to get everything right**
   e. ICR and IWR Practice = Play 'Beat the Computer' - recognize and miss quickly!
   f. **If you pause on characters, you'll miss more**
   g. **Missing and Recognizing** are both a necessary component of head copy.

3) **Improving Troublesome Characters** - 1 or 2   10-min sessions/day
   a. Use the 'Generated' tab in Word List Trainer to focus and work on slow and unrecognized characters

4) **Tracking Progress… WITHOUT MEASURING IT**
   a. **Head sending** – Record every practice session (remember to mention the date on the recording)
   b. Every couple of weeks go back and listen to an earlier sending session
   c. **Head Copying** – Remember where you were when you started this Basic class and be encouraged with each step.

Daily Practice Routine
Flow Diagram

Head Sending Practice
(10 mins)

Send Callsign 5-10 times
Send Name 5-10 times
Send Alphabet, Numbers, and Punctuation
Send a pangram of your choice (print out pangram page, change weekly)
Tip: Once you've memorized a pangram, head send it.

CW Comprehension Practice
(3 or more 15 min sessions / day)

Set Word List Trainer using the practice file per the Session Assignment (Next Page)

Select "Play Next" and speak the characters / words / phrases before the computer.
If the computer wins, define what's slowing you down and/or get with your Advisor.
Note: Extending the "Thinking Time" isn't necessarily a fix. Try to process characters at their incoming rate. You're not here to get everything right, you're learning how to head copy (comprehend) Morse code.
DO NOT pause and ponder missed characters – it's an improvement killer.

Keep track of which characters are slowing you down. Track this list as it changes – both for focused practice and for keeping your Advisor informed.

Improving Troublesome Characters
(1 or 2   10 min sessions / day)

Practice Troublesome characters using the "Generated" Tab.
Enter the "Characters that you want to practice."
Minimum and Maximum Word Length = 1

Select Repeat and Shuffle, Play Next.
Speak the characters / words / phrases

Tracking Progress

Periodically email audio recordings of your sending and copy practice to your Advisor

Don't measure your progress. Instead look over your shoulder and recognize that you're moving forward.

Session Practice Assignments
Use the Daily Practice Routine on Prior Page

Session #	Practice File / Content	Session Practice		
CHARACTERS (ICR)				
1	A-Z	Get Familiar with the Tools and the Practice Routine ICR Practice "Beat the Computer" – Thinking Time ≈ 2-3 sec 　　　Set the Time to a value that allows for discovery of troublesome characters		
2	Study "How to Recognize Words"	Study and be prepared to discuss "How to Build and Recognize Words" Self-observe your copy preparedness and understanding of this important process		
3	A-Z	ICR Practice = "Beat the Computer" - Thinking Time = same value above Define List of Slow/Missed Letters – Practice on them		
4	A-Z, 0-9	ICR Practice - "Beat the Computer" - Thinking Time ≈ may need some extra time Define List of Slow/Missed Characters – Practice on them		
5	Your Troublesome Character List	ICR Practice on your troublesome character list (defined above) 　　　"Beat the Computer" – Thinking Time = same value as above Be Prepared to Discuss Troublesome Characters and your practice		
6	A-Z, 0-9, some punctuation	ICR Practice - "Beat the Computer" – Make Thinking Time challenging Prepare for words & phrases by Improving ICR on all Characters		
WORDS and PHRASES (IWR)			**Continue CHARACTERS (ICR)**	
7	State Abbr., 2-Letter Words & Phrases	Farnsworth = 4-5 wpm Thinking Time = (≤ 2 sec)	ICR Practice - Beat the Computer Thinking Time = (start at 2 sec, reduce by 200ms as able) **Use "A-Z, 0-9, some punctuation" – from now on**	
8	1-3 Letter Words and Phrases	Farnsworth = 6 wpm (≤ 2 sec)	ICR practice - Beat the Computer 　　　　　　(reduce by 200ms as able)	
9	1-4 Letter Words and Phrases	Farnsworth = 6-7 wpm (≤ 2 sec)	ICR practice - Beat the Computer 　　　　　　(reduce by 200ms as able)	
10	1-5 Letter Words and Phrases	Farnsworth = 7 wpm (≤ 2 sec)	ICR practice - Beat the Computer 　　　　　　(reduce by 200ms as able)	
11	Top 100 English Words	Farnsworth = 8 wpm (≤ 2 sec)	ICR practice - Beat the Computer 　　　　　　(reduce by 200ms as able)	
12	Top 100 QSO Words	Farnsworth = 9 wpm (≤ 2 sec)	ICR practice - Beat the Computer 　　　　　　(reduce by 200ms as able)	
ON-AIR QSOs, Short Stories			**Continue CHARACTERS (ICR)**	
13	Very Short Stories	Farnsworth ≥ 10 wpm	ICR practice – Beat the Computer - Thinking Time ≤ 1 sec	
14	Study "Anatomy of a CW QSO"	Become familiar with QSO Protocol. Practice mock QSOs.	ICR practice – Beat the Computer - Thinking Time ≤ 1 sec	
15	Several On-Air Ragchew QSOs	Have on-air QSOs with your code buddy and other CW ops	ICR practice – Beat the Computer - Thinking Time ≤ 1 sec	
16	Short Stories	Farnsworth ≥ 12 wpm	ICR practice – Beat the Computer - Thinking Time ≤ 1 sec	

Frequently Asked Questions

1) **Q. What is the difference between character speed and effective speed?**

   A. Farnsworth spacing is a learning tool that allows for a faster, more recognizable "character speed" while inserting additional spacing between the characters to provide a slower overall "effective speed."

2) **Q. What is the most important skill needed to improve with CW?**

   A. Recognizing the characters quickly enough to comfortably keep pace with the incoming code is ICR. With practice, the two sounds (Morse character and its spoken character) create a mental association that enables Instant Character Recognition (ICR).

3) **Q. Words longer than 4 letters are very difficult. How can I improve on longer words?**

   A. You're not having trouble with words. You're having trouble recognizing and assembling characters into words as they arrive. Improving your ability to head copy words requires improving your character recognition and assembly time. Building word(s) in your mind as letters arrive is necessary. See the Tutorial Video supplement, "How to Recognize Words."

4) **Q. When missing a character, I tend to miss several in a row. How do I improve?**

   A. This is almost always due to a (detrimental) determination to copy 100%. That is an unrealistic expectation and will wreck your recognition speed. The more quickly you move past missed characters, the fewer characters you will miss. Process characters at their incoming rate. Occasionally practice with ICR Speed Drills – That's a good way to improve your ability to keep pace with the code.

5) **Q. How can I improve my sending?**

   A. Good sending requires regular practice and listening to recordings of your sending. Routinely record your sending practice sessions and play them back to critique your sending rhythm, character spacing and word spacing. Students often focus mostly on forming characters correctly and overlook good spacing and sending rhythm or tempo. Getting good at spacing and sending rhythm tends to be more difficult than sending characters correctly.

6) **Q. I'm reluctant to get on the air. How do I find the courage to get on the air & mess up?**

   A. First, have your callsign and name assigned to muscle memory – be able to send them reliably and well. Secondly, have a script. This reluctance is a common reaction, and typically derives from a fear of failure. Know that your first few QSOs will be intense, and you will make mistakes. Nobody cares but you! You'll improve with each QSO and get more comfortable communicating in Morse code. Set a goal to have a certain number of QSOs per week.

Advisor Tips

1. Starting students out with character sound recognition at 30 to 37 wpm (character speed) starts the process of moving Beginner graduates away from dits and dahs and toward hearing distinct 'CW Sounds'. As you know, the more quickly a student makes this transition and starts recognizing unique/distinct character sounds instead of parsing dits and dahs, the faster they'll improve their head copy skills.

2. Students' initial CW sending speeds should be much slower than the fast-listening speeds recommended above. Sending speed should be chosen by each student - one that would help minimize errors. We've had many students start at ~15 to 20 wpm and that's fine. Great rhythm, tempo, and word spacing <u>need to be emphasized</u>. Judging from the number of on-air QSOs we hear wherethecharactersareallruntogether, we'd like to create more CW ops with great sending skills.

3. The importance of speaking the characters during ICR practice should be emphasized. Students practicing this way (up to 8 wpm or so) will create a cognitive association of the two sounds (Morse character/spoken character). That mental association transfers to a permanent subconscious connection that leads to rapid recognition. Students need to advance toward subconscious recognition (nearly instant and effortless) and leave conscious recognition behind (much slower with lots of mental effort).

4. Students need to be reminded to do ICR Practice (alphabet, numbers, and punctuation) every day. <u>Simply put, ICR is foundational</u>. Once students start practicing words, they tend to skip ICR practice because word practice is more fun. Unfortunately, we've seen students who stop their ICR practice get very frustrated with their lack of progress on word recognition, never realizing that their problem isn't word recognition - it's actually an alphabet and number recognition problem.

5. <u>For CWA Advisors only</u>: To be promoted to the next level, we feel students should be capable of solid copy on Short Stories that they've never heard before at 10-12wpm effective speed (preferably 12 wpm). Students promoted to the Intermediate class should also have been on the air having many successful ordinary (RST, QTH, Name) QSOs. Students with few or no on-air QSOs and/or rag chews are very probably not adequately prepared for the next level. They should be invited to get on the air more often during the break between semesters and then repeat the Basic Class at the next semester.

6. <u>For CWA Advisors only</u>: We recommend that Advisors explain CWA's Beginner and Basic classes as all about learning important Morse code techniques and skills, but the Intermediate and Advanced classes are different. They are less about learning and more about recognition speed improvements, contesting, rag chewing, DXing, etc. We've found that once students are informed that the Intermediate class expects a 13 wpm head copy shortly after it begins, they usually understand that they shouldn't enroll until they're ready. Students who repeat the Basic class find that they enjoy being ahead of the game and often try to help other students by offering to be a code buddy. Moving up through CWA's classes isn't like graduating from one grade to the next in school. Benefitting from the Basic class a second time isn't failure – it's just more opportunity for practice and preparation.