



Utah DCC 15 February 2020

Morse Code through the CW Academy

Roland Smith K7OJL

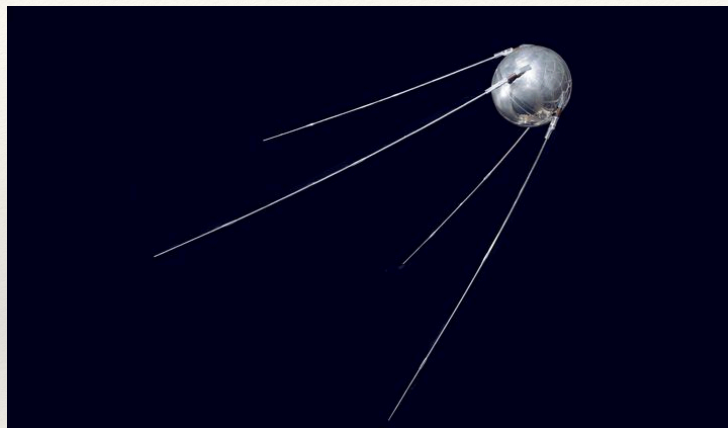
The Why, What, and How

Roland Smith

- ❖ Amateur Radio Call Sign
K7OKJL
- ❖ First Licensed in 1959 as
KN7OJL
- ❖ Hold Amateur Extra Class
License
- ❖ Vice President, West Desert
Amateur Radio Club in Tooele,
Utah
- ❖ EC for Tooele County



Licensed as a Novice. 60 Watts CW on portions of certain bands. Had to wait for license to arrive in the mail. In November 1959 upgraded to General



Sputnik 1 was launched in October 1957. A local SWL brought his Hammerlund receiver to our Junior High science class so we could listen to a Sputnik overhead pass.

** Space is the key to the future of Amateur Radio

NO CELL SERVICE ON THE MOON OR MARS

People going to the moon or Mars will include many amateur radio operators

** Does your club have a "Space Initiative"?

Walmart satellite passes

Jr High Science Classes (propagation ... listen to Jupiter)

My Morse Code (CW) Journey

The Beginning

- ❖ Using records and listening to W1AW code practice runs, passed the 5wpm Novice test in 1958
- ❖ On the air as a Novice for about 7 months, passed the 13wpm General test and upgraded to General in 1959
- ❖ Graduated from High School in 1963, enlisted in the US Air Force, and ended up in Vietnam in February, 1965
- ❖ Discovered Air Force MARS....

I was in Air Force Intelligence working on a highly specialized C-130 reconnaissance aircraft. We would fly 14 hour missions every other day. On the day off I could sleep, play poker, hang out at the NCO club, or do something else. MARS was the something else.

I was stationed at Yokota AFB in Japan and was on a temporary duty rotation: 21 days in Vietnam and 14 days back home. Both in Japan and Vietnam the schedule was the same: 14-hour mission every other day.

MARS Activities

- ❖ The MARS station at Danang AFB had 4 operating positions
 - ❖ Two were dedicated to phone patches
 - ❖ One could be either a phone patch or a CW station but limited to 120 watts on CW
 - ❖ The fourth was dedicated to message traffic handling on CW with a KW amplifier

Lots of volunteers to handle phone patches. I could always get on to handle CW message traffic

THE AMERICAN RADIO RELAY LEAGUE
RADIOGRAM
VIA AMATEUR RADIO

NUMBER _____ PRECEDENCE _____ IN _____ STATION OF ORIGIN _____ CHECK _____ PLACE OF ORIGIN _____ TIME FILED _____ DATE _____

TO _____

AMATEUR STATION _____ PHONE _____

NAME _____

STREET ADDRESS _____

CITY, STATE, ZIP _____

TELEPHONE NUMBER _____

RECEIVED FROM _____ DATE _____ TIME _____ SENT TO _____ DATE _____ TIME _____

THIS MESSAGE AREA SHOULD BE FREE OF CHARGE BY A LICENSED AMATEUR RADIO OPERATOR. THE AMERICAN RADIO RELAY LEAGUE, INC. IS THE NATIONAL MEMBERSHIP SOCIETY OF AMATEUR RADIO OPERATORS. THE PURPOSE OF THE LEAGUE IS TO PROMOTE THE INTERESTS OF AMATEUR RADIO OPERATORS AND TO PROVIDE A MEANS FOR THE EXCHANGE OF INFORMATION AND EXPERIENCE AMONG THEM. THE LEAGUE IS NOT A COMMERCIAL ENTITY AND DOES NOT ENGAGE IN ANY BUSINESS OR PROFIT-MAKING ACTIVITY. THE LEAGUE IS NOT A CARRIER OF COMMUNICATIONS AND DOES NOT ASSUME ANY LIABILITY FOR LOSS OR DAMAGE TO ANY MESSAGE OR FOR ANY DELAY IN THE DELIVERY OF A MESSAGE. THE LEAGUE IS NOT A CARRIER OF COMMUNICATIONS AND DOES NOT ASSUME ANY LIABILITY FOR LOSS OR DAMAGE TO ANY MESSAGE OR FOR ANY DELAY IN THE DELIVERY OF A MESSAGE. THE LEAGUE IS NOT A CARRIER OF COMMUNICATIONS AND DOES NOT ASSUME ANY LIABILITY FOR LOSS OR DAMAGE TO ANY MESSAGE OR FOR ANY DELAY IN THE DELIVERY OF A MESSAGE.

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[illegible]

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After Vietnam

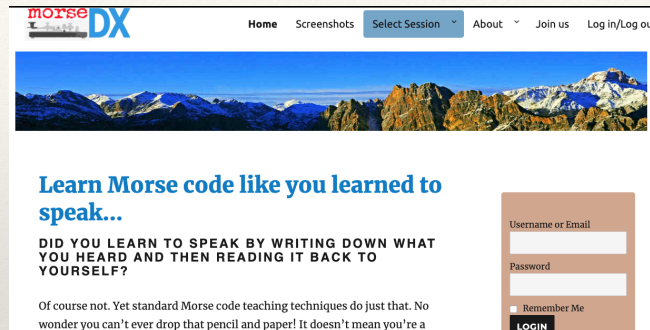
- ❖ Began studies at Purdue University as a math major (because that's where the computers were)
- ❖ Sold my Eico 650 AM/CW transmitter and bought a new Johnson transmitter to go with my Heathkit receiver
- ❖ SSB was all the rage and CW fell by the wayside



45 Years Later

- ❖ Stumbled on a W1AW 5wpm code practice session one morning and was chagrined to realize I couldn't keep up!
- ❖ Decided it was time to get back on the air using Morse Code.
- ❖ Needed to re-learn a lost skill. How to do that?

First Attempt



- ❖ Originally called 'MorseFusion'
- ❖ Listen to short stories read letter at a time with some letters replaced with CW, increasing the replacement over time
- ❖ Did not work well in Chrome nor Safari

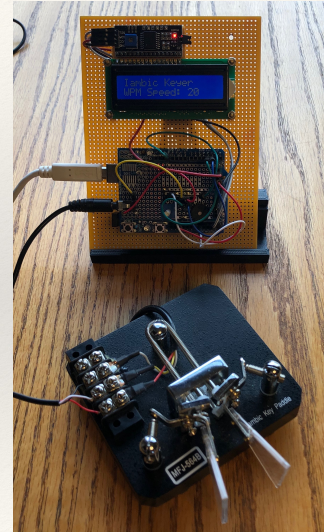
The process, when it worked, was more than frustrating. It is a subscription service and I cancelled my subscription.

Next Attempt

I bought a set of paddles and built a code practice oscillator based on an Arduino micro controller.

I'd listen to the west coast W1AW code practice runs and spend some time trying to send reasonable code.

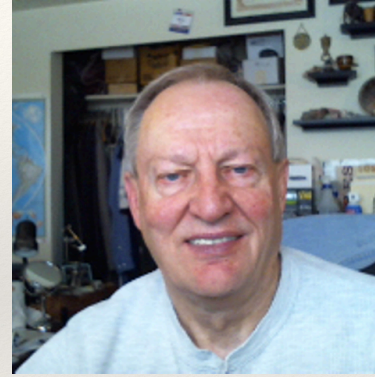
It was definitely a hit and miss, discouraging activity.



Later bought an EZKeyerIII kit from the 4squareQRP group. Nice little keyed and practice oscillator.

And then I Met Bob Carter WR7Q

- ❖ 317 DXCC Entities
- ❖ Fists #12886,
- ❖ CWT #1423,
- ❖ SKCC #4008.
- ❖ Currently an advisor for CW Academy
- ❖ Past president of UDXA



I made a presentation to the Utah Section ARRL Conference at Weber State last August on eliminating your own RFI from your shack. The UTDXA president asked if I'd repeat that at their November club meeting. They would usually get together for dinner before the meeting and at the dinner I sat next to Bob Carter who became "a friend in low places" and recruited me into the next semester at CW Academy.

The CW Academy

- ❖ Hosted by the CW Operators Club (CW Ops)
- ❖ Founded by Jack Ritter W0UCE (SK)
- ❖ Fosters the learning of CW worldwide
- ❖ Best of all, IT'S FREE!

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**Celebrating the unique
art form of Morse Code**

Jack taught Navy folks CW during WWII with an unbelievable success rate, far surpassing what other Navy morse code instructors were achieving.

CW Academy Curriculum

❖ BEGINNER Class

- ❖ Little or no morse code experience
- ❖ Learn character recognition up to 5 wpm
- ❖ Recognize simple words

❖ BASIC Class

- ❖ Can copy 4-5 wpm
- ❖ Practice head copy up to 10 wpm

❖ INTERMEDIATE Class

- ❖ Can copy 8-10 wpm
- ❖ Practice head copy up to 20 wpm

❖ ADVANCED Class

- ❖ Can copy ~20 wpm
- ❖ Practice head copy up to 30 wpm

The Beginner class teaches “instant” character recognition leading to simple word recognition. It is an excellent class for those with no or very limited morse code capability.

The rest of the classes build on the previous class.

CW Academy Schedule

- ❖ Classes presented in 'semesters'
 - ❖ January - February
 - ❖ April - May
 - ❖ September - October
 - ❖ A semester is 8 weeks long with 2 classes per week
- ❖ Prospective students can register anytime and can register for a future session a few semesters away

Current Jan/Feb semester has about 350 students worldwide with 80 advisors teaching the classes

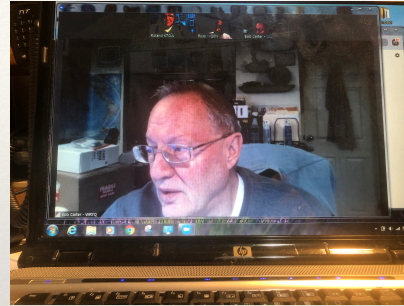
What's Expected of a Student

- ❖ Commitment to the full eight weeks / sixteen sessions
- ❖ Minimum of one hour a day practice six days a week
- ❖ Participation in the class and the class exercises
- ❖ Have a paddle key (no bugs nor straight keys) and an oscillator / keyer
- ❖ Have high-speed internet available
- ❖ Have a Windows computer running Windows 7 or greater

If you can't meet the commitment, don't sign up until you can. It definitely requires at least an hour a day six days a week. I put in normally a couple of hours every day.

What's a Class Like?

- ❖ Four students in my Intermediate class
- ❖ We meet using ZOOM on Monday and Thursday evenings at 7:30pm MST
- ❖ Report on homework since the last class
- ❖ Practice sending (audio over Zoom) code to each other
- ❖ Get instructions and assignments over and above what is in the curriculum



- ❖ Current add'l assignment is to make at least one CW QSO before the next class

Bob is our Advisor and does a good job of pushing us to move up in speed and comprehension. My classmates are very congenial and seem to be having a good experience.

What's the Homework Like?

- ❖ Practice sending daily "scales" (pictured to the right)
 - ❖ "CW is Sending"
- ❖ Head copy one or two short stories and note what was heard
- ❖ Head copy one or two QSO's and note what was heard
- ❖ Two or more sessions of RufZXP
- ❖ Two or more sessions of Morse Runner

- Daily Morse Code "Scales" Sending Warm Up
Bob Carter - WR7Q
- Do the "Warm Up" every day before you send anything
 - Do the "Exercice" as needed...to get better at letters and numbers
 - Do the "Drill" as needed...to improve your sending skills
- Send all five characters or each word without error or start "E" again
- Warm Up
- EEEE TTTT IIIII MMMMM SSSSS OOOO HHHHH OOOOO 55555
- AAAAA NNNNN UUUUU DDDDD VVVVV BBBB8 44444 66666
- ABCFDE GHUK LMNOP QRSU VWXYZ 12345 67890 / , . ? <X> <R>
- THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 7 0 3 6 4 5 1 2 8 9
- Exercise
- AAAAA BBBBB CCCCC DDDDD EEEEE FFFFF GGGGG HHHHH IIIII JJJJJ
- KKKKK LLLLL MMMMM NNNNN OOOOO PPPPP QQQQQ RRRRR
- SSSSS TTTTT UUUUU VVVVV WWWWW XXXXX YYYYY ZZZZZ
- 11111 22222 33333 44444 55555 66666 77777 88888 99999 00000
- Drill
- THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 7 0 3 6 4 5 1 2 8 9
- THE QUICK BROWN FOX JUMPED OVER THE LAZY DOGS BACK 7 0 3 6 4 5 1 2 8 9
- BENS BEST BENT WIRE/S BENS BEST BENT WIRE/S BENS BEST BENT WIRE/S
- ||||| ????? ***** ++++++ =====
- <DN> <SE> <AR> <BT>
- 09 Dec 2018

I do the “scales” a couple of times a day. I’ve recorded myself a couple of times just to see how I’ve improved. The recording from the first week shows an operator with a Very Poor Fist!

Short Stories and QSO's

- ❖ Each story or QSO is available at speeds from 10 wpm to 30 wpm
- ❖ Clicking on the speed link for a story opens an audio player and the selection begins to play
- ❖ The objective is to head copy as much of the story or the QSO as possible (playing it multiple times, if needed). Then make notes about the story or the QSO

Intermediate Short Story Practice Files

Example: SS 201 (10) = 10wpm

Show 10 entries Search:

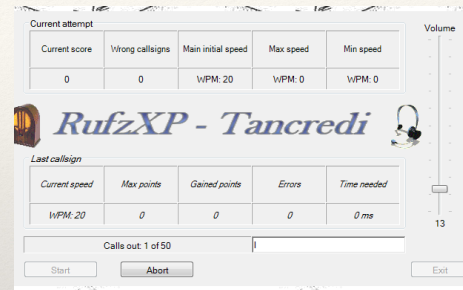
SS 201	10	13	15	18	20	25	30
SS 202	10	13	15	18	20	25	30
SS 203	10	13	15	18	20	25	30
SS 204	10	13	15	18	20	25	30
SS 205	10	13	15	18	20	25	30

- ❖ In the next scheduled class meeting I will be asked questions about the story and the QSO and get to report

Head copy is HARD!

Practice Program: RufzXP

- ❖ Comes out of Germany
- ❖ Sends call signs at or below the requested speed (20wpm in my case)
 - ❖ All are valid call signs from all over the world
 - ❖ Some have two strokes ('/') in them!
- ❖ Program keeps score
 - ❖ The faster I respond, the higher the score for this call sign
 - ❖ The possible score for the call sign goes down over time

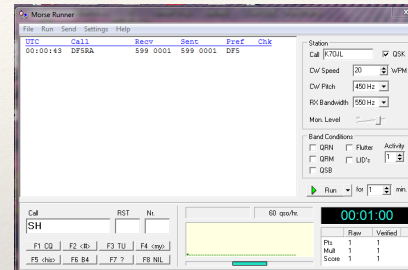


- ❖ Score is posted to a “toplist” site to show how I rank (243rd a couple of days ago)
- ❖ I report the score in the next scheduled class

RufzXP has become my friend. I enjoy the practice sessions.

Practice Program: Morse Runner

- ❖ Program simulates a contest environment and works very much like N1MM+ (the most often used contest logging software)
- ❖ Sequence:
 - ❖ It sends a call sign and I enter it in the call sign field and press enter
 - ❖ Program then sends me RST and a number
 - ❖ I enter the number and press enter
 - ❖ If all is well, I have a completed contact
- ❖ The objective is to get the maximum number of verified contacts in a 15 minute period
- ❖ I report my score at the next scheduled class meeting



Morse Runner was initially quite a challenge. My competitive nature kicked in and we now get along pretty well.

How the Homework is Done

- ❖ There are three days between each class session
 - ❖ Class on Monday evening, practice Tuesday, Wednesday, and Thursday
 - ❖ Class on Thursday evening, practice Friday, Saturday, Monday
 - ❖ Rinse and repeat
- ❖ Go through the “scales” at least once each day
- ❖ Two of the days will be a 21 call sign session of RufzXP and a 15 minute session of Morse Runner run at increasing speed each week
- ❖ One of the days will be a short story (about 8-9 minutes) and a QSO (8-10 minutes) again increasing the speed over the weeks
- ❖ I spend at least an hour each day on the assignments

Falling behind in the homework and then trying to catch up is difficult.

How's It Working for Me?

- ❖ I'm having a lot of fun and am definitely seeing excellent progress. I can consistently copy well at 16-17 wpm and hope to get to 20 wpm in the next couple of weeks
- ❖ While all of the material and programs are freely available on the CW Ops website, I've found that the discipline invoked by having to regularly report my progress in front of the class has made the difference
- ❖ I highly recommend this method of getting CW proficiency

Thanks, Bob WR7Q
and the
CW Academy!

I told my wife that I wanted to be
cremated.

She made an appointment for next
Tuesday....

Questions, Comments?

