May 2015
Volume 69, Issue 5

The Cat's Whisker!

The Wanganui Amateur Radio Society Inc., Branch 48 NZART

www.zl2ja.org.nz

Club Officials 2014-2015

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Newsletter Editor:	Colin Wilson	ZL2WM
Awards Custodian:	Ivan Horn	ZL2ATU
Webmaster:	Colin Wilson	ZL2WM

The Next General Monthly Meeting will be held:

Monday 8th June, 2015

at the Hunters and Stalkers Hall, Peat St.

At 7:30pm

Business: General.

All Very Welcome!

Don't Forget to Bring Along Your Outgoing QSL Cards to the Meeting Too!

"Just the Cat's Whiskers"

Buy Sale Swap

Wanted;
I'm looking for an Antenna Rotator
John ZL2JEL
zl2jel@xtra.co.nz
Hm: +64 6 343-6769
Mb: +64 21 160-2482

From the Newsletter Editor

Hello Again,

I see quite a few photos of our Junk Sale have ended up in the May/June Break-In, including some colour ones too. (I wonder who took those?)

Could have done with that advertising before the sale!

You're world famous now Ivan!

Colin ZL2WM

A guy walks into my bar and asks the bartender for a Bacardi and Coke.

He said, "We only have Pepsi, is that OK?"

He said, "Sure."

He then handed him a Pepsi and Coke!

Junk Sale 2015 Report from Graham ZL2AHR

Well the 2015 Junk sale has been and gone and I would like to start this report by saying sincere thanks to all those folk that pitched in to help set up the hall and run the sale and stay behind to help clear up.

Without your input and assistance the sale cannot happen!

Sincere thanks once again to Ed and Hinemoa Boyd for their help with cataloging printing and data inputting, and being cashiers and also to Lyn who came in on the Saturday to assist Hinemoa with processing the sales invoices.

The ladies in Cafe once again made sure everyone was fed with a good variety of food and drinks and many thanks to those ladies from out of town that stepped in to help Val with this task.

BREAK DOWN OF VENDORS AND BUYERS.

We had only 22 vendors putting items into the sale which resulted in approx 550 items being offered for sale.

We had 50 buyers register for the sale way down on what we were expecting given the amount of feed back received prior to the sale .....a lot of faces missing !!!!

CASH BREAKDOWN OF SALE RETURNS.

Total sales including sales from the cafe totaled	= $4326.40
Total paid out to vendors on the day	= $3091.45
Leaving Balance of	= $1234.95

EXPENSES

Cost of eftpos Machine	= $ 105.00
Cost of food for the Cafe	= $ 394.13
Advertising in Breakin	= $ 165.60
Advertising in Chronicle	= $ 45.00
Advertising in River city Press	= $ 40.00
Cost to hire the Hall	= $ 100.00
Cost of Sound system	= $ 100.00
Cost of printing Labels/Catalogs	= $ 99.57
Cost of Flyers and postage to Branches	= $ 35.00
Total Cost of Expenses	= $1084.30

THE BOTTOM LINE.

Net Profit from the sale	= $1234.95
Less expenses	= $1084.30
Total of sale profit	= $ 150.65

SUMMARY.

Over all the sale went very well,except for what I would call a disappointing result.

Already we have had very positive feed back, HOWEVER I think its time to consider our options, I can not offer any reason for the low turn out of buyers, as we covered all bases with advertising and word of mouth which all proved to be encouraging at the time, but certainly did not result in bums on seats on the day!!!

Could we blame the weather? (don't think so it was a very good day) What about the cost of Travel to get there? (don't think so fuel has never been cheaper)

Can we blame TradeMe? (well, yes I think some blame is attributed there) Can we say it was just too much trouble to get motivated to attend (yes I think there is some degree of substance in that).

If we had had another 50 Plus folk in the hall on the day the result would have been very different!

It is very difficult to see just where we could/can trim our costs down, as already we depend on volunteers and borrowing of items to run the sale (ie the Kitchen Equipment)

I felt that the cost of advertising in Breakin was very expensive compared to the cost of the local paper which reached a hellva lot more people than Break-In does.

Our printing costs all done at cost price for us, other costs are pretty much fixed and beyond our control.

On somewhat of a brighter note, the social side of the sale was and always has been a very positive result and is very much a draw card no doubt about that fact. Is it time to look at the reason we run the sale? Do we need to make a huge profit each time? Does Branch 48 need the cash that bad?

Would we be satisfied to just cover costs and all have a fun day and renew aquaintances etc? Food for thought perhaps.

I feel that we have reached what could be best described as the cross roads and some decisions need to be made as to where to from here, 2016??? to far in the future to know at this stage, but I welcome constructive ideas.

At this point it is intended to split the profit equally between Branch 48 and the Vintage car club (Eds choice)

Many thanks again to all over and out Graham and Val, de ZL2AHR &ZL2FO

Wanganui Junk Sale Photos


Graham's
AUCTION SERVICE
LICENSED AUCTIONEER
GRAHAM HAWTREE
Ph. 344 7501
or
0274 537 744

ACCURATE TRANSMITTING ANTENNA LOCATIONS USING GLOBAL POSITIONING SYSTEM (GPS) SATELLITES

INTRODUCTION

Accurate transmitting antenna locations are required when applying for RSM Radio Licences.

The aim should be to achieve a location accuracy of 5 metres, or better. Several people have consistently achieved accuracies of 1 to 2 metres, by using the procedure described below.

Civilian GPS receivers are small and cheap, and can be found embedded in a wide range of electronic devices. Unfortunately, their apparent ease of use, and claimed accuracy, can lead the unwary user into a false sense of security, and location errors of more than 10 metres.

Do not use Google Earth. Location errors of more than 100 metres have been noted, because of the way the mosaic of satellite photos is stitched together.

MEASUREMENT PROCEDURE

GPS RECEIVER COLD START

The location is likely to be inaccurate if the receiver was last turned on for less than 13 minutes and/or has been turned off for more than two hours.

Turn on the receiver. Place it as near as possible to the transmit antenna pole, with a clear view of as much as possible of the sky, and wait 13 minutes, to allow it to update its satellite Almanac.

After 13 minutes, check that the receiver's location display is stable. The right-hand-most digit of the Easting and Northing may occasionally change by one number. Larger changes indicate that the receiver is still refining its location calculations.

Record the location exactly as displayed by the GPS receiver.

VERIFICATION

Many hill-top sites are near a trig station and/or a brass plug embedded in a substantial lump of concrete. Most of these have been surveyed to centimetre accuracy by LINZ. They are stamped with a four-character (letters and numbers) reference.

Without turning off the GPS receiver, move from the location of the transmit antenna to the location of the brass plug. Wait for the GPS receiver reading to stabilise, while the receiver calculates the new location. Record the GPS display and the four-character reference.

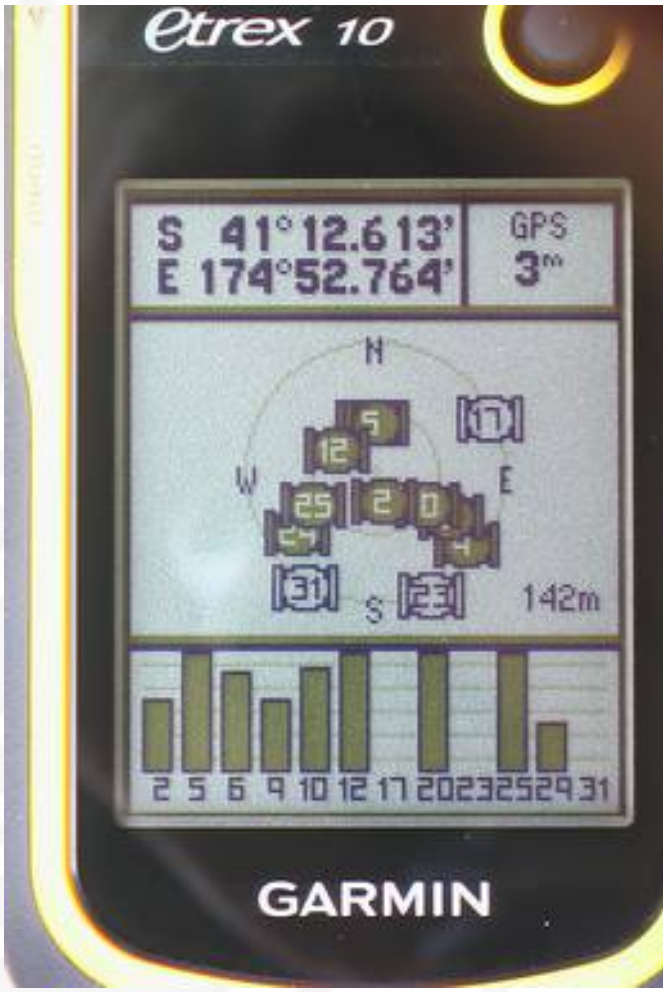
MORE INFORMATION

The photograph shows the display of a typical GPS receiver.

The calculated Latitude, Longitude, and estimated accuracy are shown at the top of the display.

The satellite reference number, and its location in the sky, is shown in the middle of the display. The centre of the display corresponds to directly overhead. The small circle corresponds to 45 degrees elevation and the outer circle corresponds to the horizon.

The signal strength, of each of the 12 satellites, is shown at the bottom of the display. In this example, satellites 17, 23 and 31, at or near the horizon, are too weak for demodulation lock.



SOURCES OF ERRORS

THE HUMAN FACTOR

Humans are notoriously impatient and expect instant results.

GPS receivers typically give a rough estimate of the location within seconds of being turned on. To do this, the receiver uses the satellite orbit details (Ephemeris and Almanac) that were received from the satellites, and stored in its memory, when it was last turned on.

The location is likely to be less accurate if the receiver was last turned on for less than 13 minutes and/or has been turned off for more than two hours. The Emphemeris of the GPS satellites is typically updated every two hours; the Almanac is continuously updated, typically taking 13 minutes to complete one update cycle.

During the updating process the right-hand-most digits of the Latitude and Longitude display will often change by a significant amount, indicating that some of the obsolete, previously stored, Emphemeris and/or Almanac values have been replaced by updated values. Wait for at least 13 minutes before recording the location.

There may be further changes in the displayed location, after the 13 minutes are up, as the receiver tries to further refine the location calculations. Wait until the location display becomes stable.

PROPAGATION ERRORS

The signals from GPS satellites are refracted and delayed by different amounts, depending on the slant thickness, and condition, of the ionosphere through which they pass, and other factors. The delay is roughly proportional to frequency.

GPS satellites transmit on two main frequencies: 1227.60 MHz (L2) and 1575.42 MHz (L1). These are derived from the same on-board reference oscillator in the precise ratio of 60 to 77, allowing the delay difference to be estimated and a correction applied.

Each transmitter is modulated by several pseudo-random sequences. In the case of the 1575.42 MHz transmission, one of these sequences L1C (C for civilian) is published for each satellite. All of the other sequences, on this frequency and on 1227.60 MHz, are encrypted for military-only use.

Recently launched GPS satellites also modulate the 1227.60 MHz transmission with a civilian sequence (L2C), for improved location accuracy. Few current civilian GPS receiver models have L2C demodulation capability.

Some GPS receivers display a claimed accuracy. This is often too optimistic, as greater changes in the displayed location over, say, an hour, reveal. However, averaging the displayed location, over a longer period, can improve the location accuracy.

GPS RECEIVER DISPLAY RESOLUTION

GPS receivers have a multiplicity of display formats, so the location needs to be recorded exactly as displayed. The following three display modes are for the same location in central New Zealand:

Decimal Degrees

East 174.8723° South 41.1795°
A one digit change in the right-hand-most digit corresponds to:
East 8 metres South 11 metres
Obviously, an extra decimal digit is required.

Degrees and Decimal Minutes

East 174°52.34' South 41°10.77'

A one digit change in the right-hand-most digit corresponds to:
East 14 metres South 19 metres
An extra decimal minute digit is required.

Degrees, Minutes and Seconds

East 174°52'20” South 41°10'46”
A one digit change in the right-hand-most digit corresponds to:
East 23 metres South 31 metres
At least one decimal second digit is required.

EXISTING LOCATIONS RECORDED IN SMART

Don't trust an existing Location Reference in SMART unless it has “Yes” next to “Verified”.

To check this, the procedure is:

On the SMART part of the RSM website, select Search Licences, and enter the Frequency and/or Location of a particular licence in the applicable boxes. Click on Search.

On the Licence Summary screen, click on the Licence ID hyperlink to the left of the desired licence.

On the Licence screen, click on the hyperlink under the Location Name.

On the next screen, click on the hyperlink to the right of the Location Name.

The word Yes (or No) will be found to the right of the word Verified.

There are many reasons why existing Location References in SMART are not “Verified”:

Data entry errors during digitising the historical paper licensing records.

Conversion of historical “inch-to-the-mile” location to metric NZMS260 location.

Locations from NZMS260 paper maps recorded with 100 metre resolution.

Site not yet re-surveyed.

NZMS260 locations recorded with 100 metre resolution can be detected by taking the 14-character TOPO50 location reference, recorded on an existing licence (such as BQ32 570.40 396.30), and using the SMART Grid Reference Converter to reveal the NZMS260 version. Double zero decimal values in the NZMS260 Location Reference confirms that the location was recorded on the licence application (pre- or post-SMART) with 100 metre resolution.

GEODETIC DATUM AND TECTONIC PLATE MOVEMENTS

The RSM Radio Licence Register displays station locations in TOPO50 format, which is based on the NZTM2000 Geoid.

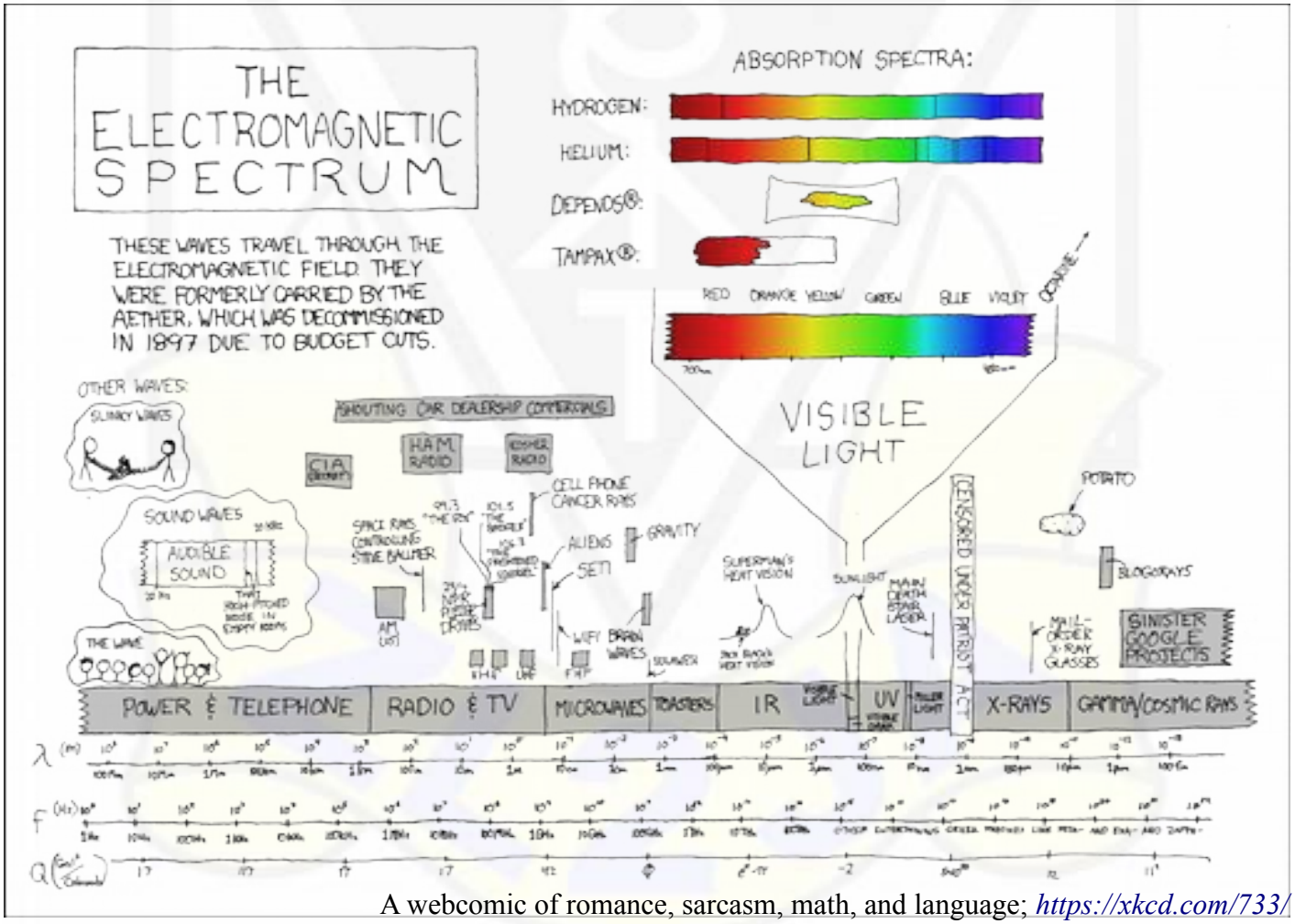
Most GPS receivers are sold factory set to WGS84. WGS84 and NZTM2000 were identical on the 1st of January 2000. However, with tectonic plate movements, New Zealand (and NZTM2000) is slowly drifting away from WGS84.

The parts of New Zealand on the Australian Plate are moving North and the parts on the Pacific Plate are moving North-West, by about 5 cm per year, relative to WGS84. As of 2015 this corresponds to about 75 cm of accumulated difference between WGS84 and NZTM2000. Movements of the North Island, East Coast and Volcanic Plateau are more complex.

REFERENCE

www.linz.govt.nz

Wellington VHF Group “Q-Bit” May 2015, Thanks to Doug Ingham ZL2TAR.



A webcomic of romance, sarcasm, math, and language; *https://xkcd.com/733/*

Skip Signal Fade *[from HamRadioSchool.com]*

T3A08 from the Technician License Course Section 5.0, Propagation:

Which of the following is a likely cause of irregular fading of signals received by ionospheric reflection?

A. Frequency shift due to Faraday rotation

B. Interference from thunderstorms

C. Random combining of signals arriving via different paths

D. Intermodulation distortion

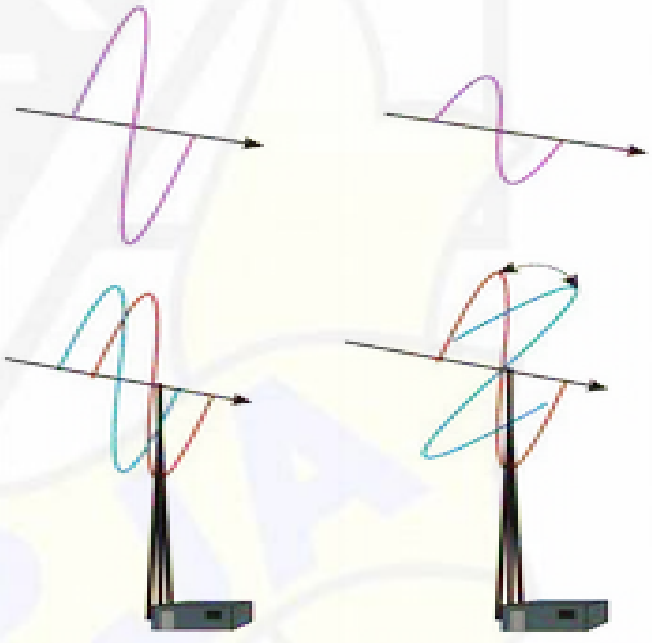
With long distance propagation using ionospheric skip received signals will often fade in and out, being stronger and weaker over the course of a few seconds. What's the cause of this irregular fading?

A signal arriving at your station antenna may take more than one path to get from its originating station. Signals taking off at slightly different angles from the transmitting station may encounter different densities of ions in the ionosphere and be bent back to the earth along slightly different paths, but each still arriving at the receiving antenna. Signals may also be reflected from the earth's irregular surface at different angles, both vertically and laterally, resulting again in significant path differences taken between transmitting station and receiving station. But, how does that cause signal fading?

Signal Combination #1 *Signal Combination #2*

1, *Let's consider the simplest case of two signal waveforms arriving at a receiving antenna. In the figures 1-4 one signal is indicated in red and the other blue.In the first case, the two signals took slightly different skip paths to the receiving antenna, but they arrive very nearly in phase with one another. That is, thewaveforms' electric fields are aligned, or in step, with the positive voltage halves of the cycles and the negative voltage halves of the cycles reinforcing one another. The electric field voltages are summed by the receiving antenna, so the well-aligned waves produce a combined signal on the antenna that is about twice as strong as either signal alone. This is depicted with the upper purple waveform in which the signal amplitude is shown to be about twice that of the individual waves' amplitudes. This high amplitude produces a relatively strong signal at the receiving antenna.*

2. *In the second graphic the waves have again taken different paths to the antenna, but the path lengths worked out so that the two waveforms are almost exactly out of phase with one another. When the red signal has a peak positive voltage the blue signal has a peak negative voltage. When these two signals are summed at the antenna the positive voltages and negative voltages sum to zero volts, canceling one another out! (A very low amplitude signal is depicted as the summation in purple, assuming the alignment of the two is not quite exactly opposed.)*



Signal Combination #3 *Signal Combination #4*

3. *Of course, other relative relationships of the received signals are possible between the two extremes of perfect alignment and perfect misalignment. The third scenario depicts the two waves somewhat out of phase, but not perfectly opposed. Again, the electric field voltages depicted as amplitude will sum for each position on the waveforms, in this case producing an intermediate amplitude summation signal. You can imagine that there are an infinite number of combination possibilities resulting in variable signal strengths when summed as the receiving antenna's induced voltages.*

4. *Another factor that comes into play is signal polarization, as illustrated in the fourth graphic. Not only will signals travel by different path lengths and have variable phase relationships, but the orientation of the electric field oscillations gets scrambled during skip propagation, too. Signals arriving at the receiving antenna with a polarization identical to the antenna's polarization will produce relatively strong signals (red waveform) as compared to signals arriving with unaligned polarization (blue waveform).*

So, consider that a receiving antenna may combine two, three, dozens, or thousands of signals arriving via different path lengths, and the phase relationships of all those different waves will be combined into some signal strength at the antenna. Consider further that the polarization of those signals will all be somewhat different, contributing yet more variability into the antenna's summation function. And finally, consider that as ionospheric conditions of density and ion cloud location shift over time, and even as items on the earth from which signals may reflect move along the surface (ground vehicles, for instance), both the arrival phase relationships and the polarizations will change and shift from moment to moment! The result at the receiving antenna is a moment-to-moment variation in the summation signal strength that produces an irregular fading of signals.

The answer to Technician Class question T3A08, **"Which of the following is a likely cause of irregular fading of signals received by ionospheric reflection?" is "C. Random combining of signals arriving via different paths."**

Stu Turner

Used with thanks. Source;
http://www.hamradioschool.com/t3a08-skip-signal-fade/

Antenna made from liquid metal

Southgate Amateur Radio News

The Register reports a liquid metal antenna can tune over a range of at least two times greater than systems using electronic switches

Researchers at the North Carolina State University (NCSU) have demonstrated a reconfigurable liquid-metal prototype in the Journal of Applied Physics.

The paper, titled A reconfigurable liquid metal antenna driven by electrochemically controlled capillarity describes "a new electrochemical method for reversible, pump-free control of liquid eutectic gallium and indium (EGaIn) in a capillary."

Antennas are interesting as the shape and length of the conducting paths which form them determine their operating frequencies and radiation patterns.

"Using a liquid metal – such as eutectic gallium and indium – that can change its shape allows us to modify antenna properties more dramatically than is possible with a fixed conductor," explained Jacob Adams, co-author of the paper and an assistant professor in the Department of Electrical and Computer Engineering at NCSU, in a press release by the American Institute of Physics.

Read the full story at http://www.theregister.co.uk/2015/05/20/boffins_create_reconfigurable_liquid_metal_antenna/

Source; http://www.southgatearc.org/news/2015/may/antenna_made_from_liquid_metal.htm

Switching Power Supplies a More Common Noise Source than Power Lines, ARRL Lab Manager Says

13/04/2015

ARRL Laboratory Manager and EMI Expert Ed Hare, W1RFI, told the HamRadioNow webcast recently that switching-mode power supplies are a more common noise source for radio amateurs than electrical power lines. HamRadioNow host Gary Pearce, KN4AQ, interviewed Hare on April 4 at the Raleigh, North Carolina, RARSfest, where Hare also presented a forum, "Tall Tales from the ARRL Lab." Hare told Pearce that switching-mode power supplies are in — or provide power for — many home electronics these days.

"The old days of those iron transformers are gone," Hare said. "Every single one of these is a switcher. We're also seeing noise from pulse-width control motors." Hare said the big culprits are "little wall warts," not switching supplies designed to power Amateur Radio gear. "Every TV you own has a built-in switcher, almost every device has a wall-wart, and a lot of these are imported, not necessarily meeting the FCC rules, so we're seeing more reports involving those," he said.

Hare also told HamRadioNow that a few LED-type lightbulbs that are becoming more common also can be noise-generators, as are "grow lights" used for cultivating plants indoors. He said that the ARRL Lab can work with manufacturers to correct these problems, but the Lab needs model numbers and "specific information about the problems amateurs are having, so that we can put some of our resources toward helping."

Many interference issues can be resolved without FCC intervention, Hare said, noting that Commission enforcement is the last step, if other efforts fail. He told Pearce that he does not anticipate any immediate negative effects from the recently announced cutbacks in the number of FCC Enforcement Bureau field offices and personnel.

"[T]here's a short list of who's going to get closed down, but we're going to continue to work with the FCC as we have," Hare said. "We've been told by Laura Smith [of the FCC Enforcement Bureau] that she's going to continue to be engaged in this. So we're going to continue to send problems [in] that direction."

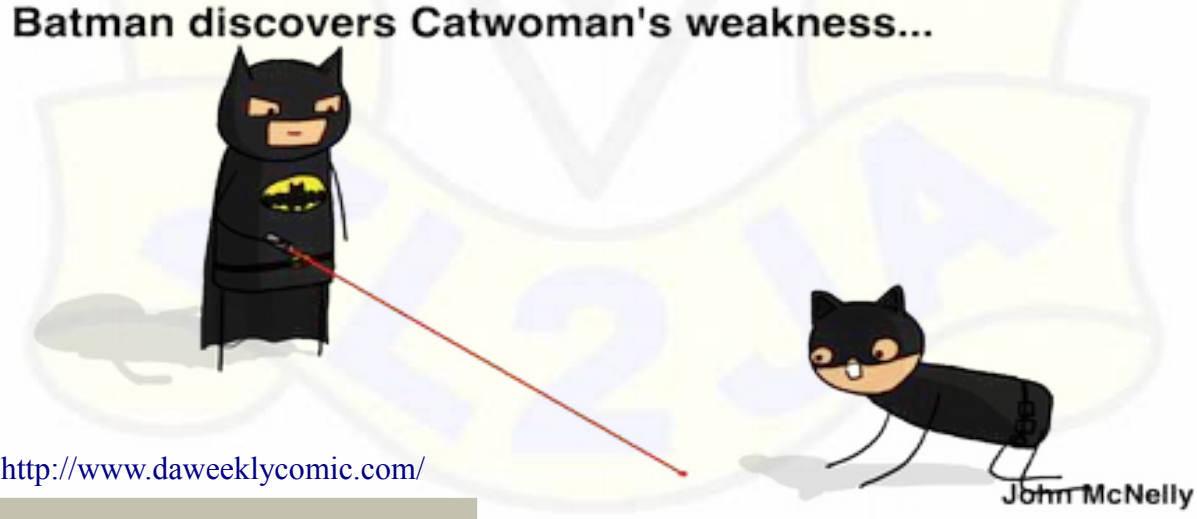
Hare said the only area where FCC cutbacks could affect enforcement would be FCC field investigations, but "we'll cross that bridge when we come to it," he said.

Hams experiencing RF interference problems can contact the ARRL Laboratory by contacting Ed Hare or ARRL Lab EMC Specialist Mike Gruber, W1MG.

The complete interview with Hare is in Episode 196 at *www.hamradionow.tv*

Thanks to Gary Pearce, KN4AQ/HamRadioNow

http://www.arrl.org/news/switching-power-supplies-a-more-common-noise-source-than-power-lines-arrl-lab-manager-says



Apple Watch Review: Elegant, Delightful ... and Completely Optional

By Will Shanklin from **Gizmag.com**
April 29, 2015

Is the long-rumored Apple Watch worth a spot on your wrist? Gizmag reviews Apple's first smartwatch
Is the long-rumored Apple Watch worth a spot on your wrist? Gizmag reviews Apple's first smartwatch

After more than two years' worth of rumors, the Apple Watch is finally here. As the company's most closely-watched launch in five years, can it follow the Sasquatch-sized footprints of the iPod, iPhone and iPad? Join Gizmag, as we review the Apple Watch.

(Photo: Will Shanklin/Gizmag.com)

The Digital Crown pays homage to traditional watches by letting you scroll and zoom by twisting (Photo: Will Shanklin/Gizmag.com)

Apple's three-ringed approach to glanceable fitness data (Photo: Will Shanklin/Gizmag.com)

The Apple Watch might be able to last two days if you wanted it to, but it's best to charge every night just to be safe.

In terms of innovation, the Apple Watch is more like the iPod than it is the iPhone or iPad. The iPhone was (and is) Apple's most important product. It was like nothing else before it, pulling us all into the world of mobile multitouch that we live in today, one curious shopper at a time.

Three years later, the iPad took that same interface and adapted it to a much bigger, more immersive display.

At launch, both were without peers.

But the Apple Watch? Like the iPod, it doesn't really do much that its competitors weren't already doing. It just squeezes it all into a smaller and more elegant package.

That analogy only goes so far, though, because the quality and design gap between the Apple Watch and the best smartwatches to come before it is much smaller than the gap between the first iPod and its clunky predecessors. Wear watches are far from perfect, but they're infinitely better as smartwatches than the Creative Nomad and Diamond Rio ever were as MP3 players.

The Apple Watch is a delightful smartwatch that's a ton of fun to use. Of all the wearables we've handled (and we've handled quite a few), the Apple Watch is the most refined and human-oriented, as well as the easiest to fall in love with.

Apple squeezed its wearable tech into a smaller body than we've seen from any of the Android Wear or Samsung Gear watches. It's

actually the closest in size to Pebble Steel, which has a black & white, non-touch display and primitive processing power. It's quite the feat that Apple crammed some pretty advanced tech into a casing that's around the same size as Pebble's barebones watch.

The Apple Watch isn't trying to look like a regular timekeeping watch, but the fact that it's as small as one makes all the difference. We find this approach to work a little better than watches like the Moto 360 (above, with the Apple Watch) or Asus ZenWatch, which look a bit more like standard watches than the Apple Watch does, but are also noticeably bigger.

... and keep in mind that we're only handling the 42 mm Apple Watch, which is the bigger model. The 38 mm model stretches that size gap between it and Android Wear watches even farther. The Apple Watch is the first smartwatch that women with smaller wrists can wear without looking like Dick Tracy's awkward twin sister.

The Apple Watch Sport that we're using is the entry-level model, but it doesn't feel cheap at all. Its aluminium body looks and feels smooth, and its fluoroelastomer (synthetic rubber) band is, somewhat paradoxically, a rubber watch strap that actually feels pretty high-end. If you were thinking about paying a few hundred bucks more for the stainless steel Apple Watch, mostly out of fear that the Sport is "the cheap one," then don't worry. We think this space gray Apple Watch Sport looks very sharp.

Apple is all about simplicity, so you'd expect its smartwatch software to be the simplest, right?

Well, not this time. Apple's "Watch OS" actually has the most complex wearable interface we've used, with its user interface and input methods requiring a bit of a learning curve. Unlike an iPhone or iPad, this isn't something that a child can pick up and just "get" within a minute or two.

Though the Watch is more complex than we'd (historically speaking) expect from Apple, it's every bit as intuitive as you'd expect. After learning the software layout and different ways of interacting with the watch (this took all of half an hour), we realized how naturally it was all laid out.

While that slight complexity the first time you put it on may be surprising to Apple Watch buyers, it also gives developers more ways for users to interact with their apps. Once everyone learns how to use the Apple Watch (trust us, it won't take long), and developers get some time to cut their teeth on it, there's a lot that we'll be able to do on these tiny screens. More so than other wearable operating systems, Watch OS feels like an exciting new frontier.

That's because the Apple Watch doesn't rely solely on a touchscreen and a button or two. It has the touchscreen and it has two physical

buttons, but it also has a second, never-before-seen way of touching your screen, known as Force Touch, along with the winding "Digital Crown" you see below.

Here's a quick breakdown of all the different ways you can interact with the Apple Watch:

- regular touchscreen input is still the first way of getting around: you know, taps and swipes like you'd use on any smartphone or tablet
- pressing down farther on the touchscreen activates a "Force Click" – a secondary touch that often brings up menus or other options (also seen on Apple's latest MacBooks)
- pressing the Digital Crown (again, that's the winder on the watch's top right side) serves as a back button and shortcut to your apps screen
- twisting the Digital Crown lets you scroll up and down lists and messages, as well as zoom in and out of your app collection and images
- double-pressing the Digital Crown jumps to your most recent app
- long-pressing the Digital Crown starts Siri,
- single-pressing the lower right side button jumps to a list of your favorite contacts for easy messaging
- double-pressing that messaging button activates Apple Pay

That's eight different input methods, all on a teeny-tiny device with only a screen and two physical buttons. So while the Apple Watch's UI might not be the simplest from the moment you pick it up, it still does more with less than any other wearable we've used. Once you learn the ropes, this is the most advanced and intuitive smartwatch OS today.

The last thing to note about that learning curve is that it isn't a chore. On the contrary, we found it to be a fun process of discovery. The first time I felt an alert "tapping" my wrist (as opposed to the motor-like buzzing you'll find on other smartwatches) I was reminded that Apple still gets the whole human touch thing better than any other tech company.

The Apple Watch has a gorgeous display. It isn't alone in this respect, as rivals like the Samsung Gear S, Asus ZenWatch and LG G Watch R also have great-looking AMOLED screens (technically P-OLED for LG's). But we would put the Apple Watch's Retina Display at the top of that group. It has a satisfying blend of rich colors, sharpness (302 pixels per inch, which looks very crisp at a typical watch-viewing distance) and color balance.

So what do you do with an Apple Watch? The answer to that doesn't differ much from other smartwatches. Like Android Wear and Samsung Gear, Apple's Watch centers around things like notifications, reminders, voice control and fitness tracking. The common theme is that it's all glanceable and easily digestible.

A smartwatch isn't meant to be a fully immersive device. Instead, it's something you use in short little bursts, often while you're on the move or in the middle of doing something.

It replaces the habitual whipping out of your phone.

Think of all the things you'd do on a smartphone. Now subtract all of the things that you'd also do on a tablet. What you have left should be a pretty good idea of the kinds of things that work well on a smartwatch. It's the quick-access kinds of tasks – checking alerts, sending a quick message, looking at the forecast, getting directions, etc. – now living on your wrist.

As you might expect, the Apple Watch is launching with a much better selection of third-party apps than Android Wear or Samsung Gear's Tizen did. In fact, Watch OS might already have a better library than those two do *right now* – and both of those platforms launched in early to mid-2014.

Why all the app love? Well, developers don't have to second-guess whether the Apple Watch will sell, and they know iPhone owners aren't afraid to spend money (as evidenced by iOS app spending). Fair or not, the Apple Watch is the first smartwatch to have a damn solid selection of apps on Day One.

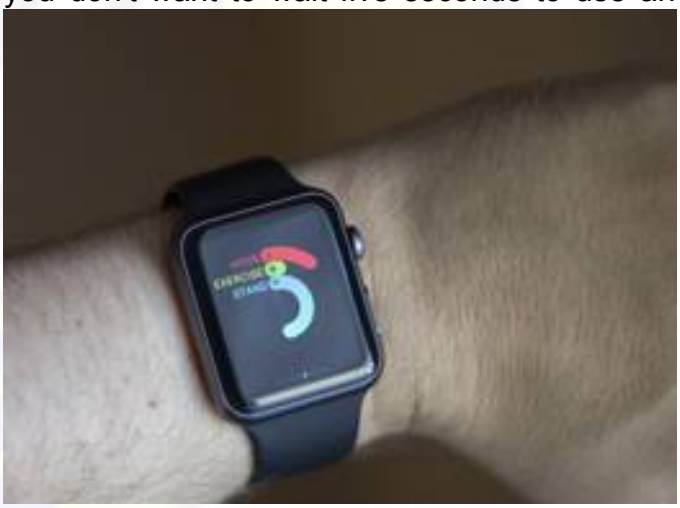
Some of the early highlights include Uber (calling a car from your wrist is pretty convenient), Amazon, Philips Hue, Shazam (for some reason Android Wear still doesn't have a song ID feature) and, if you're into social media, Twitter.

There is, however, one big problem with running apps on the Apple Watch: most of them are slow as molasses to load. We're talking "pick up a smartphone from four years ago and use it with today's apps" slow. Many apps – both from Apple and third-party developers – make you stare at a loading screen for as much as five or six seconds before they start. In the world of today's speedy mobile devices, it sticks out like a sore thumb.

Once they're loaded, they're as zippy as they need to be. And those Glances (widgets or cards) that live below the main clock face don't take any time to load.

Of course we can look forward to a second-generation Apple Watch that will have a faster processor. Maybe Apple will even be able to push some software updates that will help to cut down on the problem in this first-gen Watch.

But for now, app loading times can be a big annoyance in what's otherwise a very smooth and airtight experience. Especially when you're on the go and trying to do something quickly, you don't want to wait five seconds to use an



app (first-world problem, yes, but for a device that starts at US$350 and runs as high as $17,000, it's disappointing).

The Watch shows you your fitness details in a handy little graphic that, like the Watch's software as a whole, seems complex at first glance, but then turns out to be a more economical way of doing things.

Three nested rings, with different colors, denote your progress towards your daily goals of standing time (hours in which you've stood for at least one minute), exercise time and calories burned. Once you learn which ring means what, it's a more glanceable way of keeping tabs on your fitness – and one that doesn't clutter up your screen with a bunch of numbers.

Battery life is good, and not too far off the pace of the longest-lasting Android Wear and Samsung Gear watches. On a 16-hour day with moderate use, it usually ends the day with nearly 50 percent battery left. We recommend following Apple's advice and charging daily no matter what, but as long as you do that, you shouldn't have any problems.

The Apple Watch's charging mechanism is pretty elegant (though the Moto 360's wireless charging is still the best approach we've seen). Hold the Apple Watch's magnetic charging nub near the back of the device and it will snap into place. And if that doesn't work for you, third-party accessory makers are already churning out charging stands to hang your Apple Watch on at the end of the day.

The Apple Watch is a new frontier in wearables, one that's enjoyable to use on Day One and will only get better as developers continue to cut their teeth on it.

Do you need an Apple Watch? Of course not. It doesn't do much that your smartphone won't already do. It just does it a little more conveniently. After a decade or so full of flourishes of innovation in the mobile world – digital music players, smartphones and tablets – we're now to the point where the latest and greatest devices don't really change our lives so much as they remove a step or two from the process. In this case, that step is whipping out your phone.

Smartphones changed everything, putting

multitouch computers in our pockets. Tablets then created a new middle-ground product that was more immersive than a phone but more handheld than a laptop. But what do wearables do? They just take all the things we're already doing, and give us slightly easier access to them.

That has value, but it also makes sense that smartwatches have been slow to catch on. Though they're fun, convenient and – in some cases – fashionable, they aren't going to make an enormous difference in your life. The Apple Watch, at least right now, is no exception.

But that doesn't mean there isn't a place for smartwatches. First, this stuff can be fun: the joy of using a well-designed new gadget, along with a little bit of convenience, may be all the justification you need. And as the app ecosystem grows, and as connected home ("internet of things") types of devices expand, we may actually get to the point where we "need" smartwatches – even if they're just an expensive luxury right now.

We won't pretend to know whether a smartwatch is a wise purchase for you today. But we can recommend the Apple Watch as the best of the current bunch, even if that lead is the smallest we've ever seen for a brand new Apple mobile product on Day One. Android Wear is a promising platform as well, and Samsung is going to keep trying new things with its Tizen OS. It will be fascinating to see how those rivals react now that the elephant in the room is out in the open, and strapping itself to early adopters' wrists.

The delightful Apple Watch is available now in Apple's online store (though it's backordered by more than a month), starting at $350 for the 38 mm Apple Watch Sport. The 42 mm space gray Apple Watch Sport that we handled for this review costs $400. All versions require an iPhone 5 or newer to pair with it.

(Photos: Will Shanklin/Gizmag.com)

Source;

http://www.gizmag.com/apple-watch-review-iwatch-review/37244/

PaPiRus E Ink Display for Raspberry Pi

http://www.gizmag.com/papirus-e-ink-display-raspberry-pi/37628/

British company Pi Supply has created a low-power, low-cost e-ink display module for the Raspberry Pi do-it-yourself single-board computer. PaPiRus, as it's called, comes in three interchangeable screen sizes (1.44, 2.0, or 2.7 in), and like all e-paper devices it's readable in sunlight and it remains on (which is to say it can display a static image) for a very long time without power. Its creators note that it is particularly well suited to data-logging applications and outdoor displays.

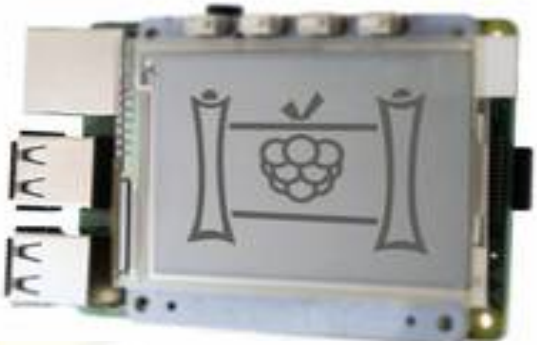
PaPiRus fits the recently-released Raspberry Pi 2 Model B as well as prior models A+ and B+. It comes with 32 megabits of flash memory, along with a battery-backed real-time clock with a wake-on-alarm functionality (if connected via an optional "pogo pin" to the Raspberry Pi "RUN" header). It also has a temperature sensor and a general-purpose input/output (GPIO) breakout connector, as well as four optional slimline switches that fit on the top of the board.

The 1.44-inch (3.66-cm) screen has a resolution of 128 by 96 pixels, the 2.0-inch (5.1-cm) display has 200 by 96 pixels, and the larger 2.7-inch (6.86-cm) option has 264 by 176 pixels.

PaPiRus comes about thanks to a collaboration between Pi Supply and e-paper company Pervasive Displays. It integrates with the existing open-source RePaper codebase, with a suite of example code and wiring diagrams already available for the Raspberry Pi.

Pi Supply has taken PaPiRus to Kickstarter to fund a manufacturing run and add more features to the module. With around two weeks to go, the project has blown way past its £5,000 (US$7,818) funding goal. At the time of writing PaPiRus has just passed a £25,000 stretch goal to include the four optional buttons free to all backers.

You'll need to pledge at least £25 for the small screen package. A set of each of the three screens with one PaPiRus HAT board is listed at £65 or more. If all goes to plan, all packages are expected to ship in July.



The Branch 48 Wanganui Award

Wanganui has recently celebrated the 100th birthday of the Dublin Street Bridge so, it seems fitting to have a promotion of the Wanganui Award which depicts the Old Town Bridge which was replaced in 1970 and is situated only a few kilometres downstream from the Dublin Street Bridge.

The sketch on the Award is by the late Gerald Weeks, a well admired artist and sculptor from Wanganui.

The award measures 220mm x 190mm and is printed in full gloss.

Qualification is very easy, only 8 points required and the Club Call Sign of ZL2JA counts as two points, as does contact with any Wanganui YL. Contact with ZL2JA is not compulsory. Any mode or any band including repeaters and the National System, with contacts dating from 1st January 1982 from permanent residents of Wanganui. (May be portable)

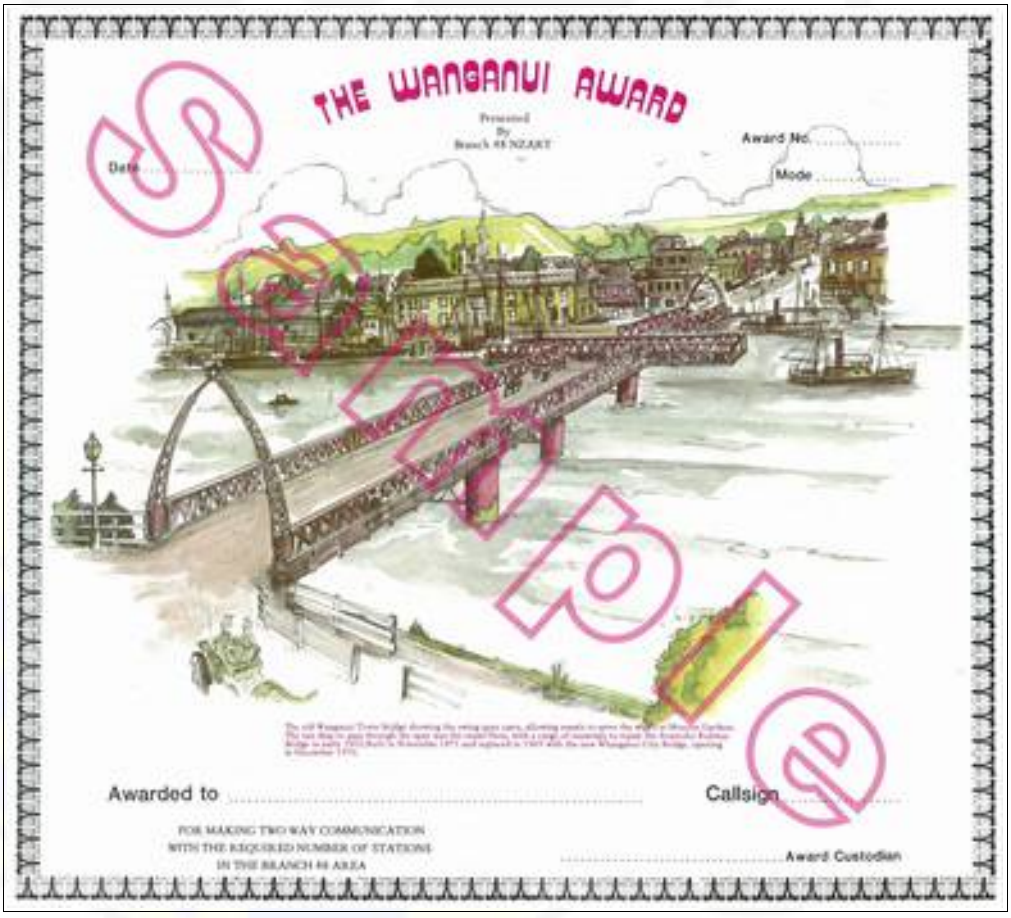
Several Wanganui stations are active on the Old Timers Club net on 3.870MHz on Monday evenings at 8.30pm.

Anyone is welcome to announce themselves and join in and make contacts with Wanganui stations after the net.

Applications for the Wanganui Award can be made by submitting Log evidence to Ivan Horn. Award Custodian, P.O.Box 7250, Wanganui. A fee of $5.00 is applicable.

Ivan Horn
Award Custodian

"The old Wanganui Town Bridge showing the swing span open, allowing vessels to serve the wharf at Moutoa Gardens. The last ship to pass through the span was the vessel Huia, with a cargo of material to repair the Aramoho Railway Bridge in early 1902. Built in November 1871 and replaced in 1969 with the new Wanganui City Bridge, opening in December 1970."



The Back Info Page

(Links are "clickable" in the PDF version)

The Internet:

The ZL2JA Webpage:
http://zl2ja.org.nz/

The ZL2JA Photo Gallery:
http://zl2ja.org.nz/photos/

Listen to the New Zealand National System (Live-ish):
http://zl2ja.org.nz/listen/

The Wanganui Award:
http://zl2ja.org.nz/award/

ZL2JA on Youtube:
http://www.youtube.com/user/ZL2JA

NZART (NZ's National AR Organising Body):
http://nzart.org.nz

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Branch Repeaters:

"Wanganui 690"
Output 146.900MHz, In -600kHz

"Wanganui National System 9875"
Output 439.875MHz, In -5Mhz

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