





signal to happen. One, it only happened once when the key is lifted. The second way was for sparking to continue as long as the key was held down.

(So the question arises, which way was it really on the night the *Titanic* sank in 1912.)

In the 1950's my father was working as for the Illinois Central Railroad as a civil Engineer. His job was as a "Track Supervisor", responsible for keeping his area's railroad tracks in good shape and level. In those early 1950's I had the occasion to accompany my father to a dispatcher's office on a Saturday when he had some work reason to check in there. In that office there was a wall where large mechanical levers came up from the floor about four or five feet. The handles could be swung and locked forward or backwards by the standing human operator. Each handle electrically operated, in railroad parlance, a "switch", a piece of movable track swung out of the way (opened) to let a train go straight through, or swung into line (closed) to cause the train to curve over to an adjacent line of track. Railroad "switches" are in common use even today. In the early 1950's the operator (dispatcher) would hear Morse Code on a sounder clicking away and he would read the code in his head and actuate the levers to actuate the switches upon command from someone down or up the telegraph line sending him instructions on which way to let trains come through. The important point here: he was copying "clicks" of Morse Code, not continuous buzzing. I had the once in a lifetime opportunity to hear real use of Morse Code as clicks.

To add to that: only a few years later I became a Boy Scout Tenderfoot. In the Boy Scout Manual was a diagram of how to make a Morse Code "clicker" with a wood board, some wire and nails, cut up pieces of "tin can", and a large "Number 6" 1-1/2 volt battery. When I had everything properly constructed per the manual, I could push down on a piece of tin can, closing a circuit, to energize a coil around a nail. The nail, now magnetized, would attract another piece of metal toward the head of the nail and there would be a click. I didn't know Morse Code then, but I sure heard those clicks.

CW for the letter "C" in clicks or short sparks ("snaps") sounds like these time lines.

```
CLICK    CLICK CLICK    CLICK
**       **   **       **
***** ***** **      ***** *****
SNAP     SNAP SNAP     SNAP
**       **   **       **
***** ***** **      ***** *****
```

CW for the letter "C" in buzzes or tones sounds like this familiar line..

```
BUZZ           BUZZ BUZZ           BUZZ
*****          **** *****          ****
****           ***** *****          ***** ****
```

So the latter signals eliminate listening for silence and decoding it, and instead calls for listening to the "Continuous Wave" aka "CW".

This makes more sense to me than saying CW is Continuous Wave modulation when in fact it is not continuous. There is just a little bit of trivial interpretation of the words.



>Fake-It is used. (As we know from SSB voice transmission, the clear range is likely wider, perhaps from 500 Hz to 2500 Hz. But the software was designed to assume 1500 to 1999 Hz as will be discussed below.)

When FT8 has CAT control of the radio's transmit frequency, and you use "Split Operation -> Rig" then the software shifts the transmit VFO to another frequency when necessary to keep the audio sent to the rig between 1500 Hz and 1999 Hz. With "Rig" split, VFO A stays on the main RF band frequency for receive and VFO B is adjusted during transmit as follows.

DESIRED SLOT SUBBAND (Hz) FOR RED BAR	DISPLAYED VFO B ON RIG TX (kHz)	HEARD AUDIO FREQUENCIES (Hz) on MONITOR
200*-499	28072.500	1700-1999
500-999	28073.000	1500-1999
1000-1499	28073.500	1500-1999
1500-1999	28074.000	1500-1999
2000-2499	28074.500	1500-1999
2500-2999	28075.000	1500-1999
3000-3499	28075.500	1500-1999
3500-3999	28076.000	1500-1999
**	**	**

\*Lower limit permitted by software.

\*\*Operation continues past 4000 but I didn't explore there.

Checking the math: 200 Hz will be offset by 1500 Hz in order to fit inside 1500-1999 Hz. The modulated result of 1700 Hz, that is, 1.700 kHz, becomes 28072.500 + 1.700 = 28074.200 when transmitted.

Now this is what happened when I tested the range of audio slot frequencies. The setting for split was "Split Operation -> Rig". By picking a frequency 88 Hz below the subband top edge in each 500 Hz segment, I could test that the MONITOR frequency in my ear was always the same.

COLUMN A Red Bar	COLUMN B VFO B	COLUMN C MONITOR AUDIO HEARD(Hz)	COLUMN D =COLUMN C +COLUMN B RF TX on air (kHz)	COLUMN E "SPLIT"
RED BAR AUDIO (Hz) (Hz)	RIG VFO B (kHz)			
411	28072.500	1911	28074.411	DOWN
911	28073.000	1911	28074.911	DOWN
1411	28073.500	1911	28075.411	DOWN
1911	28074.000	1911	28075.911	NONE
2411	28074.500	1911	28076.411	UP
2911	28075.000	1911	28076.911	UP
3411	28075.500	1911	28077.411	UP
3911	28076.000	1911	28077.911	UP

Alternatively, per the WSJT-X User Guide, and my testing, "Fake-It" will adjust (shift) VFO A instead of VFO B, per the "Rig" table frequencies. VFO B will not be used. (In my rig the VFO B display is actually turned off.)







# THE DX SCENE...

(Courtesy of the NG3K website)

**Call, Start Date,, End Date, DXCC Entity**  
 5UA99WS,2023 May01,2023 Jun15,Niger  
 V7,2023 May06,2023 Jun30,Marshall Is  
 9X2AW,2023 May23,2023 Jun14,Rwanda  
 D4CW,2023 May30,2023 Jun13,Cape Verde Is  
 T31TT,2023 Jun01,2023 Jun12,Central Kiribati  
 VU7W,2023 Jun06,2023 Jun18,Lakshadweep Is  
 VP6A,2023 Jun10,2023 Jun24,Ducie Is  
 CE0Y,2023 Jun12,2023 Jun18,Easter Is  
 8Q7KB,2023 Jun13,2023 Jun21,Maldives  
 WH0RU,2023 Jun21,2023 Jun27,Mariana Is  
 7Q7WW,2023 Jun21,2023 Jul03,Malawi  
 VP2V,2023 Jun23,2023 Jun29,Br Virgin Is  
 OY,2023 Jun25,2023 Jul05,Faroe Is  
 VP9,2023 Jun27,2023 Jul08,Bermuda  
 FP,2023 Jun27,2023 Jul11,St Pierre & Miquelon  
 PJ5,2023 Jul06,2023 Jul18,Saba & St Eustatius  
 8Q7HU,2023 Jul11,2023 Jul18,Maldives  
 TG4,2023 Jul23,2023 Aug04,Guatemala  
 9Q2WX,2023 Aug20,2023 Sep09,DR Congo  
 KH0,2023 Aug31,2023 Sep14,Mariana Is  
 9Q1AA,2023 Sep06,2023 Sep18,DR Congo  
 T8,2023 Sep12,2023 Sep18,Palau  
 OX0J,2023 Sep15,2023 Sep21,Greenland  
 KH2,2023 Sep16,2023 Sep30,Guam  
 5W0LM,2023 Oct01,2023 Oct14,Samoa  
 YJ0TT,2023 Oct01,2023 Oct31,Vanuatu  
 J88PI,2023 Oct02,2023 Oct10,St Vincent  
 V7,2023 Oct03,2023 Oct15,Marshall Is  
 W8S,2023 Oct04,2023 Oct17,Swains Is  
 E6AM,2023 Oct10,2023 Oct23,Niue  
 V63AH,2023 Oct18,2023 Oct30,Micronesia  
 PJ5,2023 Oct25,2023 Oct31,Saba & St Eustatius  
 H40WA,2023 Oct31,2023 Nov14,Temotu  
 E6AJ,2023 Nov03,2023 Nov10,Niue  
 TX7L,2023 Nov04,2023 Nov19,Marquesas  
 H44WA,2023 Nov15,2023 Nov29,Solomon Is  
 VK9XGM,2023 Nov21,2023 Dec05,Christmas Is  
 TO9W,2023 Nov26,2023 Dec08,St Martin  
 TX5S,2024 Jan17,2024 Feb03,Clipperton Is  
 CB0ZA,2024 Feb13,2024 Feb20,Juan Fernandez

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