



UNDER  
THE  
EDITOR'S  
HAT



### CW SIGNALS OF DISTINCTION (EXTINCTION?)

In the years preceding WWII, and for some years after, CW signals, both foreign and domestic, ALL sounded different. It was exceptional to hear a clean signal, free of chirps, clicks, tails, ringing, thumps, drift, and roughness. Today, by contrast, everybody sounds about the same - perfect monotonous CW, especially with the preponderance of electronic keyers. The days of resonant filter notes (beautiful!) are gone. So is the drifting, ringing, and chirps. But why not chirps today? Couldn't we have just a slight chirp? How about 100 cycles worth? Just think of how musical it would be to listen to. A pile-up of CCW (Chirp CW) might sound like a whole bunch of birds chirping away in a tree. It boggles the mind!

It would be pretty easy to do, in these days of solid state technology. A variable capacitance diode coupled to the VFO tank and keyed with the rig would do the trick. Perhaps the RIT diode circuit could be horsed around to do it.

But what's the law about chirps? We know that 10% modulation on CW is the limit, but what about FSK? After all, chirps is FSK just slowed down a bit. And chirping SSTV is legal on the phone bands. And we hear RTTY with FSK on the CW bands

A great big question - would signals with 100 cycle chirp occupy more useable space in the spectrum than no chirps? I would think less - not more. Since some signals would be chirping up, and others down, and since it would be extremely difficult to actually zero-beat a chirping signal anyway, then more readable signals should fit into a pile-up than those with no chirp.

How about tweaking chirps one step further, to the Ultimate CW Sound. Try to visualize a keyed CW signal at a 500 cycle pitch, and add a slight chirp of, say 100 cycle shift. Now add to that a very slight wobble (tremolo) of say 3 to 5 cps, and there you have what should sound something like a keyed musical saw. Beautiful warbling chirp CW. Now imagine if you had 8 such signals of various pitches, as in a pile-up. Wouldn't that be something else!

The next question: Would copying one of those signals be easier than one in a group of steady-toned ones? It certainly would be more pleasant to listen to! These sounds could be readily synthesized and taped, and placed in competition - such as what W6BHY did for the '77 Fresno DX Convention - for the ultimate evaluation. Think of the possibilities!

It would be great for 160 Meter CW where static crashes make slow speed CW mandatory for weak signal DX. Chirps should cut through static better than monotone CW, and the tremolo would add novelty to that all-nite vigil. We could call it WCCW, for Warbling Chirp CW. (160 Meter Nightingales?)

There are various kinds of chirps. Ones with a fast change on make, or - fast change on break - or, slow versions of that, and of course the slow, steady rise, or fall, and mixtures of all of the above. And when you add the different tremolo frequencies, then just about everybody should have a distinct sound of their own in a pile-up. This should make calls easier to pick out for the DX operator, and add an entirely new dimension to CW. How about that??

## SUPER-CW - CONTINUED

The point of all this is the need of personalization on CW. The technological advances in electronic keyers and the perfection of clean monotone CW has created a loss of individuality. While some of this can be recovered by weighted keying (heavy dots) on our electronic keyers, perhaps we need to look further into ways of making our own individual CW unique - and yet not obnoxious. Chirp CW and WCCW are just 2 ways. Ringing (soft break) is another, but has problems at higher speeds and weak signal reception. Are there others?

## K6VY, BOB HARRISS - SILENT KEY

We are saddened by the news that Bob Harriss, K6VY passed away November 23rd. He was a captain in the Merchant Marine, and traveled the globe on a tanker. Bob retired to Danville and set up his modest rig. He was one of the very first to obtain the ALL-CW DXCC, accomplishing this bare-foot, no linear. Bob is probably best remembered among us as the one who made those DX announcements that had a touch of class. With his deep voice and slow Texas drawl he would come on our 2 Meter box with: "Gentlemen - Ah have a DX announcement. ZD8XX is on fourteen oh forty one - woodpecker wireless. K6VY". We miss him.



CLIMBING THE DX LADDER is a contributor's column devoted to helping our fellow Members up that next rung on the Ladder. If you've got a secret way of slithering up the ol' Ladder, send it along. Everybody likes secrets.

## KEEPING TRACK OF COUNTRY CONFORMATIONS

Before it gets too hard to catch up, start a card file using one card per country. Record on the proper card each QSO with that country, noting date, time, RST, and Mode. For repeat QSL's or a different route, the card will tell you log info and date last QSL sent.

After the first QSL arrives, clip the upper right corner off the card. This makes it easy to scan the file every month or so to check on the missing ones, and the date you last sent a QSL. You might clip one corner for phone and the other one for CW, in case you care.

Another trick is to log your least used mode in red pen. In my case I use black ink for CW and red for phone.

I let my file lapse after making the Honor Roll, but it is neat to look back and see that you worked this and that on Clipperton, or YI - stations that maybe are off the air now and very rare.

de K6DC

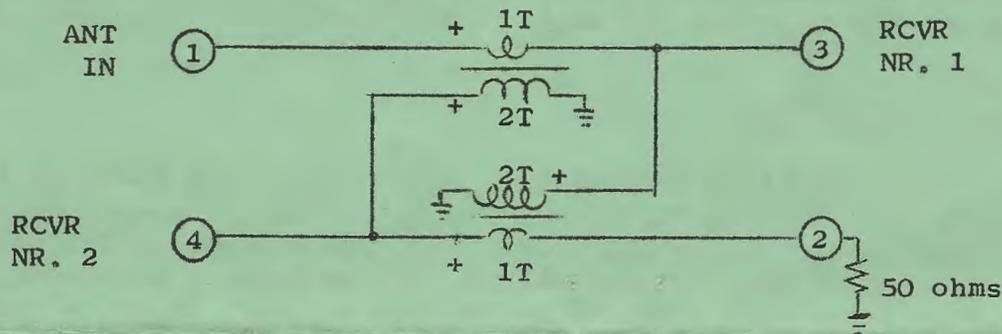
2 MORE ANNOUNCEMENTS: Down Fresno way, Stan, W6XP lost his tower, beams, and all his radio gear in the recent wind storm.

The International DX Convention will be April 15 -16th in Visalia - if it hasn't blown away, too.

## CONNECTING 2 RECEIVERS TO ONE ANTENNA, USING A DIRECTIONAL COUPLER

(Last month's DXer mentioned the need for a circuit to couple 2 receivers to one antenna and yet have isolation enough to prevent dead spots (suck-out points). Maury, W6KJG promptly stepped forward with this neat solution. Ed.)

The network shown may be called an Asymmetrical Hybrid, or Directional Coupler.



In theory, considering ideal lossless transformer devices, with 1:N Turns ratio and matched loads,

the Loss from ① to ③ is  $10 \log(N^2+1) / N^2$  due to power splitting,

the Loss from ① to ④ is  $10 \log(N^2+1)$  and no power is lost in the 50 ohm res.

For  $N=2$  and with 50 ohms at ①, impedance seen at ③ and ④ is,

$$N^2 50 / N^2 + 1 = 40 \text{ ohms} \quad (\text{SWR} = 1.12)$$

With 50 ohms at ①, isolation between ③ and ④ is high, decreasing with poor match at ①.

Measurements made on a sample transformer net, swept 3.5 to 30 MHz show:

Loss to a 50 ohm load at ③ is 1.2 to 1.4 dB, measured SWR less than 1.4

Loss to a 50 ohm load at ④ is 7.3 to 7.5 dB, measured SWR less than 1.3

With 50 ohms at ③ and ④ the SWR at ① is 1.2

Variation of load at one output does not affect the output at the other by more than 0.3 dB, whether open, matched, or shorted. With a poor match at ① there is somewhat more interaction between outputs.

A turns ratio of 1:1 will yield equal outputs and a 3 dB power loss. However, the impedance seen at the outputs is 25 ohms in this case.

Several units have been built using various ferrite cores. The beads intended for use in decoupling or parasitic suppression are good. The little 2 hole core found in TV balun transformers are ideal. Ring cores intended for use in filter inductances are not suitable.

Note that 2 separate cores wound to form 2 identical but separate transformers are required. Small 1/8 inch beads were used in pairs with a drop of glue to form a 2 hole core, then wound with 2 turn primary, 4 turn secondary. A loop through both holes is 1 turn. Beads 1/2 inch long were paired and wound with 1 turn / 2 turns, as was the TV balun cores. Interconnect observing the winding polarities (+) indicated on the schematic. All units gave excellent performance, within a few tenths of a dB of theoretical.

## COMMON COURTESY IN A CW PILE-UP

Once in a while when you call a semi-rare DX station (A) and don't raise him, another semi-rare station (B) calls you instead. Since that frequency "belongs" to (A) and he's got a pile-up on him, what is the best thing to do to work (B) without lousing up (A)? Best answer I've found is to call (B) three times while moving your VFO dial very slowly upward, stopping at least 2 KHz higher than (A). Then sign your call twice, and listen on this new frequency. Another alternative is to simply press the dot lever of your key and slowly drift upward with the VFO, call twice and sign twice. It's not as sure-fire as the first method but is easier to do because you're not sending a call while thinking about slowly drifting upward.

Here's another occurrence that happens in CW DX contests. Your fellow DXer is running Europeans, or JAs, and a rare DX station calls him. Your buddy promptly works him and continues on his way with a QRZ. What can you do? It's his frequency, and he's entitled to it. But you'd sure like to get that rare one. Well, I've had limited success calling the DX blind a couple of KHz higher than where he was heard. If he doesn't come back, then I try again up 5 or 6 KHz, blind. What's happening is that some of the rare ones would rather pick and choose than handle a big pile-up. It's simply not kosher to barge in on your buddy's frequency and disrupt his string. It could even cause your buddy to udder, "Oh, for pity's sake!" a few times.

de N6GG

## MEASURING HEIGHTS OF MOUNTAINS OR HILLS IN DEGREES

Equipment required: A) a camera tripod, B) a 24 inch carpenter level, C) a 15 CM scale, and D) a 3 x 5 card. Proceed to drill and tap a 1/4" - 20 hole at bottom center of level so that it can be mounted on the tripod. Mount 15 CM scale on level with a small piece of angle stock, at a point 22 1/4 inches from sighting end. Fold and staple 3x5 card, (use a 1 inch strip is better) making a slide-sight on the CM scale. Pick out the mountain, level the level on the tripod and face it towards the mountain. Raise the cardboard slide on the scale until edge of mountain is at edge of card. Now read the CM scale; it will be direct in degrees.

Here's another method that works. Equipment required: A) a straight, 3 foot 1 x 3, B) some string, C) a weight, and D) a large protractor. Mount the protractor on the side of the board, in the center and upside down, fasten string with weight to center of protractor so that weight clears ground. Sight along the board at top of mountain, allowing weight to come to rest. Pinch string to protractor and read angle from the 90 degree mark. Take several readings and average results. (Not recommended on windy days!) A protractor can be made from a piece of cardboard, drawing lines extended from a small one. Only the first 15 degrees are needed.

de N6GG

## GOOD GRIEF!

Do you know the difference between a Chemist, a Physicist, and an Engineer? The three were walking along a street in downtown Chicago when the Chemist said, "I see that all the streetcars in Chicago are painted red."

The Physicist corrected him, saying, "That is not precisely correct. All the streetcars that we have seen are painted red."

The Engineer disagreed with them both, stating, "Of the streetcars that we have seen here, we only know that the sides facing us are painted red."

de N6GG

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NCDXC REPEATER: WR6ACZ

Trustee: Charlie Kump, W6ZYC

Input freq = 147.96 MHz

Output freq= 147.36 MHz

Suggested Simplex = 147.54 MHz

NCDXC THURSDAY NITE NET:

On WR6ACZ each Thursday at 8:00 PM

NCDXC DX BULLETIN BROADCASTS:

W6TI, the NCDXC Memorial station, broadcasts DX bulletins each Sunday at 1800Z, or Monday at 0200Z on 14002 KHz.

W6TI Trustee: Bob Vallio, W6RGG

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