



THE NEWSLETTER

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Mercury Amateur Radio Association - MARA - North America - North East

free Christmas wallpaper from houseofthemes.com

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OTHER STUFF

E-mail your comments, ideas, or submissions to marane@mara.net or to velvq@eastlink.ca

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Merry Christmas from all the Elves here at the Newsletter. We hope this season will be a happy one for each one of you.

Grandma Mara's RAMBLINGS

The time had come for Wendy to leave the nest, so to speak. From the tests that I had put her through she could copy a solid twelve words per minute and she could get about 90% of fifteen. Wendy was well aware that she wasn't required to take a code test but she wanted the experience of those who had gone before - her sisters in code, so to speak! She had the basic theory down pretty well from doing the tests on the web and asking me lots of questions. We had gone over basic antenna design and the formulas for making ones like dipoles and loops. She knew the essentials about Ohm's Law and reactances. From her on-line research, she knew about the required regulations, and from listening on HF and VHF and asking lots more questions, she had a good grasp on operating practices. On the whole, she was probably better prepared than I was at her age.

Grandma has a friend, Walter, a VE (volunteer examiner) who said he would be delighted to come over for an hour or two on a Saturday afternoon in exchange for one of my famous Christmas chocolate and cherry layer cakes. Walter's wife died a few years ago, about the same time as Grandpa, and I think he's a little sweet on me!

The appointed day arrived, and both Walter and Wendy were on time; Grandma being the most nervous one. Wendy was absolutely cool and calm; like it was something she did every Saturday afternoon!

I left the den to the two of them and went into the kitchen to turn on the oven. Occasionally, I heard the low rumble of Walter's voice and the higher pitch of Wendy's, sometimes accompanied with giggles.

The time seemed to drag on forever. Finally however, they emerged from the den. At first I couldn't tell from either of their faces whether she had passed or failed, until they both broke out in smiles. Wendy informed me that she had passed both her Tech and her General class exams. Walter had wanted to test her for her Extra but she thought she should wait until she had some on-air experience

... I couldn't tell from either of their faces whether she had passed or failed...

before attempting that level.

Time to celebrate! Cut into a second chocolate cherry layer cake (Walter was insistent on getting a whole one for his fee!), and pass the pieces around the table. Wendy trying to talk and eat at the same time; Walter and I both laughing at her excitement, and sharing in her accomplishment.

Wendy phoned me later that evening to tell me her parents had surprised her with the news that, since she had passed her tests with flying colors, she could have her big Christmas present early. Seems they had faith that she would make it, so they had bought her a used [Ten-Tec Jupiter](#) at a real good price from a local ham, just on spec!

I hope she likes that rig as much as I did!

*A merry Christmas from Grandma and Wendy.
Walter says hello too!*

CULTURED CORNER by ANØNMS

IT'S ALL YOUR FAULT!

*It's all your fault Santa
That I have the same old gear.
It's not like I don't ask you
Each and every year.*

*Something new and shiny
With an LCD display.
Something with lots of switches
So that I can play.*

*Think of all those menus
That I'd really have to learn.
Sure would help improve my mind.
I can only yearn.*

*Something with a tuner
So I don't have to adjust
When I change the frequency.
It's almost a must.*

*I'm a good boy Santa.
 Don't run much more than allowed.
 Don't cause much interference.
 Just like all the crowd!*

*It's all your fault Santa
 If I don't get a new rig.
 My wife says, "keep on asking!".
 Guess YOU don't give a fig!*

MNE

BE SQUARE

CPO's, both commercially produced and home brewed, using the 555 integrated circuit became popular soon after the part became available to hams, largely because of the simplicity of design and the low parts count. Most versions sound like... well... like not great! Square waves sound harsh to the ear, because of the harmonics (multiples of the



MFJ 557 CPO and key combination built around the 555 IC.

TECH STUFF

By VE1VQ

CPO's - CODE PRACTICE OSCILLATORS PART 2

Last month, we covered a little history about some of the stuff used over the years for code practice in preparation for those tests, in the days when we had to do such things.

Strange when you look back on it, how much uproar there was over dropping the requirement of the code. Almost vicious at times! Now you have hams on the air who have never touched a key, going straight to a microphone or keyboard, or up to the much higher frequency experimentation. Are we worse or better off? Someone with more letters after their name can launch a study into that.

PUT SOME BUZZ IN YOUR LIFE

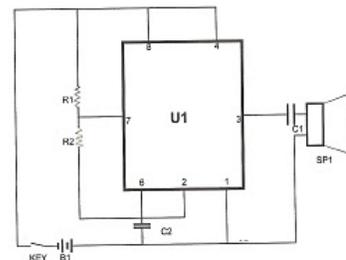
A lot of hams started with a buzzer and a key, such as the one shown below from an EBAY auction. Not a complicated device with only three parts - a buzzer, a battery or other power source, and a key.

Early mechanical buzzers were quite low in frequency, while the piezo based ones used now are quite high. If that's what meets your needs, go for it.



For some reason designers of the early commercial ones seemed to like having a bulb as well as a speaker. Some had selection switches to choose the output - audible or bulb or both. Not quite sure why unless your intention was to transmit across a dark room by light wave!

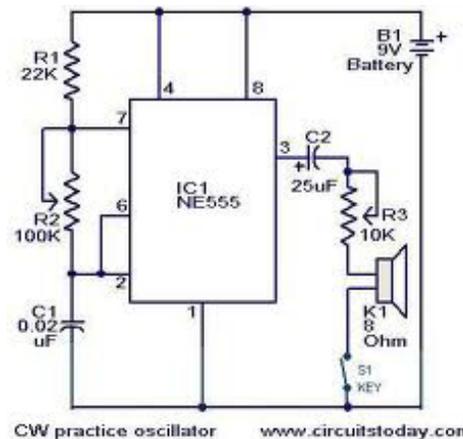
- B1 9 Volt
- C1 25 MFD
- C2 .1 MFD
- R1 10 K Ohm
- R2 1 K Ohm
- SP1 8 Ohm 2"
- U1 555 Timer



Circuit diagram of a CPO with positive line keying. For more information check out <http://hamslife.com/?p=18>

original frequency) and after a while of listening to them, especially with headphones or earbuds, it begins to wear on you. However, if you've got the parts on hand and you want quick results...

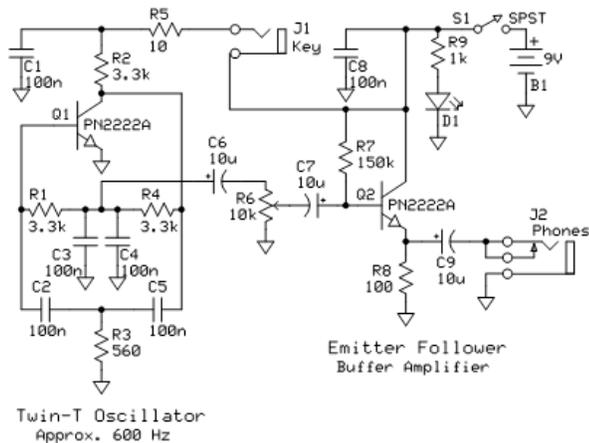
Most of the circuits you find in literature or on line key the positive pins. The oscillator goes from fully off to fully on, and so takes an amount of time to go from nothing (zero hertz or DC) to whatever you and your ears fancy (say 650 hertz). Chirp, from the oscillator settling into the 'on' frequency! The answer to that is to run the oscillator all of the time, and key the audio output line to the speaker. A simple solution!



Another CPO with variable frequency and volume. Note the speaker line keying. From <http://www.circuitstoday.com/cw-practice-oscillator>

SMOOTH MOVES...

For a really quality sound, absolutely nothing beats a sine wave for an output. No harmonics and none of the headache inducing sounds such as you get from a square wave generator. The good thing is, it doesn't take a whole

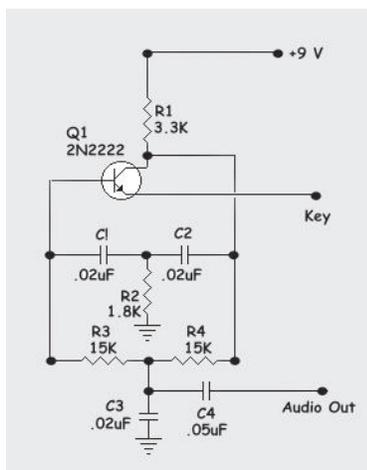


A Twin-T sine wave CPO design by NT7S. The PN2222A transistors are plastic versions of the 2N2222. Any general purpose NPN transistor may be substituted. See <http://www.nt7s.com/blog/tag/homebrew/> for more information. If you have an audio signal tracer you can delete the buffer amplifier.

lot of parts. Just one transistor, a few capacitors and a few resistors put you on the path to sine wave serendipity.

Both of these circuits key the oscillator, so if you find that any frequency shift that may be present bothers you, power the circuit all of the time, and key the 'audio out' line. Should this method make for worse chirp, the input impedance of the following amplifier is most likely too low, and loads the oscillator too much. That will require a change in output amp design to increase the input impedance.

If the output frequency isn't to your liking, change the value of the capacitors (C1/C2) or the resistors (R3/R4). Increasing the value of either lowers the



Your basic phase shift Twin-T oscillator circuit from http://www.gregsbasicelectronics.com/circuits/audio_oscillator.htm

frequency. Whichever pair you change, remember to keep the values identical.

Whatever you decide to go with - be it buzzer, square or sine wave output, whether you build or buy - get off your butt and get in some code practice. It's a whole 'nother world out there!

MNE

GOT SOMETHING YOU WANT TO SHARE?

Have something you want to share? A construction project, pictures of your station... home or mobile, a station installation at the chapel, or maybe an antenna in your back yard. Whatever it is, share it with us. Send it to VE1VQ@eastlink.ca

QUOTE(S) OF THE MONTH

"There's nothing sadder in this world than to awake Christmas morning and not be a child."

Erma Bombeck

"Nothing's as mean as giving a little child something useful for Christmas."

Kjin Hubbard

DON'T FORGET STRAIGHT KEY NIGHT

Straight Key Night is held every January 1 from 0000 UTC through 2359 UTC. This 24-hour event is not a contest; rather it is a day dedicated to celebrating our CW heritage. Participants are encouraged to get on the air and simply make enjoyable, conversational CW QSOs. The use of straight keys or bugs to send CW is preferred. There are no points scored and all who participate are winners.

For details see the ARRL website at <http://www.arrl.org/straight-key-night>

PRESIDENT'S MESSAGE

DI-DAH-DI-DAH!

May I start with a Merry Christmas to you all. It has been a banner year for MARA NE with the heartening increase in participation in the Saturday morning nets. The last Saturday in November brought 17 operators checking in to the 7:30 net. For any who may not have heard, we are trying a less formal gathering on 40 meters at 7:00 ET since the 80 meter band has been sometimes less useful. The 40 meter gathering is on 7.283 MHz.

Here in the Philadelphia region, we have just completed our November regional emergency communications drill comprising the Cherry Hill, Philadelphia, Reading, Valley Forge, and Wilmington Stakes. This involves Church leadership and an attempt to staff all facilities in the Philadelphia Stake. While we now have 10 units in the stake, we only have 6 buildings, though we have one in construction planning and of course one announced at General Conference. This was a planned effort with some scripted messaging and requiring responses from leadership.

I'll be turning things upside down after the first of the year, as our move across the Delaware River to New Jersey last May will necessitate a change in Ward, Stake, and Mission territory; though I sure enjoy having the land and trees for the HF antenna. At this year's annual meeting it was proposed we make our 2011 annual meeting at the Dayton Hamvention in Ohio, May 20th or 21st. I've made inquiries on the Saturday morning net as to expected participation, with light response. Since we are scattered quite far afield among the eastern states, I would like the membership's continued input on the annual meeting plan. If I could hear from each of you and your feelings on the subject. Please include what you consider a workable travel distance for you should we decide to stay more "local". I look forward the hearing you all on the Saturday morning net, and again Merry Christmas.

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73

Bruce, N3IA

HOW'S YOUR INNER CHRISTMAS CHILD?

How does your 'inner child' react on Christmas morning when everything you get for presents are 'useful' things? Personally, I've always been just a little bit disappointed when there wasn't a toy of some kind or a book on some topic I'm interested in, wrapped up with my name on the tag and left under the tree. I suppose I've reached the age and stage in my life where I don't 'need' much of anything, and where the toys that go with my hobbies are too expensive for my children to buy... although I'm still not convinced of that fact (the age and stage part that is!).

For those of you like me, with hobbies that aren't cheap, it can be hard to buy for. How many SWR meters do you really need? I suppose you can always 're-gift' them to your ham buddies!

Gift cards are fine with me. There is the anticipation that they bring. I can spend (and have spent) an hour or more in a home improvement or book store simply wandering up and down the isles looking at everything on the shelves without the feeling of guilt that I'm going to spend the value of the card on something I don't 'need' but simply 'want' or 'might use someday'.

Those gift cards are loved by the retail trade. For one thing, they draw consumers into their outlets. For another, they encourage us to spend more than the card value. Who wants a card cluttering their wallet or purse with \$1.79 left on it. Too much to throw it away. Too small to be useful, especially if you don't normally patronize the store. So you'll likely spend a bit more just to clear off the card. Retailers love them for another reason. It's estimated that about 6% of gift cards end up not being used. For retailers, nothing could be better. Imagine making \$50 on nothing, for only the pennies it costs for the plastic. Some places set a time limit on those cards, so if you snooze, you lose!

Chapters-Indigo, probably the largest retail book supplier in Canada, and the one that I patronize, has outlets in all of the major (and most of the minor) cities, also has an on-line presence. Books are cheaper from here than in the physical store and, over a certain amount,

For those of you like me, with hobbies that aren't cheap, it can be hard to buy for.

shipping is included. I recently noticed they've added an extra feature... you can convert a physical gift card to the web site and use it toward any on-line purchases. Not quite the same as wandering the isles and physically handling the actual books, but almost!

Now mind you, a gift card is not quite the same as opening a box on Christmas morning and seeing a new piece of amateur gear. It is, however, a lot better than getting a dozen dress socks in assorted colors (unless they're from your three year old grandchild who is eagerly waiting for you to open them!).

If any of my family happen to read this, a kilowatt tuner would be a nice surprise to find under the tree! If not, a gift card or two wouldn't disappoint me either. But please... no more socks!



Have a merry Christmas and we'll see you next month,

VE1VQ

WHAT RIG DO YOU USE FOR YOUR STATION?

Inquiring minds would like to know!
Would you e-mail me with the model and manufacturer and what you like and/or dislike about it, for a future newsletter? Send your info to ve1vq@eastlink.ca

WHAT ANTENNA DO YOU USE FOR YOUR STATION?

Those same inquiring minds would like to know!
Would you e-mail me with the type of antenna and whether it is commercial or home brew. Send your info to ve1vq@eastlink.ca for a future newsletter