County Hunter News

February 1, 2013
Volume 9, Issue 2

Welcome to the On-Line County Hunter News, a monthly publication for those interested in ham radio county hunting, with an orientation toward CW operation**.**

Contributions of articles, stories, letters, and pictures to the editor are welcomed, and may be included in future issues at the editor's discretion.

The County Hunter News will provide you with interesting, thought provoking articles, articles of county hunting history, or about county hunters or events, ham radio or electronics history, general ham radio interest, and provide news of upcoming operating events.

We hope you will enjoy the County Hunter News. Feel free to forward, or provide links. Permission is given for copying or quoting in part or all provided credit is given to the CHNews and to the author of article.

CW County Hunter Nets run on 14.0565, 10.122.5, and 7056.5, with activity occasionally on 3556.5 KHz. Also, there is SSB activity now is on 'friendly net' 7188 KHz. The cw folks are now pioneering 17M operation on 18.0915. (21.0565, 24.9155, and 28.0565 when sunspots better). Look around 18136 or for occasional 17M SSB runs usually after the run on 20M SSB. (21.336 and 28.336)

You can see live spots of county hunter activity at ch.W6RK.com

For information on county hunting, check out the following resources:

The USACA award is sponsored by CQ Magazine. Rules and information are here:

http://countyhunter.com/cq.htm

For general information FAQ on County Hunting, check out:

http://countyhunter.com/whatis.htm

MARAC sponsors an award program for many other county hunting awards. You can find information on these awards and the rules at:

http://countyhunter.com/marac_information_package.htm

The CW net procedure is written up at:

http://www.wd3p.net/ch/netproc/netproc.htm

There is a lot more information at www.countyhunter.com . Please check it out.

Back issues of the County Hunter News are available at www.CHNewsonline.com

Want county lines on your Garmin GPS?

http://pages.suddenlink.net/w4ydy/hamlinks.html#County

Download the file to a flash card that fits in your GPS unit, turn it on, and the county lines should appear!

De N4CD, Editor (email: telegraphy@verizon.net)

Notes from the Editor

1) **Winter has arrived.** Temperatures reached 30 below zero or lower in MN and headed east with 10 below or lower in NY state and in New England. Needless to say, northern mobile activity was minimal. We've had some nasty storms with snow across much of the country.

On the solar front – despite heading for the sunspot maximum, the bands don't seem to be cooperating. The upper bands on many days are just 'blah' and even 20M is not that great much of the time. There have been days of high A index, but it seems just more and more days of 'blah' propagation. Of course, not having many mobiles just seems to make it worse.

No trip reports were received in the past month, so nothing in that department to pass on to the readers this month. The N4CD mobile sat in the garage for the last six weeks, so it must be

time for a bit more county hunting coming up. There's been plenty of time (dead band days) to surf the web and so we've included some articles to fill the space in the County Hunting News.

2) Fort Lauderdale County Florida?

Joyce, N9STL, noted a newspaper article which indicated that Broward County FL is considering changing its name to Fort Lauderdale County.

3) IC 706 Keyer interface problem – W3DYA

Norm, W3DYA, ran into the problem that the 1/4 inch for the key/paddle leads tends to wear out over time, and you have to constantly reseat the jack to keep it working. He was interested in using the RJ-45 jack for his external keyer. He noted:

Successful test using external keyer to RJ45 jack on IC-706.

Thanks to Bob's (KA9JAC) persistence, he finally explained to me exactly how it should work.

If anyone is interested, refer to page 34 in the IC-706MKIIG manual.

Connect one lead from the external keyer to Pin 7 on the front panel mic RJ45 connector (Brown/white).

Connect a 3.9K Ohm resistor between the other keyer lead and Pin 2 on the RJ45 connector (solid orange).

Set Q4 CW Paddle to "OFF". Not "UD" which is for the mic UD buttons.

This doesn't work with the rear RJ45 mic jack.

I'll be trying this out in the LA QP next month, but don't really expect any problems. I've always had to reseat the CW jack on both my IC-706's, which is the reason I tried this.

Again, many thanks to Bob, KA9JAC!
73, Norm, W3DYA

Mobile Activity this month

Ron, **KB6UF,** headed back from California via AZ, NM, TX and then ran a good part of LA on his way home.

Jim, **K0ARS,** showed up in VA on cw

The team of **K6JN/W6XJN** headed east once again.

Mary, **AB7NK**, and Neil, **K7SEN,** headed east to TX to run a bunch of counties. Ran into some snow in west TX and in NM.

Jerry**, K1SO,** ran a few in VA.

Joyce, **N9STL**, headed around FL putting them out. Here's a picture she took for the county line data base. She kept 14337 and 7188 humming all day.

Tom**, N2CU** and Paul, **WB2ABD**, took a trip down to PA to run a few.

Jack, **N7IV**, headed from MN to ND.

Manatee, FL – by Joyce, N9STL

Bob, **K7TM**, headed down from WA to OR to CA to AZ.

Jim, **N9JF,** was on from FL. Then he appeared in KS.

Pat, **N0DXE** and Barry, **N0KV** headed out and ran around in CO and up into WY.

Karl, **K4YT,** took a one day trip to eastern VA putting out some rarer ones.

Ron, **K2RP** was seen over in Imperial, CA and Yuma, AZ on cw.

Jack, **KC7YE**, was putting them out in WA on several days – over to Gray's Harbor and Jefferson and some other tough ones. Not much luck working folks on 40m and 80M cw from there though.

Jim, **ND9M,** headed on out from FL through AL and MS and TN putting them out. Up to IL, then back via IN and KY.

Larry, **W7FEN**, headed back from AZ to NM to TX and back. He put out others in AZ as well.

N6PDB/WA6OCV, Dennis and Susan, were running counties in northern CA.

K7RE , Brian, headed over to WY and put out a bunch there.

Matt, **W0NAC** and Sharon, **N0LXJ**, were out in KS on a trip. Later put out some CO on the data modes for the 5 mode award.

Karl, **K4YT,** dropped by and visited **N8KIE**,Bob, in Honolulu, HI – and got on the air with the mobile from there on cw.

Kerry, **W4SIG**, was on from GA and AL. Also in TN and MS.

Pete, **NN9K**, put out a few in IL on cw.

Rick, **W5QP,** put out a lot of counties in SW and western OK.

Gene, **N4ANV**, headed south from NC to FL

On 20M SSB, the regulars **WB5TMW** (in OK and TX), **Richard**, AC0HW, **Seth**, N3MRA, were on many days. They roamed around the country. **N0ZDZ** ran some in AR.

Ed**, K8ZZ**, put out a few in MI.

Mike, **KA4RRU**, headed to FL.

Last Call for CW Stats

from Dennis, KK7X:

Once again I am handling the CW Stats

Please send me your CW Stats as of the end of 2012 shortly after January 1.

You can find the Stats for 2011 by visiting this link

http://www.countyhunter.com/County Hunter_CW_Stats_for_2011.pdf

If you have any question please don't hesitate to contact me.

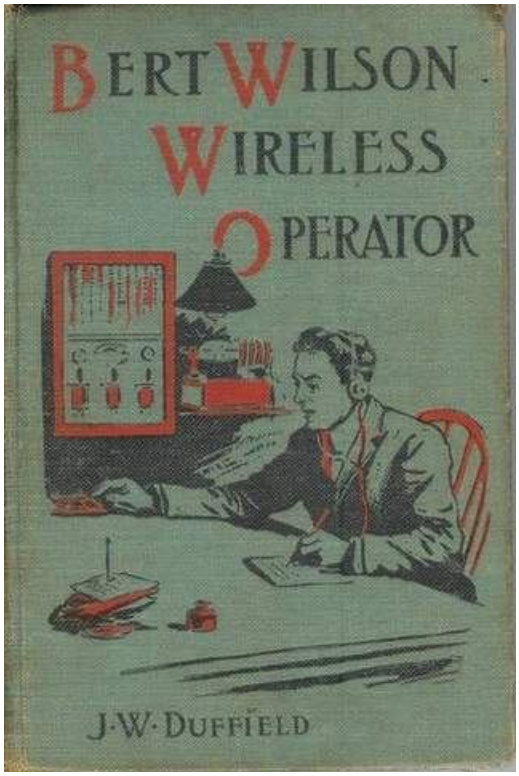
73, Dennis – KK7X Dennis@kk7x.us

Bert Wilson – Wireless Operator

the N4CD Book Review of the Month

Another old book I've stumbled across – well, sort of swapped one old book for another – is an interesting spark era radio tale of a young college student who takes a summer job as a wireless

operator on a steamer from California to China. Year – 1913 – About 100 years ago, now. This is a trip back to ancient radio technology before the era of even assigned callsigns. In this time period, spark reigns supreme. It's aimed at the 10-15 year old crowd of the day. No TV or even radio was around back then to entertain folks.



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http://www.gutenberg.org/ebooks/39262

Let's see...there' more than enough adventure but hardly any involving radio. Technical detail is – well, non existing. The adventure starts out on the dock where the wireless operator Bert

and his two college friends, going as passengers, are attacked by a drug crazy “Malay”, and they narrowly escape but make it to the ship. Bert is the new wireless operator on the ship. He's on a 3 month tour of duty as a 'summer job' between college semesters.

It's not long after they go to sea help rescue passengers from a sinking vessel, the wireless (for which they give zero details other than it works) being critical to that task, and they get the last passengers off just as it sinks. This is one year after the Titanic went down. Almost everyone was now familiar with 'wireless' but few actually understood it. Lots of credit given to the wireless for saving lives. They are headed to HI and arrive with the rescued passengers.

They zip around HI for a few days while there – the big Island – on a short stop. More adventure there. All the main characters of the books have a knack for getting into, then out of trouble in these books. Soon it's back to the ship to continue the journey across the Pacific.

Not long after, they are sailing by some 'uninhabited' islands and spy a flag flying. Naturally they have to stop and investigate to see if a 'cast away' was stranded there. A landing party of six go to the island. After traipsing across it through thick jungle, they find the camp where the cast away has been living. He's kept a diary. Apparently there are cannibals visiting the island and he fears he might be captured and eaten. The crew from the ship see he's been gone for two days according to the diary entries – he hasn't noted anything in two days. They assume the worse.

They find the camp where the cannibals are staying (20 or so of them). They sneak in and rescue the cast away, killing two of the cannibal guards silently, but the natives are right on their tail a bit later. It's just in the nick of times as the castaway was the planned dinner for the next day.

They build a small fort in a jungle clearing, and manage to fight off the cannibals. Thank goodness for a few handguns. They make it back to the ship with no casualties. Just your run of the mill trip to an 'uninhabited' Pacific island.

Later they skirt a typhoon and help summon help for another damaged ship that is sinking after hearing their SOS and provide assistance. They arrive in China and do some sightseeing.

On the way home, they are attacked by pirates, but the wireless operator , after the pirates have attacked several times and have worn down the outnumbered crew, comes up with a way to place an electrical barrier at the railing and electrocutes a half dozen of the pirates and the rest flee. That all takes place in less than 3 months of the summer stint as wireless operator.

Wow...I must have missed out...when I had summer jobs in college, I didn't encounter cannibals, pirates, two sinking ships, or anything quite like that! Hi hi

I'll wait till the next Vintage Radio Club meeting/auction and pass it on to the next reader who

wants a paper copy.

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How did all these books get written? Interesting question. (and for you newbies – no, they didn't have comic books or paperback books back then!)....

A good many of the 'youth books' of the day were written by the Stratemeyer Syndicate. The Radio Boys and Radio Girls Books were done that way. From the net:

The Stratemeyer Syndicate, a "book packager,", was responsible for many popular juvenile series books published between 1905 and 1986, including the Bobbsey Twins, Tom Swift, Hardy Boys, and Nancy Drew books, among others. The Syndicate produced some 1,600 volumes which were written from outlines by hired "ghostwriters" for a flat fee (ie, no royalties). Over the 75+ years of their operation, the Syndicate hired about 100 different ghostwriters for their series. Some writers completed only a short story or a partial manuscript while some others wrote more than 100 volumes. Howard R. Garis, wrote more than 315 books for the Syndicate.

In 1911, the first Stratemeyer Syndicate book featured a radio theme. This book, *TOM SWIFT AND HIS WIRELESS MESSAGE,* (Grosset & Dunlap, 1911) was written by Howard Roger Garis (1873-1962) and published under the "Victor Appleton" name. The spark-gap radio was not described in great detail but it did help Tom and his friends escape from Earthquake Island on which they were marooned.

In 1912, Weldon J. Cobb suggested to Stratemeyer that they start a "wireless boys" series of some sort. Edward passed on this idea by saying that he had already supervised one story and had another in the works. He had Cobb write *THE BOYS OF THE WIRELESS,* (Cupples & Leon, 1912) which was published in 1912 under the "Frank V. Webster" pseudonym.

A non-Syndicate series written by John Henry Goldfrap (1879-1917) and published under the "Capt. Wilbur Lawton" pseudonym was the Ocean Wireless Boys series, published by Hurst between 1914 and 1917. Goldfrap wrote several series for Hurst which were published under various pen names.

As broadcast radio became a popular fad in 1922, several publishers tried to capitalize on this enthusiasm. Naturally, this was not the first time that multiple series were created around a given event. The foundation of the Boy Scouts of America in 1910 saw several series, often with little or no connection to the activities of real Boy Scouts, published by between 5 and 10 publishers. Some of the non-Syndicate radio series to be established in 1922 include:

- The Radio Boys series (A.L. Burt, 1922-31) by Gerald Breckenridge
- The Radio Boys series (M.A. Donohue, 1922-23) by various writers
- The Radio Detectives series (Appleton, 1922) by A. Hyatt Verill
- The Radio-Phone Boys series (Reilly & Lee, 1922-28) by Roy J. Snell
- The Bill Brown series (Hurst, 1922) by Wayne Whipple & S.F. Aaron

along with many single titles in longer series.

John William Duffield (1859-1946) was a prolific writer for the Stratemeyer Syndicate. H wrote a series about a character named Bert Wilson (1913-1914), which included one radio-themed title, *BERT WILSON, WIRELESS OPERATOR* (Sully & Kleinteich, 1913).

Many ordinary series had single volumes which had radio as a theme such as *TOM SWIFT AND HIS WIRELESS MESSAGE* (Grosset & Dunlap, 1911) and two volumes in the Boy Inventors series: *THE BOY INVENTORS' WIRELESS TRIUMPH* (Hurst, 1912) and *THE BOY INVENTORS' RADIO TELEPHONE* (Hurst, 1915). Even the Bobbsey Twins participated in a "radio play" in a volume published in a 1937 volume written by Elizabeth M. Duffield Ward. The Hardy Boys solved a mystery involving short-wave amateur radio called *THE SHORT-WAVE MYSTERY* (Grosset & Dunlap, 1945) by "Franklin W. Dixon" (Leslie McFarlane (1902-1977)) which was first published in 1945 and later republished with the same title and an extensively revised plot in 1966.

Source: http://www.keeline.com/Chapman/

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We'll have reviews on a few more of the 1912 era books in upcoming issues. This book got passed on to the next reader at the Cowtown Hamfest held in mid January for the ten bucks I paid for it last month. Cheap reading!

48V System Cars?

Stop/start systems, popular in Europe but still struggling to secure a beachhead in the U.S., are gaining sophistication as auto makers look to squeeze out every last mile per gallon while appeasing customer demands for more seamless operation.

Auto makers say North American installations of current-generation systems so far have been held down by an unfavorable Environmental Protection Agency test cycle that limits their impact on mileage ratings, making the extra cost of the devices a tough sell to American

consumers.

Further restricting U.S. acceptance is performance. Operation can be crude in some applications, with engines rudely shaking back to life as traffic lights turn green and conventional starter motors crank up once the driver releases the brake or selects a gear.

But suppliers now are moving forward with development of a second wave of technology that promises to shut down engines more frequently and fire them back up faster and more smoothly to maximize fuel efficiency.

Germany's Bosch told WardsAuto in September it will have such a system on the market in Europe in 2015-2016, with U.S. availability a year later, saying fuel savings could be as high as 15%.

Hella, which helped develop the stop/start system now going into the Ford Fusion, also has begun talking about its next-gen design that will offer a coast-down feature that cuts the engine during deceleration.

And French supplier Valeo has an advanced system onboard engineering firm Ricardo's HyBoost test vehicle that more intelligently manages stops and starts while also supplying a short burst of electrical power at launch.

Now, U.K.-based Controlled Power Technologies, formed out of a 2007 management-led buyout of a Visteon operation in Essex, says its SpeedStart system will be ready for application in production vehicles in 2015, with an even-more advanced "micro-mild" hybrid version in the works for release later in the decade.

SpeedStart is a belt-driven, integrated starter/generator system that incorporates its own power electronics in a single package. Billed as a world first, it uses liquid-cooled switched-reluctance motors CPT says are infinitely more controllable than popular permanent-magnet motors.

Like the Hella device, the CPT system would shut off the engine during coast-down and restart it instantly when the accelerator is pressed (taking just 400 milliseconds, a speed a conventional starter motor can't match).

The reaction time means even if a driver lifts off the throttle momentarily, the stop-start transitions will be quick, sure and smooth enough not to be an annoyance, CPT CEO Nick Pascoe promises.

"If you have a Class 8 truck bearing down on you at 60 mph (97 km/h), you don't want to have any doubts the engine is going to (restart) just as you are about to pull back out," he says at a media backgrounder here. "Driver angst about the restart event is one reason OEMs today have said no to start/stop."

CPT says the current device is geared for 12v electrical systems but is scalable to a 48v architecture, which CPT says auto makers are advancing toward.

Coupled with the higher voltage electrical system, the SpeedStart could provide 10 kW (13 hp) of electrical driving power for up to 30 seconds, reducing engine loads and improving fuel economy, Pascoe says.

That would position SpeedStart as a midrange micro-mild hybrid technology, providing less electrical boost than a higher-voltage, full mild hybrid like Honda's Integrated Motor Assist powertrain or General Motors eAssist, but costing much less.

"We see this in the lower half of mild-hybridization," Pascoe says. "This is putting a number of small electrical devices on, (with) the key enabler electronics. We see this as smart use of technology, rather than a big sledgehammer."

SpeedStart would work with engines up to 4.5L-5.0L in size, CPT says. The power bursts would be mapped precisely to specific engine loads to maximize fuel-economy and carbon-dioxide-reduction gains.

The developer says it will have the 48v version of the device installed on a demonstrator vehicle next year for testing. It expects the higher-capacity electrical architectures to begin to appear on vehicles in 2015-2016 and start to proliferate around 2020.

SpeedStart can work with multiple types of batteries, including advanced lead-acid or lighter-weight, higher-cost nickel-metal-hydride or lithium-ion.

"If you're in the volume markets (where cost is a factor), you may want to stay with commodity battery technology if you can," Pascoe says. "There's some good development going on in lead-acid batteries. They still have a lot to offer, and they have a huge cost advantage."

CPT already has demonstrated its 12v low-cost LC Super Hybrid micro-mild hybrid technologies, including the SpeedStart system, a Valeo electric supercharger and new lead-carbon batteries, in a Volkswagen Passat with a 1.4L TFSI gasoline engine.

Despite the smaller engine, acceleration equaled that of a 1.8L TFSI engine, while CO2 emissions were cut to roughly 130 g/km from about 150 g/km for the bigger powerplant. Retail cost of the system likely would be in the ballpark of $600-$700.

Going to a 48v version of this micro-mild hybrid approach would trim at least another 10 g/km or so in CO2 emissions, equaling the performance of a Passat equipped with VW's 2.0L TDI diesel, CPT predicts. Acceleration of 0-62 mph (100 km/h) would be more than a half-second

better than the diesel, which already exceeds the 1.8L TFSI engine.

Add-on retail cost, estimated at about $1,000 (including the tab for the 48v architecture), would put the system at least $2,000 below the price of the optional diesel, CPT says.

“The fuel economy is not at (Toyota) Prius levels, but it is heading in that direction,” Pascoe says. “(And) it’s not many thousands of dollars to get this type of fuel economy.”

Hurdles include making sure the belt-driven device performs at temperature extremes and the belt itself can withstand the peak electrical torques possible in a 48v architecture.

CPT expects regulators eventually will give stop/start a marketing boost by revising test cycles to take advantage of the technology, nudging fuel-economy ratings upward and giving consumers a reason to shell out the extra upfront cost.

Current fuel-economy test cycles “are becoming a bit of a dinosaur,” Pascoe says. “You’ll see a lot of progress made in the next few years on drive cycles.”

A German luxury brand is expected to introduce a 48V electrical circuit in tandem with a 12V circuit in 2015, five years before millions of cars using the technology could be on European roads.

Suppliers and auto makers at the biennial CESA automotive electronics conference here are counting on mild hybrids with 48V lithium-ion batteries to reduce fuel consumption in midsize cars 5%-10%.

And just as with diesel, motorization in Europe seems to be moving in a direction different from that of North America.

“I don’t know of any North American activity for 48V,” says Khamis Kadiri, innovation manager-E/E architecture at PSA Peugeot Citroen. “We expect to use (the technology) if it is standard. There is an existing specification, made by the German OEMs but shared by a lot of suppliers and some other OEMs,” including Renault.

Germany’s major auto makers decided two years ago to add a 48V subsystem, and early on PSA was aware of its possibilities from its engine-development work with BMW.

Renault is working on engines with Daimler, and electronics supplier Valeo committed to 48V development early.

The first German 48V system, expected in 2015, may be for a feature other than a mild hybrid,

simply to provide engineers with experience.

Gabriel Wetzel of supplier Robert Bosch says, “We give start of production in 2015 and 2016 as the start in the market. To have a large number of cars (using the technology) in 2020, you need to ramp up very fast. We believe that all manufacturers will start with significant volumes.”

Kadiri says PSA will launch its first 48V system strictly for the mild-hybrid application in 2017. BMW’s Ottmar Sirch says the German OEMs will introduce their mild-hybrid systems between 2016 and 2018.

“It is not easy to put such a change in the cars,” says Sirch. “Between 2016 and 2020, we see the ramp-up of this functionality.”

A mild hybrid incorporates stop/start battery technology and can travel short distances at low speeds using only electric power, but the electric motor mainly helps the internal-combustion engine launch the vehicle and assists under high-load conditions.

An earlier attempt to change the entire vehicle’s electrical system to 42V failed, mainly due to expense, but the 48V system is seen as an addition. It mainly will assist energy recovery and stop/start, but also will be available to boost torque and handle heavy electrical users like electric power steering and rear-window defrosting.

Wolfgang Bernhart, an expert in electrified powertrains at Roland Berger Strategy Consultants, says that in 2020, if no particular government subsidies are in place, 94.7% of cars sold in North America still will have conventional powertrains, 2.4% will be full hybrids, another 2.4% will be plug-in hybrids, 0.3% will be electric and just 0.2% mild hybrids.

In Europe, he expects 70.1% of vehicles to have standard powertrains, 25.8% will be mild hybrids, 2.5% will be plug-ins, 1.4% will be electric and 0.2% will be full hybrids.

Says Bernhart, “We expect that optimization of powertrains will bring most OEMs relatively close to the target” of 95 g/km of carbon dioxide in 2020, the equivalent of 56 mpg (4.2 L/100 km) for gasoline-powered engines and 60 mpg (3.9 L/100 km) for diesels.

The German auto makers decided on the 48V standard two years ago, and through the VDA industry association have been defining the specifications to be met.

Recovering energy during braking or deceleration with 48V is twice as efficient than with 12V, he says. “If you can save 5%-10% with 48V, you could save only 2.5% to 5% with 12V. And with 12V, boosting would be zero.”

Some start/stop systems in Europe recover braking energy, such as the PSA version supplied by Valeo in its diesel hybrids with an electric rear axle. The current version uses ultracapacitors to grab energy more quickly than the lead-acid battery and provide a little boost, but a 48V system with a Li-ion battery can do more.

“An increase of onboard electrical needs alone won’t justify changing the voltage network,” says Frank Briault, a PSA engineer who worked on the current start/stop system. “But each gram of CO2 which is saved, we accept (having) to pay for that. New functions will appear on vehicles.”

If other companies develop 48V products using the German specifications, BMW’s Sirch predicts, “this will be a base that will help suppliers and sub-suppliers offer their solutions to car manufacturers in Germany, France or anywhere.”

http://wardsauto.com/vehicles-amp-technology/new-electrical-circuitry-designed-reduce-emissions

Yet Another Greenie Taxpayer Fail

In 2005, Atlanta-based EnerTech Environmental Inc. sold the Orange County Sanitation District and waste treatment plants from Los Angeles, Riverside and San Bernardino counties on a way to turn their biosolids – it is what it sounds like – into clean-burning coal-like pellets.

But the Enertech plant in Rialto was closed for repairs more than it was open. And in October it went belly up with $150 million in debt and not nearly enough assets to cover the bill.
“This is a painful ‘oops,’ a good idea that didn’t work,” said Geoff Berman, with Development Specialties Inc., a Los Angeles company that is helping to liquidate the plant.
The Orange County Sanitation District dropped EnerTech in June, but not before spending $3.5 million more than it should have to get rid of its biosolid wastes, according to Jim Colston, the district’s environmental compliance manager.

Colston doesn’t consider it a loss, though. Things could have been much worse. OCSD could have invested in the EnerTech plant, rather than just being a customer, Colston said.
Although the contract with OCSD was signed in 2005, the plant didn’t come online until 2008. The Orange County district generated about 750 wet tons per day of biosolids, sending about a third to EnerTech. The rest was used for composting or spread on rural land that did not

produce anything for human consumption.

Sounds good, except that the EnerTech plant kept breaking down, forcing it to send the waste to Arizona, to be spread out on rural land. Basically, EnerTech was charging high-tech rates for old tech methods.

Orange County got a chance to dump the contract in 2011, but gave the biosolids plant another chance.

Part of the attraction was Orange County needed a way to creatively handle all the B.S. – that's right, biosolids – it was creating.

"This looked like a bargain," said Colston. "Orange County Sanitation District is always looking for new technology."

No longer beholden to the EnerTech deal, OCSD is saving up to $1.5 million a year on its biosolids handling, Colston said. It now sends 10 percent to a landfill, 40 percent to composting and 50 percent to be spread on rural land – at least until the next good idea comes along.

Source:" http://taxdollars.ocregister.com/2013/01/11/wastewater-district-loses-millions-to-biosolids-boondoggle/165167/

Sunspots and Weather

In the galactic scheme of things, the Sun is a remarkably constant star. While some stars exhibit dramatic pulsations, wildly yo-yoing in size and brightness, and sometimes even exploding, the luminosity of our own sun varies a measly 0.1% over the course of the 11-year solar cycle.

There is, however, a dawning realization among researchers that even these apparently tiny variations can have a significant effect on terrestrial climate. A new report issued by the

National Research Council (NRC), "The Effects of Solar Variability on Earth's Climate," lays out some of the surprisingly complex ways that solar activity can make itself felt on our planet.

Understanding the sun-climate connection requires a breadth of expertise in fields such as plasma physics, solar activity, atmospheric chemistry and fluid dynamics, energetic particle physics, and even terrestrial history. No single researcher has the full range of knowledge required to solve the problem. To make progress, the NRC had to assemble dozens of experts from many fields at a single workshop. The report summarizes their combined efforts to frame the problem, for the first time, in a truly multi-disciplinary context.

One of the participants, Greg Kopp of the Laboratory for Atmospheric and Space Physics at the University of Colorado, pointed out that while the variations in luminosity over the 11-year solar cycle amount to only a tenth of a percent (0.1%) of the sun's total output, such a small fraction is still important. "Even typical short term variations of 0.1% in incident irradiance exceed all other energy sources (such as natural radioactivity in Earth's core) combined," he says.

Of particular importance is the sun's extreme ultraviolet (EUV) radiation, which peaks during the years around solar maximum. Within the relatively narrow band of EUV wavelengths, the sun's output varies not by a minuscule 0.1%, but by whopping factors of 10 or more. This can strongly affect the chemistry and thermal structure of the upper atmosphere.

Several researchers discussed how changes in the upper atmosphere can trickle down to Earth's surface. There are many "top-down" pathways for the sun's influence. For instance, Charles Jackman of the Goddard Space Flight Center described how nitrogen oxides (NOx) created by solar energetic particles and cosmic rays in the stratosphere could reduce ozone levels by a few percent. Because ozone absorbs UV radiation, less ozone means that more UV rays from the sun would reach the lower atmosphere and Earth's surface.

Isaac Held of NOAA took this one step further. He described how loss of ozone in the stratosphere could alter the dynamics of the atmosphere below it. "The cooling of the polar stratosphere associated with loss of ozone increases the horizontal temperature gradient near the tropopause," he explains. "This alters the flux of angular momentum by mid-latitude eddies. [Angular momentum is important because] the angular momentum budget of the troposphere controls the surface westerlies." In other words, solar activity felt in the upper atmosphere can, through a complicated series of influences, push surface storm tracks off course.

Indeed, Gerald Meehl of the National Center for Atmospheric Research (NCAR) presented persuasive evidence that solar variability is leaving an imprint on climate, especially in the Pacific. According to the report, when researchers look at sea surface temperature data during sunspot peak years, the tropical Pacific shows a pronounced La Nina-like pattern, with a cooling of almost 1o C in the equatorial eastern Pacific. In addition, "there are signs of enhanced precipitation in the Pacific ITCZ (Inter-Tropical Convergence Zone) and SPCZ (South Pacific Convergence Zone) as well as above-normal sea-level pressure in the mid-latitude North and South Pacific," correlated with peaks in the sunspot cycle.

The solar cycle signals are so strong in the Pacific, that Meehl and colleagues have begun to wonder if something in the Pacific climate system is acting to amplify them. "One of the mysteries regarding Earth's climate system ... is how the relatively small fluctuations of the 11-year solar cycle can produce the magnitude of the observed climate signals in the tropical Pacific." Using supercomputer models of climate, they show that not only "top-down" but also "bottom-up" mechanisms involving atmosphere-ocean interactions are required to amplify solar forcing at the surface of the Pacific.

In recent years, researchers have considered the possibility that the sun plays a role in global warming. After all, the sun is the main source of heat for our planet. The NRC report suggests, however, that the influence of solar variability is more regional than global. The Pacific region is only one example.

Caspar Amman of NCAR noted in the report that "When Earth's radiative balance is altered, as in the case of a chance in solar cycle forcing, not all locations are affected equally. The equatorial central Pacific is generally cooler, the runoff from rivers in Peru is reduced, and drier conditions affect the western USA."

Raymond Bradley of UMass, who has studied historical records of solar activity imprinted by radioisotopes in tree rings and ice cores, says that regional rainfall seems to be more affected than temperature. "If there is indeed a solar effect on climate, it is manifested by changes in general circulation rather than in a direct temperature signal." This fits in with the conclusion of the IPCC and previous NRC reports that solar variability is NOT the cause of global warming over the last 50 years.

Much has been made of the probable connection between the Maunder Minimum, a 70-year deficit of sunspots in the late 17th-early 18th century, and the coldest part of the Little Ice Age, during which Europe and North America were subjected to bitterly cold winters. The mechanism for that regional cooling could have been a drop in the sun’s EUV output

Dan Lubin of the Scripps Institution of Oceanography pointed out the value of looking at sun-like stars elsewhere in the Milky Way to determine the frequency of similar grand minima. "Early estimates of grand minimum frequency in solar-type stars ranged from 10% to 30%, implying the sun's influence could be overpowering. More recent studies using data from Hipparcos (a European Space Agency astrometry satellite) and properly accounting for the metallicity of the stars, place the estimate in the range of less than 3%." This is not a large number, but it is significant.

Indeed, the sun could be on the threshold of a mini-Maunder event right now. Ongoing Solar Cycle 24 is the weakest in more than 50 years. Moreover, there is (controversial) evidence of a long-term weakening trend in the magnetic field strength of sunspots. Matt Penn and William Livingston of the National Solar Observatory predict that by the time Solar Cycle 25 arrives, magnetic fields on the sun will be so weak that few if any sunspots will be formed. Independent lines of research involving helioseismology and surface polar fields tend to support their conclusion. (Note: Penn and Livingston were not participants at the NRC workshop.)

"If the sun really is entering an unfamiliar phase of the solar cycle, then we must redouble our efforts to understand the sun-climate link," notes Lika Guhathakurta of NASA's Living with a Star Program, which helped fund the NRC study. "The report offers some good ideas for how to get started."

Source: NASA press release Jan 8, 2013

Full report here: http://www.nap.edu/catalog.php?record_id=13519

From Ebay this Month

Knight Kit One Transistor Radio - Early

Here's an interesting old and somewhat rare Knight Kit. It's a one transistor radio – but very very early on. At the very very beginning of transistors.

As far as I can tell, it's got exactly 3 parts – a tuning capacitor, a ferrite core coil, and a transistor. Not a single resistor, capacitor or anything else other than a 1.5v battery, and clips for antenna, ground, and headphones! It did have a socket for the transistor so you didn't have to solder it in! Asking price was $49. It didn't sell.

Artone Two Tube Radio Kit – 40s

Here's another interesting radio kit from the 1940s. It's an Artone 'Radio Kit' two tube set. It's hard to tell from what was posted whether it is a regen or a grid leak detector radio with an RF amp stage., but that is my guess – grid leak. "New" in the box with all the original parts and assembly diagram.

The paperwork shows it was distributed by Affiliated Retailers, in NYC. In another place, the documentation says “Electro Kit #1 “ . It used the common 45v B battery and a flashlight battery for the filament for the two tubes. It looks like a grid leak detector as there is no gain control and only what appears to be two windings on the coil – an antenna input coupling winding and the main tuning winding – but it is hard to tell from the layout diagram which just shows the parts laid out and the wiring – but no schematic and no way to know which wire goes to which pin on the tubes (they are pre attached when you get the kit).

With the typical drain of the tubes and a carbon based dry cell of the day, you'd probably get 10-15 hours of listening out of the radio before you need a new 'flashlight battery'. The B battery would last for hundreds of hours. I suspect most kids would put this together and tire of it after a few listening sessions.

More Books on Line

You can find some of the old ARRL Handbooks and many other technical books for download here

http://tinyurl.com/bsocwdb

North American QSO Party

It was a quiet weekend in Texas. I noted on the WA7BNM contest listing site that the North American CW QSO PARTY was scheduled in early January. No mobiles were out running so I took a few hours and chased a few stations to put about 100 in the log. I'm not a big contester and don't sit calling CQ for long. I'm a search and pounce type operator for these events.

I needed 2 in AK for the next time around and caught KL7RA in the 3rd AK. On at the same time was KL8DX from the 4th. KH6DD was on from Hawaii HI. I noted one HI station making it through. 15M was good, but the skip took me to the same places far away in the Northwest....and not many were on or heard from New England, which is now mostly 'needed' as there hasn't been much CW activity up that way. I caught just about all the Canadian provinces – but missed nearly all of New England and the entire middle of the country. It runs till the wee hours of the morning but I pooped out early.

I noted that other county hunters were in the NAQP, plus a lot of the state QSO party folks

show up as well. You could also work a little DX as 'North America' includes the Caribbean. I added a few new counties to the next time around. I'm sure others managed to work several hundred in the short contest time event.

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Then it was time for the SSB North American QSO Party. I didn't participate – had the radio on CW chasing mobiles (few) while I watched the spots go by on SSB.

Hollis, KC3X, Ed, N8OYY, K8QWY, WQ7A, were spotting stations. Looks like it was busy with KL7DX (4th AK) and other AK and HI counties on the air for the event on SSB plus ten thousand others. The phone bands were filled end to end and with no mobiles running on 20M SSB most of the day, the contesters moved in on the 20m net freq.

Hybrid Air Car

Peugeot Citroen unveil new 117mpg hybrid

French car giant PSA Peugeot Citroen believes it can put an air-powered vehicle on the road by 2016.

Its scientists say it will knock 45 per cent off fuel bills for an average motorist. And when driving in towns and cities costs could be slashed by as much as 80 per cent because the car will be running on air for four-fifths of the time.

The system works by using a normal internal combustion engine, special hydraulics and an adapted gearbox along with compressed air cylinders that store and release energy. This enables it to run on petrol or air, or a combination of the two.

Air power would be used solely for city use, automatically activated below 43mph and available for '60 to 80 per cent of the time in city driving'. By 2020, the cars could be achieving an average of 117 miles a gallon, the company predicts.

The air compression system can re-use all the energy normally lost when slowing down and braking. The motor and a pump are in the engine bay, fed by a compressed air tank underneath the car, running parallel to the exhaust.

The revolutionary new 'Hybrid Air' engine system – the first to combine petrol with compressed air – is a breakthrough for hybrid cars because expensive batteries will no longer be needed.

Cars fitted with Hybrid Air will be about £1,000 cheaper to buy than current hybrid models.

For more than two years, 100 elite scientists and engineers have been working on the air-powered car in top-secret conditions at Peugeot's research and development centre at Velizy, just south of Paris.

Hybrid Air is the centrepiece of Peugeot chief executive Philippe Varin's efforts to restore the fortunes of the historic car maker.

The revolutionary system will be able to be installed on any normal family car without altering its external shape or size or reducing the boot size, provided the spare wheel is not stored there. From the outside, an air-powered car will look identical to a conventional vehicle.

A spokesman said: 'We are not talking about weird and wacky machines. These are going to be in everyday cars.'

Motorists never run the risk of running out of compressed air late at night on a deserted country road because the car will be fitted with a sophisticated artificial brain that ensures it replenishes itself automatically.

The air compresses and decompresses of its own accord as the car speeds up and slows down.

Read more: http://www.dailymail.co.uk/news/article-2266632/Peugeot-Citroen-Coming-soon-car-runs-air.html#ixzz2IoNvOv49

Morse Code in the Movies

Producer Steven Spielberg has used Amateur Radio or Morse code in three of his last four movies: Super 8 (2011), The Adventures of Tin Tin (2011) and Lincoln (2012). Members of the Morse Telegraph Club (MTC) -- an association of retired railroad and commercial telegraphers, historians, radio amateurs and others with an interest in the history and traditions of telegraphy and the telegraph industry -- played an integral part in the production of Lincoln.

According to International President of the Morse Telegraph Club James Wades, WB8SIW, several MTC members -- including Tom Perera, W1TP; Derek Cohn, WB0TUA; Kevin Saville, N7JKD, and Roger Reinke -- provided telegraph instruments to equip the 16 operating positions portrayed at the War Department set. Jim Wilson, K4BAV, and his son Matt had roles as extras. Wilson also worked with production staff and the actors to explain telegraph technology and the role of the telegrapher in the 1860s.

“Nine of the 16 telegraph positions depicted in the War Department were fully operational,” Wades said. “These instruments could be operated in any combination through the use of a specialized computer program and custom built terminal units for the process. When necessary, a hand key could be inserted in the individual telegraph loops so messages could be improvised.”

Wades, who was employed as a Technical Advisor for the production, worked with set designers over a period of months to develop the War Department telegraph scenes, coordinating the process of procuring the necessary instruments and serving as an historical consultant as the telegraph scenes were developed. He also worked the producers to develop historically appropriate message traffic that fit the sequence of the script; however, as the movie was edited, he explained that the final product evolved into a more generic facsimile of Morse traffic. “Those with a background in landline telegraphy will hear the occasional snippet of message traffic in the audio track of the movie,” he said. “We are very pleased that Mr Spielberg and his staff took the time to treat the telegraph with dignity and respect. It is a pleasure to be associated with a high quality motion picture that can genuinely be classified as not just entertainment, but as a work of art.”

Courtesy ARRL Letter – Nov 27, 2013

Here's a short video of how they brought in an expert to make it as realistic as possible.

http://www.timesdispatch.com/multimedia/video/public-square-behind-the-scenes-of-lincoln-of/video_64159546-2e11-11e2-bce9-0019bb30f31a.html

from WB8SIW: “If you look carefully, you will see a standard relay on the desk, which, by the way was fully operational as were most of the instruments in the movie. There is also a humorous story behind the Barclay relay. Originally, I had installed Civil War era telegraph

instruments at that location on the set, as I had anticipated it would be the preferred angle for shooting the scene. However, I was asked to move them during set construction. Making a long story short, when Spielberg showed up to shoot, of course, he selected the originally anticipated location. I had only five or ten minutes to make a change, so a spare Barclay relay was pressed into service as a last minute measure. Sometimes, done is better than perfect. The scenes were shot with real American Morse Code. Authentic messages with a proper preamble and script appropriate texts were developed to fit the script. These were transmitted on cue during filming. However, after the movie went through re-mix and audio post production, much of the Morse was "mixed" so that it sounds authentic, but the intelligence contained is limited. However, if one is a fairly competent land-line Morse operator, there are sections of intelligible American Morse Code in the movie. The instruments were loaned by members of the ***Morse Telegraph Club f***rom private collections. As Civil War instruments are difficult to obtain, we strived to locate those that approximated the correct appearance and which dated as close as possible to that era. In particular camel back keys and similar instruments were preferred. Instruments were wired to a location off camera at which specialized computer software and custom made terminal units could operate any number of up to nine instruments on the set. A hand key could also be plugged in to send the Morse by hand when needed. There's a whole story behind the Morse in the movie involving months of planning, constructing special devices, animating the instruments so they were fully operational, creating facsimiles of early code books and messages, and the like. It's far too long to cover here. I hope that helps. 73, Jim, WB8SIW "

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In July 2011, advertisements in newspapers, especially in the Richmond area, announced they were looking for extras for the "Lincoln" movie, said Jim Wilson, who lives in North Garden. "Matt and I drove down there and found a line about three blocks long of people wanting to be in the film. We were thinking our chances weren't very good," he said. "We had to fill out a form about ourselves, and one of the questions asked if we had any special talents.

"We put down that we were Civil War telegraph operators."

Jim Wilson is the longtime editor of Dots & Dashes, the official publication of the Morse Telegraph Club Inc. For years, he and his son have participated in Civil War re-enactments as telegraph operators of the period.

"Usually, when people hear we're telegraph operators, their eyes glaze over — but this time, boy, did they perk up," Jim Wilson said with a smile. "It was like, 'What? We found somebody who knows something about Morse code and the telegraph in the 1800s?'

"They immediately wanted us to be technical consultants and put together a class for the actors who would be portraying the operators. We did that, and on Oct. 17, 2011, in Mechanicsville, we taught about 30 people about things like how to hold the telegraph key.

“And we showed them how to send the original American Morse code, not the international Morse code that was introduced later.”

The two types of code are similar, but the international version became the gold standard, because it was simpler and more exact. It takes considerable time and practice to learn the code and be able to send and receive it at a reasonable speed.

The main telegraph operator in the film was brought down from a stage play he was doing on Broadway, said Jim Wilson, a Vietnam veteran who taught Morse code while serving in the Army.

“They had him there for three days and, in that time, we were supposed to teach him Morse code. It usually takes months to become proficient at it, but he asked to borrow our telegraph key and sounder overnight.

“When he came back the next day, he had that particular message memorized and could send it perfectly.”

“The railroads stopped using Morse code in the 1960s,” said Jim Wilson, who worked for 31 years as a city planner in Alexandria. “Several years ago, the Boy Scouts stopped giving a merit badge for it but, once in a while, they still show an interest in it.

Both Wilsons appear in the “Lincoln” movie, most of which was filmed in Richmond and Petersburg. The father is seen as a businessman, and the son portrays a telegraph operator. The father-son team provided Spielberg with exact information on what Lincoln’s telegraph office looked like. It was two blocks from the White House and became one of the president’s favorite haunts.

Jim Wilson said it is his understanding that Lincoln wrote the draft for the Emancipation Proclamation in the telegraph office and not at the White House.

“As a potential Spielberg classic,” said Matt Wilson, “I assumed ‘Lincoln’ would also be an important historical chronicle, so it was important to get it right.

“Being meticulous and scrutinizing, even in our small role, felt like a meaningful contribution to telling history with accuracy.”

Source: Richmond Times Dispatch.

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The Morse Telegraph Club was founded in 1943 to perpetuate the knowledge, history and traditions of telegraphy. Chapters are located throughout the United States and Canada. Members are actively involved in a variety of projects including presenting talks on the history of telegraphy to historical societies, schools, and Amateur Radio organizations. Chapters throughout the US and Canada have worked with public museums to build historically correct telegraph exhibits. Members also regularly demonstrate telegraphy at historical events throughout North America.

http://www.morsetelegraphclub.org/

Biofuel Climate Pollution?

Green schemes to fight climate change by producing more bio-fuels could actually worsen a little-known type of air pollution and cause almost 1,400 premature deaths a year in Europe by 2020, a study showed on Sunday.

"Growing biofuels is thought to be a good thing because it reduces the amount of carbon dioxide in the atmosphere," said Nick Hewitt, who worked on the study with colleagues from England's Lancaster University.

"What we're saying is 'yes, that's great, but biofuels could also have a detrimental effect on air quality'," he added.

Hewitt told Reuters there would be a similar impact wherever biofuels were produced in large quantities in areas suffering air pollution, including the United States and China.

Poplar, willow or eucalyptus trees, all used as fast-growing sources of renewable wood fuel, emit high levels of the chemical isoprene as they grow, the study said. Isoprene forms toxic ozone when mixed with other air pollutants in sunlight.

"Large-scale production of biofuels in Europe would have small but significant effects on human mortality and crop yields," said Hewitt.

"As far as we know, no one has looked at the air quality of growing biofuel crops before," he added.

The report estimated that ozone from wood-based energy to meet the European Union's 2020 goal would cause nearly 1,400 premature deaths a year, costing society $7.1 billion.

The European plan would also would reduce the annual value of wheat and maize production by $1.5 billion since ozone impairs crop growth, the study added.

Biofuels are often blamed for causing food price spikes by competing for cropland. Responding to such criticisms, the European Commission said last year it aimed to limit crop-based biofuels - such as from maize or sugar - to five percent of transport fuels.

Source: http://www.reuters.com/article/2013/01/07/us-climate-biofuels-idUSBRE90601A20130107

All Time Record Number of Hams

From ARRL Letter, Jan 18, 2013

As 2012 came to a close, ARRL VEC Manager Maria Somma, AB1FM, had a good reason to cheer: The number of radio amateurs in the US reached an all-time high of almost 710,000. “2012 was definitely a banner year for the number of Amateur Radio operators here in the US,” she said. “It is amazing to see these new numbers and to know that Amateur Radio is experiencing such a healthy trend.”

In looking at new and upgraded licenses, as well as licensees per ARRL Division (see the charts below), Somma also crunched the numbers looking for growth within each license class -- and all of Amateur Radio -- over the last 40 years. “This is an all-time high for Technician, General and Amateur Extra class licensees,” she said. “When looking at the three current license classes, the number of Technicians, Generals and Amateur Extras peaked in December at 345,369, 163,370 and 130,736, respectively.”

Somma explained that the total number of US amateurs in the FCC database also continues to grow each year: “As of December 31, 2012, the number of licensees reached an all-time high of 709,575; year-end totals were 702,056 for 2011 and 696,041 for 2010. The number of licensees increased at an average rate of 21 per day, while the number of US licensees has

increased by 7 percent since 2008!" More than 3000 new licenses were issued in 2012 than in 2011, while upgraded license activity remained steady in 2012.

In the past 40 years, the number of Amateur Radio operators in the US has grown at a remarkable rate:

December 1971: 285,000
December 1981: 433,000
December 1991: 494,000
December 2001: 683,000
December 2012: 709,500

Source: 1971, 1981, 1991: print editions of Radio Amateur Callbook. 2001, 2012: www.ah0a.org/FCC/Graphs.html. Please note: While the number of licensees has grown considerably over the years, we realize that these numbers include some who are no longer active in Amateur Radio. A recent survey of ARRL members, however, indicates that more than 80 percent of those responding are active.

ARRL VEC Program Statistics

The ARRL VEC is by far the largest of the 14 Volunteer Examiner Coordinator (VEC) groups in the country, coordinating approximately 70 percent of all Amateur Radio exams. "When looking at the statistics over the last year, the ARRL VEC sponsored exam sessions and exam elements taken were up in 2012, which is a good sign for Amateur Radio overall," Somma said. "Compared with 2011, ARRL VEC exam sessions in 2012 were up by 8 percent. A total of 6831 exam sessions were administered in 2012, compared to 6352 in 2011. Exam elements were slightly up from 41,096 last year, to 42,473 this year. The total number of accredited ARRL Volunteer Examiners (VEs) has reached an all-time high of 36,682. The ARRL VEC has been busy meeting the needs of the Amateur Radio community by helping people become radio amateurs or upgrade their existing licenses. 2012 was a very good year for Amateur Radio -- I can't wait to see what 2013 brings!

Liberal Media Censorship

(NaturalNews) The reports are absolutely true. Facebook suspended the Natural News account

earlier today after we posted an historical quote from Mohandas Gandhi. The quote reads:

"Among the many misdeeds of British rule in India, history will look upon the Act depriving a whole nation of arms as the blackest." - Mohandas Gandhi, an Autobiography, page 446.

This historical quote was apparently too much for Facebook's censors to bear. They suspended our account and gave us a "final warning" that one more violation of their so-called "community guidelines" would result in our account being permanently deactivated.

Logic is an enemy and history is a menace

That Facebook would choose to disable our account after we posted a Gandhi quote is incredibly shocking. The historical rise of oppressed Indian people against tyrannical British rule is apparently no longer allowed to be discussed on Facebook. The very IDEA of a free people overcoming tyrannical government rule now "violates community guidelines." The removal of this content is akin to online book burning and the destruction of history.

This post was not in any way malicious, nor encouraging violence, nor even describing guns or the Second Amendment. It merely reflected the words of one of our world's most celebrated rebel leaders who helped an entire nation throw off the shackles of oppression and British occupation. That Facebook would find this to "violate community guidelines" is nothing short of absolutely bewildering.

We have entered the era of the Ministry of Truth from George Orwell's 1984 novel. And while Facebook assaults the First Amendment in America, Senator Feinstein is busy assaulting the Second

What's especially alarming about all this is that Gandhi himself was of course a champion of resistance against tyranny. To banish quotes from Gandhi is much like banning quotes of freedom from Martin Luther King (who also openly supported concealed firearms, by the way, and who personally owned an entire "arsenal" of firearms).

What's next? Will Facebook ban quotes by Thomas Jefferson and George Washington? Any and all patriots, founding fathers and liberty lovers throughout history might soon be stricken from the Facebook servers, and any who dare to post historical quotes supporting liberty, the Bill of Rights, or the Second Amendment risk having their accounts terminated and all content deleted.

Collectivist propaganda has now reached a point where you can't even discuss liberty or anything out of history that supported the right to keep and bear arms. You are required to stay focused solely on celebrity gossip, sports stars, fashion distractions and tabloid garbage. Anyone who wishes to discuss actual American history must now go underground and speak softly in dimly-lit rooms, behind secret walls and drawn curtains.

The era of total oppression and collectivist mind control has fully arrived in America. This is not hyperbole... IT IS HERE NOW.

On the Regen Trail

This month after the holiday season, some new regens showed upon Ebay.

1) Philmore Regen

Ah...another Philmore regen receiver sneaks onto Ebay and escapes all my routine searches. However, I still tracked it down. There's over 10,000 receivers for sale on eBay at any time. Here's a picture of it.

Philmore One Tube Regen Set

Listed as:

VINTAGE 1930's or 40's Philmore Receiver with Phono connection

He plugged it in and 'it does not work' (duh! 70 year old caps) .Looking at the back view, it has two tubes (one a rectifier) and a plug in coil. Looks like 1 tube regen receiver. Someone built a nice wood box for it. That 'phono' connection fools a lot of folks. It's actually for earphones. I don't know where he was expecting the sound to come from ! Way back when, rather than a 1/4 inch jack for headphones like on many rigs of the 70s, 80s and 90s.....the headphone jacks were 'pin jacks'. This one covered only the broadcast band. No plug in coils.

2) Crystal Clear Regen

Here's another one that sold on Ebay for $60 plus $30 shipping. Ouch. It's a used but newly made one offered by Crystal Clear who sells new one tube regens , nicely made, on Ebay - for over $150 each.

This one uses a 1625 tube (a 12v version of the 807 transmitter tube). It uses the 12v as the plate voltage too...by putting the tube into the 'space charge' mode. That means usually the cathode can put out lots of electrons. The 807 type tube is a transmitting tube and at 6..3 volts it takes 900ma to light it up. The 1625 takes about half that current at 12 v.

Here's a link to an article on space charge tubes. (low plate voltage tubes – like 12-18v)

http://www.junkbox.com/electronics/lowvoltagetubes.shtml

Manufacturers worked to develop 12v car radios back in thelate 50s and early 60s before transistors were able to operate well at RF frequencies. There were a whole series of tubes made for car radios and similar applications. To get a decent operation, the filaments took a lot of power to emit lots of electrons. The space charge tubes operated with 12v on the plates.

3) Sargent Model 10 Receiver - Regen

Sargent was an Oakland, California based company. This radio was made about 1935-1936 and used five tubes to cover the Broadcast band and up to 20 MHz. It used a 6D6, 6C6, 76, 42 and type 80 rectifier tube. It was bandswitched.

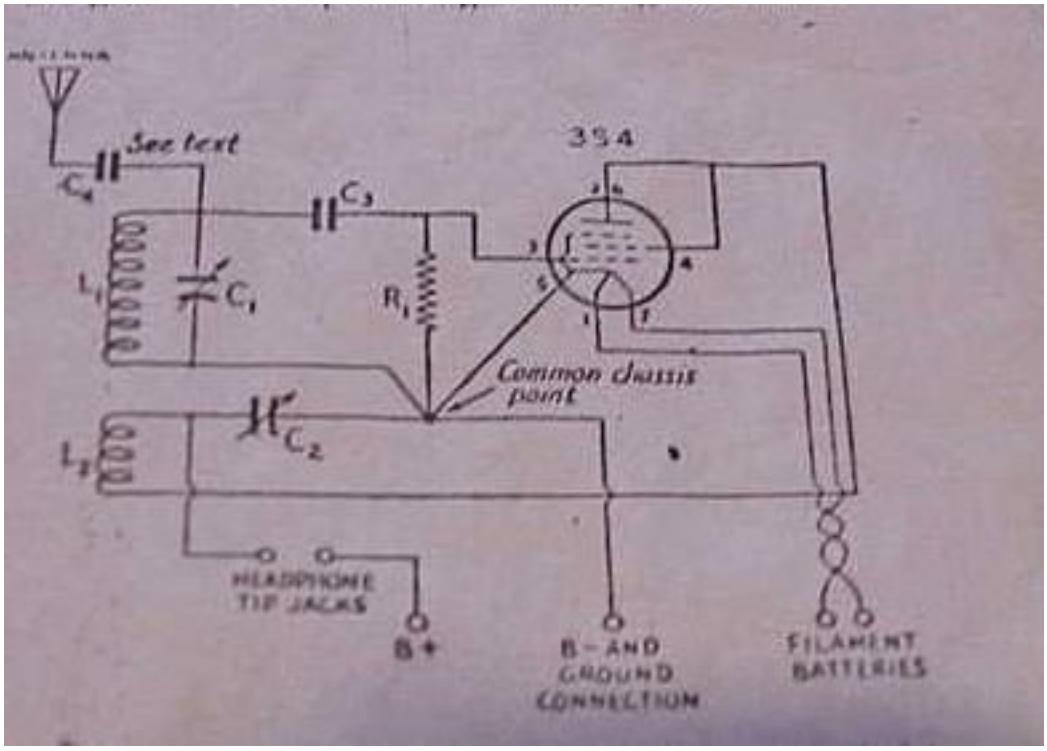
4) An old ARRL Handbook style receiver – 1950s

Here's a homebrewed receiver from the 1950s or early 1960s in the How to Become an Amateur Radio Operator – likely showed up on the Scout merit badge books, too. It's a regen – note the feedback arrangement.

Handbook Homebrewed Receiver

This is a single stage 3S4 tube circuit – a pentode tube that ran off two flashlight batteries for the filament and a 45v battery for plate voltage. Now five 9v batteries in series will work fine. It's almost impossible to find the old single 45 or 67.5v batteries from way back, and if you do , you pay and pay to get one.

Here's the schematic



It doesn't get much simpler. One tuning cap, one cap used for regen control, one trimmer for the antenna, one resistor and one fixed cap. It did feature a plug in coil so you could change to 80M as the one pictured appears to be for 40M.

Later, the handbook featured a one tube set with a 6SN7 dual triode – with one section providing some audio amplification.

County Hunter Database Project

This month, additions were received from Joyce N9STL, Mike, NF0N, Terry, WQ7A, N4CD, Jimmy K4YFH, Jack, KC7YE, and Mary, AB7NK sent in some pics from AA4S, It's up over 800 counties in the database now. More than 1/4 done.

Here's a picture Mike, NF0N sent in

NF0N Hand County Line, SD

Here's one Mary AB7NK sent in – showing the mobile

AB7NK/K7SEN – Valencia NM

Gary has now added the number of counties in each state, so you can see how many of the counties now have pictures for the county line. Alaska and Delaware are finished. TX has 168 of 254 counties done. Some states like NJ and CT have ZERO.

Here's the site where they are all listed

http://www.charchive.com/cntys.asp

In checking on the states – so far no one has submitted a picture of a county sign for New Jersey. Not a one! That needs some attention! There's got to be some places where you can get pics of the signs. Most of NJ is more concerned with Boroughs than Counties – but there have to be some signs to snap. VT and NH is not good. Texas is 2/3rds done despite having 254 counties. None yet up for CT, and Ca looks pretty sick at only 9 counties up so far.

Florida only has 8 done so far – lots of room there for additions and it's warm down there with no snow to stop mobiles from going out.

Gary, K4EXT, may still have some backlog to do, so more will be appearing, but it looks like we need another 2000 plus signs to get them all there!

About those CFL "Green Bulbs"

Every time you turn on the lights, you may be putting yourself at risk, according to a disturbing new study.

Energy efficient bulbs are eco-friendly and can save you big bucks, but experts say that some could also have a dark side.

"When there is something in your house, you don't perceive any danger, you wouldn't get that close to an x-ray in a doctor's office," explained Miriam Rafailovich, Professor of Materials Science at Stony Brook University in New York.

Money saving, compact fluorescent light bulbs emit high levels of ultra violet radiation, according to a new study. Research at Long Island's Stony Brook found that the bulbs emit rays

so strong that they can actually burn skin and skin cells.

“The results were that you could actually initiate cell death,” said Marcia Simon, a Professor of Dermatology.

Exposure to the bulbs could lead to premature aging and skin cancer, according to doctors.
“It can also cause skin cancer in the deadliest for, and that’s melanoma,” said Dr. Rebecca Tung.
In every bulb that researchers tested they found that the protective coating around the light creating ‘phosphor’ was cracked, allowing dangerous ultraviolet rays to escape.
Homeowners expressed concern over the effect that the bulbs could have on children.
“That’s very unfortunate because the kids are getting exposed to so many different things at a younger age,” said Vicky Cobb.

As the federal government phases out the old incandescent bulbs in favor of more efficient bulbs like compact fluorescents, CFCs are among the choices of which bulb they use.
“Now that you’re telling me there’s a health risk, I really don’t think it’s fair that they would not sell the other kind of light bulbs,” said Cobb.

The compact fluorescent industry claims that the bulbs are safe, but admitted that they emit ultraviolet rays. The industry released a statement that said “the levels of UV radiation emitted are acceptably low,” and that they are safe under normal use.

Stony Brook researches advised that customers exercise caution and stay two feet away from the bulbs at all times, while storing them in an overhead fixture or lamp.

Watch video: http://miami.cbslocal.com/2013/01/02/study-eco-friendly-light-bulbs-may-put-health-at-risk/#.UOg0OltAG4A.twitter

Selenium Rectifiers

Selenium rectifers are often found in TV, test, and ham equipment made in the 1940s and 1950s and to the late 1960s. If you are renovating the equipment, the rectifiers should be replaced.

Selenium is a gray material discovered by a Swedish scientist in 1817. By 1820, a German physicist discovered that a sandwich of one layer against another would only conduct current in

one direction.

After WW2, both Germany and the US started making rectifiers by evaporating selenium on aluminum or steel places for use in electronic equipment in large numbers.

The selenium rectifier was invented in 1933. They were used to replace vacuum tube rectifiers in power supplies for electronic equipment, and in high current battery charger applications. They were not used in the AC/DC consumer sets that ran directly off the line voltage. There, the extra filament voltage (typically 25 or 35v, like in the 35W4 common rectifier) was used to add up to 117v a/c and no power transformer was needed. They appeared in equipment with a power transformer.

This provided much better efficiency, and two small selenium rectifiers could replace a type 80 or 5Y3 tube. Since each 'stack' of the rectifier will handle 25-30 volts, you'll typically find five or six plates in a rectifier tor 120v rms.

Typical Selenium Rectifier for 121VAC

For a tube like the 5Y3 rectifier, it took 5v at 2 amps to light the filament. In a small hi-fi amplifier, higher quality receiver, or piece of test equipment, that was an extra 10w that the power transformer had to deliver, ratcheting up cost even more with a tube. Plus, of course, there was more heat to get rid of in the cabinet. A tube rectifier normally had about a 25-30v drop across it, too! More heat to get rid of, and it was one of the the most often tubes in radios to go 'kaput'. (toss up between the rectifier and the audio output tube). A new type 80 tube will set you back $18-$20 these days too.

Selenium rectifiers are made from stacks of aluminum or steel plates coated with about 1 μm of

bismuth or nickel. A much thicker layer of selenium (50 to 60 μm) which has been doped with a halogen is deposited on top of the thin metal plating. The selenium is then converted into polycrystalline gray (hexagonal) form by annealing. Each plate is able to withstand about 20-30 volts in the reverse direction. The metal squares, or disks, also serve as heat sinks in addition to providing a mounting place for the selenium disks. Plates can be stacked indefinitely to withstand higher voltages. Stacks of thousands of miniature selenium disks have been used as high voltage rectifiers in television sets and photocopy machines.

What were some of the other advantages of selenium rectifiers? They were typically smaller than the tubes they replaced. Since they had a long life, you did not need a socket for them. Selenium is self healing. A voltage spike might zap the selenium film, but it would self heal. The voltage drop was 5-10v vs 10-20-30v for a tube, thus you had higher B+ voltage.

So why did selenium disappear after the mid 1960s in new designs? The arrival of the silicon diode did them in. A silicon diode might have a 1v drop vs 5-10 for selenium. It was much smaller, taking up less room, and cost less to make. Selenium is a 'trace element' and in large quantities is toxic. It's disposal is regulated by the EPA.

The other major disadvantage of selenium is that they age. As they get old, the forward voltage drop increases – thus giving poorer performance from the unit. The reverse leakage also goes up. They can also fail catastrophically from overheating. As they get older, they can catch fire, and the smoke is incredibly foul smelling (and toxic).

If you want a replacement for a selenium, they are available new from overseas, but expect to pay $35 or more for one. You can sometimes find 'new old stock' but they are 40-50-60 years old and likely have already begun the aging process and likely to fail quickly if used.

By 1970s, silicon diodes costs only pennies and took up $1/10^{th}$ the room of the selenium rectifier.

As a general guide, seleniums could handle about 100ma per 'inch' of plate area and were available up to 250ma typically. A small test equipment unit might only have a 1/2 inch one for the few milliamps required. Above 250ma, radios still used high current rectifier tubes until the silicon diode took over.

If you have a boatanchor with a selenium rectifier, YOU SHOULD REPLACE IT. It is only a matter of time until it fails, and when it does, it could catch fire, and definitely will put out incredibly horrible smoke (toxic).

If you are going to replace it, replace it with a 1N4007 – 1000PIV diode (7c apiece at a hamfest) and a series resistor. The value of the resistor should be such that it drops about 10 volts at the current drain of the unit. This is for 3 reasons.

First, you want the B+ voltage to remain about the same. If you leave out the resistor, the B+ voltage will rise another 10v, stressing other parts in the radio above its design limit. Remember, most of the 40s and 50s radios were made for 117V ac and now we have 121v as standard, with many homes at 125v. Each section (plate) of the selenium dropped from 1.5v to 2.0 v.

Second, the old seleniums had some 'surge protection' with the higher internal resistance. Silicon diodes have next to none, so putting in a series resistor gives you some surge protection when power is first turned on and you charge up those electrolytic caps, saving your power transformer and maybe keeping the fuse from blowing each time.

Start with 100 ohms and check the voltage to see if it lies within the spec for the unit – on the voltage test guide. You might need between 20 and 200 ohms typically to have the same B+ as before.

Be sure to calculate the power dissipated in the resistor and use on at least 3 times over that.

It's best to remove the old rectifier and use a small terminal strip to mount the diode and series resistor.

Of course, when you're working on an old boat anchor, replace the electrolytic capacitors at the same time! Consider it a 'power supply upgrade'. If your radio has no line fuse, consider putting one in under the chassis.

Some units had two seleniums in a full wave rectifier. Here, you would use two diodes and two resistors. In some TV sets, they used seleniums in a voltage doubler circuit. Those, too, can easily be replaced should you be into old TV sets.

Seleniums also came in a bridge configuration – typically in battery chargers. They can simply be replaced by a silicon diode bridge rectifier. Heatsink them for higher currents.

Now – if you are looking at replacing seleniums in battery chargers – be careful of the power dissipation. You will need to heat sink the silicon bridge rectifier possibly.

Also, if you go to replace the selenium in some 3 way power radios (AC/DC/Battery) be very careful. The Zenith radio ran the tube filaments off the DC. You want to be sure your series resistor is large enough in the Zenith and other AC/DC radios so that you don't fry the filaments. Those 1.5v tubes don't like anything over 1.5v. If you are doing one of these, start with a high series resistor, like 300 ohms, then check the voltage across the filament of the tube. Do not exceed 1.5v at full line voltage.

Here's a good video showing WHY you should replace those seleniums!

http://www.youtube.com/watch?v=zU8C5p7CQ_c

What's amazing is that there are at least 100 selenium rectifiers, either 'new old stock' or 'used' on Ebay at any given time. Why anyone would buy one of these, other than if you are trying to 'restore' a unit to the appearance of 40-50 years ago, is beyond me. You surely wouldn't want to be using a replacement in an operating radio.

The same is true for 'new old stock' electrolytics.

Something we didn't mention last issue. The first power supply electrolytics were 'wet'. They contained the electrolyte in liquid form, and had to be mounted upright in the radio. Most of them screwed into the chassis. After 30-40-50 years they leaked and you see crud oozing out. Later they went to 'dry' electrolytics that had a paste between the plates. Those could be mounted in any position, including under the chassis. If you've got a 60 year old radio, it's best to spend a few bucks to buy brand new caps and replace the old ones.

That Green Agenda Hoaxism

by Holman W Jenkins

When the National Oceanic and Atmospheric Administration says 2012 was the hottest year on record in the "contiguous United States," trust the media to transcribe the statement accurately. A disaster for public understanding begins only when the media stop transcribing and start using their own brains.

Said the New York Times climate blog, in an assertion that was echoed throughout the media: "The temperature differences between years are usually measured in fractions of a degree, but 2012 blew away the previous record, set in 1998, by a full degree Fahrenheit."

Really? If that were true, then hair-on-fire news should have been the fact that 2012 was 2.13 degrees hotter than 2011. That's a far more dramatic change, and in a single year.

Nor was it mentioned that 2008, in the contiguous U.S., was two degrees cooler than 2006. Or that 2000, 2002, 2003, 2004, 2008, 2009, 2010 and 2011 were all cooler than 1998 by a larger margin than 2012 was hotter than 1998.

Are you getting the picture? None of this was mentioned because it makes a mockery of using trends in the Lower 48 as a proxy for global warming, the misguided intent that permeated media coverage of the NOAA revelation.

The contiguous United States isn't the globe. It isn't even the United States, omitting Alaska and Hawaii. The Lower 48 represent just 1.58% of the total surface area of the Earth. The law of large numbers is at work here: The smaller the sample, the more volatile its patterns compared to a larger sample. And the fact remains, in all the authoritative studies, the warmest year on record globally is still 1998 and no trend has been apparent globally since then.

Until this week, the media's previous favorite way to evade this reality was to report, as a joint CBS/New York Times broadcast did on a recent Sunday morning, that the past decade was the "hottest decade ever recorded."

Uh huh. Because year-to-year changes in global (as opposed to contiguous U.S.) temperature are indeed teensy, it would be astonishing if the decade following the warmest year on record were not the warmest decade on record. But the appeal of this formulation is that it allows the media to talk about global warming in our time without mentioning that, ahem, global warming has ceased in our time.

Is climate warming getting ready to resume? Possibly. Is man's contribution to climate change significant and worth worrying about? Possibly. But climate change and gun control have one thing in common. Their advocates are more interested in asserting their moral superiority and denouncing their "enemies" than in making progress, which explains why there has been no progress.

Al Gore is a perfect case in point. He unburdened himself of a remarkable self-delusion in a talk last month to the New York League of Conservation Voters, claiming a nefarious cabal of "carbon polluters" and "ideologues" in Congress were blocking change.

Yet had he and his fellow activists been less sanctimonious, less prone to self-discrediting hysteria and false assertions about global warming, their cause might be seizing the high ground right now.

WSJ- 1/11/2013

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de N4CD

What he fails to mention is that the US has reduced carbon output by 30% since 1990, while Europe, with their massive carbon tax scheme, is actually putting out 10% more than it did in 1990. The US free enterprise system came up with lower cost energy savings methods, had more flexibility to implement them, had no massive carbon tax burdens to get in the way of new investments in energy savings. We made better use of our Natural Gas reserves to reduce the need for burning coal.

So while socialist 'planned' economies with massive carbon tax schemes barely eeked along in growth, have 10-25% unemployment, failing enterprises propped up by massive government schemes, the US is chugging along emitting less and less carbon per year, with lower unemployment,with more opportunities to start new ventures, come up with better energy saving products, and be more responsible world citizens. It's obvious. Socialism always fails compared to free enterprise.

Obama is still planning on sticking you with carbon taxes via one set of 'regulations' and Executive orders or another. He needs the money for the welfare weenies and queenies. Likely they'll use the dual excuse of 'cars get better mileage so we need highway building money' and 'it will be used to create jobs'.

Liberals never end their tax and tax and tax and spend programs and calls for new taxes and taxes and taxes.

E.F. Johnson Transmitters

It seems each time you go to a hamfest, there are several/lots of one particular manufacturer units for sale. Some times it seems to be Swan Radio. Other times, there's two dozen Heath kit rigs, while the next hamfest might have 3 or 4 EICO units for sale. Last year at Dayton, there must have been 15 Clegg Lab VHF rigs from the 60s for sale. Some hamfests are overloaded with Kenwood or Yaesu.

In mid January I headed over to Fort Worth, TX for the Cowtown hamfest. There weren't many county hunters there – just saw KK5NA there. There's no program either than flea market mostly inside, with a few brave souls outside. It can be anywhere from 20 deg to a nice 70 F at this time of year in TX. Several hundred folks show up for the 1 1/2 day event.

This year I actually got a table and sold some of the surplus goodies that have followed me home from some of the ham auctions. Stuff tends to accumulate and all those project radios you thought about getting going somehow just collect even more dust, so it was time to reduce the amount of clutter by a bit. I've still got way way too much junque though.

At the Cowtown event, there were several of the E.F. Johnson radios. These were made in MN, and E.F. Johnson only made transmitters. Normally you only see one or two. So an article about them is appropriate.

The life of E.F. Johnson (1899 to 1991)

Edgar F Johnson was born on a farm in 1899 – the year that Marconi 'invented' wireless and showed the world it would work. A few years later, Johnson moved into Waseca where his father owned a hardware store and woodworking shop. When he was about 12, his brother Charlie strung up an outside antenna and played around with 'wireless' – the first exposure that Edgar got to the new technology. He decided to attend the University of MN and graduated with a degree in EE in 1921.

He then went into business selling transmitting parts to local enthusiasts and broadcast stations. Everything was 'hand made' back then, requiring machining and unique tools. He got some space in the woodworking shop of his father – rent free – that helped him get the fledgling business going. He sold parts and components 'mail order' all around the country. Broadcast radio was taking off. There were hundreds of stations that needed transmitter parts to get on the air. It took a few years, but he got his business going with the help of lots of family members. It was a small operation.

In 1936, Johnson built his first factory in Waseca – it employed 17 people. WW2 came along with the demand for parts and the business exploded with military contracts. By 1945, they employed over 500 people!

Naturally, at the end of the war, they looked for other lines of work. Many hams had requested kits, so by 1945, Johnson sold kits. Some wanted 'wired' radio, and some employees would take the kits home and assemble them after work hours, so Johnson could sell the 'wired' units!

Johnson stuck the transmitter business – that is what they had specialized during the war and they stayed true to that for more decades. They only sold transmitters to the ham market.

Johnson was a workaholic, but he treated his employees well, and resisted unionization. He was one of the first companies to introduce profit sharing. If you got a job with him, you got a job for life.

In 1958, the FCC created the class D Citizens Band. EF Johnson jumped in and had the lion's

share of business from 1958-1976 with the Messenger series radios. (folks still like them today). When the CB craze faded, Johnson moved into the cellular radio business.

In 1982, after resisting mergers , Johnson was finally sold to Western Union – another company that was now in major decline. Not long after WU sold to DEI, Inc. Johnson retired from the Board of Directors.

EF Johnson was in the two way radio business but only had a small market share against the two dominant players – Motorola and GE (now Ericsson). In 1995, they got into the APCO 25 police/fire system trunking business and the name is still in use – after having been resold another couple times to different business entities.

EF Johnson passed away in 1991.

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The E.F. Johnson Equipment for hams

The Johnson line of transmitters started with the Viking I in the 1949/50 timeframe, which was a 100W AM (Plate modulated), 115W CW transmitter. You would use an external VFO such as their model 240 or 122. The final was a 4D32 tube. It weighed about 70 lbs and could be rack mounted as well. Back then, it sold for $209 kit, $259 wired – and that was a lot of money back then. Minimum wage was way under a dollar an hour. Think how many hours you'd have to work to get one of these! Sold from 1949 to 1952.

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slight detour here

In 1950 the minimum wage was raised to $.75 per hour. Thereafter, it was raised several times (for example, in 1956 to $1.00, in 1963 to $1.25, and in 1968 to $1.60). In 1974, Congress passed a bill providing for a gradual increase from the prevailing $1.60 per hour to $2.30 per hour by 1976. The bill also extended minimum-wage rules to some 8 million workers not previously covered, including state and local government employees, most domestic workers, and some employees of chain stores. Additional increases raised the minimum wage to $3.10 per hour (1980), $4.25 (1991), and $5.15 (1997). Legislation passed in 2007 raised the minimum wage, in three stages, to $7.25 in 2009. Since 1989 businesses earning less than $500,000 annually have not been subject to minimum-wage rules. A number of states have minimum wages that are higher than the federal minimum wage. See also wages.

Source: www.infoplease.com

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Seems to me in 1964, for part time work, I was getting about 85c/hour – for 6 to 10 hours of work a week in college – hi hi. Got up to about $1.10 by 1967)

Even at a buck on hour...think how many months you'd work to afford those Johnson rigs!

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back to the story.....

TVI seemed to be a problem with the Viking I once TV sets proliferated after WW2, so they came out with a shielded version – the Viking II. It used a pair of 76146 tubes to produce 135w of AM and 180w input CW. Sales were from 1952 to 1957.

With the creation of the Novice class license, Johnson came out with the Adventurer – a 50w input rig that used an 807 tube – no modulator built in. It sold for $55 kit, $70 wired. You could buy an optional plug in modulator. It was sold from 1954 to 1963. Weight was 17 lb.

Johnson Adventurer

The Viking Challenger came out in 1959. This rig ran 70w AM and 120w CW with a pair of 6SQ6 sweep tubes. It had screen modulation. Sold until 1965. It weighed 24 lb. You had to use an external VFO with it. Price? $115 kit, $155 wired.

The Viking Navigator came out in 1958. It was a 40w cw rig with built in VFO. No AM capability. The price was $150 kit, $200 wired. Weight – 25 lbs.

Johnson came up with the Viking Mobile – it ran 40w AM – crystal control. You needed to use an external VFO if you wanted one. It was sold from 1952 to 1959. It took an external power supply and weighed 17 lb. I'm sure some county hunters got their start with this unit.

Johnson Mobile Transmitter

From 1954 to 1959, Johnson sold the Viking Ranger – a nice radio with built in VFO and power supply like all the fixed station equipment. It ran 65w AM, 70w CW input with a single 6146 tube. The price went from $179 kit to $230/ and $250 wired to $330 over that period. Weight? 45 lbs.

They improved it with the Ranger II from the 1961 to 1965 period. Price was $249 kit/$360 wired.

There was the Courier amplifier that matched the Ranger. It would run 200w peak on AM – input and 120w otherwise.

John Courier Amp

If you had more money to spend on ham radio gear, they had radios for every budget. The next rig up the ladder was the Viking Valiant I with 3 6145 tubes in the final stage running 200w of AM and 275w of CW input. VFO was built in , of course. Sold from 1956 to 1962. The modulator used a pair of 6146 tubes as well. It was a heavy unit weighing 73 pounds, and it would set you back $350 kit/$439 wired.

E F Johnson Viking Valiant

Here's some nice pictures on the Valiant from someone who restored one to pristine condition

http://johnsonradioresto.com/Viking_Valiant_Photos.html

That was followed by the Viking Valiant II – from 1962 to 1965 – for 375 kit, $495 wired.

If you had even more money for ham goodies, you could buy the Johnson Viking 500. This had an external power supply and both weighed in at 175 lbs. It ran 500w of plate modulated AM to a pair of 4-250s and later 4-400s, with a pair of 811s in the modulator. Timeframe was 1956-1963.

Johnson also sold a linear amp – called the Kilowatt Desk Amp. It was constructed such that you could made a desk out of it. The controls were on top of the large unit – desk high. It took 30W of drive (rf) and 10w of audio for 2-3 KW PEP input. Or 1KW input – AM/CW as well. It used two 4-400s in the output stage and two 810s in the modular. You needed a good floor to hold up the 400lbs, plus it costs $1600 back then. (they are still popular with the CB types if they can find one to buy!).

Johnson got on the SSB bandwagon with the Viking Pacemaker in 1959. It ran 90w input SSB, 35w of AM, and 90w of CW input. It used the phasing method of SSB generation. Othe output tube was a 6146. It came wired for $495 and weighed 61 lbs.

Next up was the Johnson Invader – 200W SSB/CW and 90w CW with a pair of 6146 tubes. It used crystal filter SSB generation. It sold for $650 wired from 1962-65.

To get to the KW level, Johnson had the kilowatt Thunderbolt amplifier. It weighed 400 lbs.

In the early 1960s, Johnson developed a transistor/tube SSB rig called the Johnson Avenger. It turned out that it would cost them $2000 to make them – when the KWM-2 was selling for $1100. It soured them on SSB and they never really got over that. They were gone from the business in the mid 60s. Only about 12 prototype Avengers were ever made. They are 'ultra rare'.

Johnson Avenger

Here's some pics from the EF Johnson Museum – I don't know if it is still around these days.

https://plus.google.com/photos/112953220987882592505/albums/5213772165477455825?banner=pwa

Johnson also made some VHF equipment, like the Johnson 6N2 transmitter – 50W AM and 80W cw on six and two meters, plus a matching KW VHF 6N2 Thunderbolt amplifier for it.

Johnson 6N2 VHF Transmitter

In addition, Johnson also made two still very popular Matchboxes (antenna tuners) – one rated for a KW of AM (4 KW peak) and one for the 100w AM type rigs. They are still sought after today.

Johnson Matchbox

New Citizens Band

RESTRUCTURING: FCC PROPOSES 3.5 GHZ CITIZENS BROADBAND SERVICE

First there was the old Class A and Class B Citizens radio of the 1940's. Then came 11 Meter Class D Citizens Radio Service in 1958. Next was the Family Radio Service authorized in the United States since 1996. That was followed in 2000 by MURS or the Multi Use Radio Service. Now in 2013, the FCC is proposing to create a new Citizens Broadband Service and it's like nothing else the regulatory agency has ever attempted before. Amateur Radio Newsline's Norm Seeley, KI7UP, has the details:

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Just before years end on Wednesday December 26th the FCC announced a proposal to make available 100 MHz of shared spectrum in the 3.5 GHz band using small cell and database technologies. The FCC calls the new service in the 3550 to 3650 MHz band the "Citizens Broadband Service" or C-B-S and proposes three tiers of service. These will be known as Incumbent Access; Priority Access and General Authorized Access.

Incumbent Access would consist solely of authorized federal and grandfathered licensed Fixed Satellite Service 3.5 GHz band users. They would be protected from the other tiers by regulation and technical means. This would include the use of exclusion zones where other C-B-S uses would not be permitted.

Priority Access level would be given to small cell use by certain critical quality-of-service dependent users at specific target locations. This might include hospitals, utilities, state and local governments. It might also include users with a distinct need for reliable, prioritized access to broadband spectrum at specific, localized facilities.

Lastly, the General Authorized Access or G-A-A level would allow opportunistic use of the spectrum for a variety of residential, business and enterprise purposes. These users would have to protect Level 1 Incumbent Access and Level 2 Priority Access users through technologies including geolocation. Also as the lowest level users they would not

have any expectation of protection from harmful interference to this user base.

The Notice of Proposed Rulemaking is known as FCC 12-148. It also seeks comment on including spectrum at 3650 to 3700 MHz, immediately adjacent to C-band downlink spectrum. If the FCC does include the 3650 to 3700 MHz band in the proposed new service, wireless Internet service providers using this band for links would have to be licensed under the tier 3 General Authorized Access rules.

The NPRM proposes a "Spectrum Access System" which would govern interactions between all devices in the 3.5 GHz band. It would be modeled after the TV White Space database concept and all devices would be limited to 1 watt Effective Radiated Power as compared to an Isotropic radiator.
If the proposed services name of the Citizens Broadband Service has a 1960's or 1970's ring to it, its not by mere coincidence. The FCC is proposing to license users under Section 95 of the Personal Radio Service rules. That's the same section that includes 11 meter Citizen's Band radio.

Source: Amateur Radio Newsline

Latest Awards

USACA #1234	Jim, W6OUL	Jan 4, 2013
Bingo III #26	Les, KW4V	Jan 19, 2013
Bingo IV #8	Tom, K7REL	Dec 30, 2012
USA-PA “W” Prefix #10	Tom, K7REL	Jan 05, 2013

Upcoming Events for County Hunters

It's state QSO party contest season again. A few events are listed for Feb. The VT and NH parties are usually not all that busy – but you never know. One mobile can make quite a difference, or if a club activates many counties.

Vermont QSO Party
RS(T) and VT county or S/P/C
www.ranv.org
Feb 2, 0000Z - Feb 3, 2400Z

Minnesota QSO Party
Name and MN county or S/P/C
www.w0aa.org
Feb 2, 1400Z - Feb 2, 2400Z
CW 1.850,3.550,7.050,14.050,21.050,28.050;
SSB 1.870,3.850,7.250,14.270,21.350,28.450.

Delaware QSO Party
RS(T) and DE county or S/P/C
www.fsarc.org
Feb 2, 1700Z - Feb 3, 2359Z CW 1.825,3.55,7.05,14.05,21.05,28.05,50.95;
SSB 1.86,3.96,7.26,14.26,21.36,28.36,50.135; Digital per band plan.

Louisiana QSO Party
Call sign, RS(T), LA parish or S/P/C
laqso.w5yl.org
Feb 9, 1500Z - Feb 10, 0300Z
CW 1.84,3.54,7.04,14.04,21.04,28.04;
Phone 1.865,3.865,7.255,14.255,21.365,28.465; VHF 50.095,50.135,144.05,144.21.

New Hampshire QSO Party
RS(T) and NH county or S/P or "DX"
www.w1wqm.org
Feb 9, 1600Z - Feb 10, 0400Z
CW - 1.815 and band edge + 45kHz;
Phone - 1.875, 3.935, 3.950, 7.235, 14.280, 21.380, 28.390.

Mississippi QSO Party
RS(T) and MS county or S/P/C
www.arrlmiss.org
Feb 23, 1500Z - Feb 24, 0300Z
CW 3.545,7.045,14.045,21.045, 28.045;Phone 3.857-862-867,7.238,14.275,21.375,28.375;Digital per band plan.

North Carolina QSO Party
RS(T) and NC county or S/P/C
www.ncqsoparty.org
Feb 24, 1500Z - Feb 25, 0059Z
CW 3.54,3.74,7.04,7.14,14.04,21.04,21.14,28.04,28.14,
Phone 3.86,7.26,14.26,21.36,28.36.

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Norm, W3DYA should be in the LA party and maybe the MS one. Chuck, NO5W is likely to be active too. Should be good ones!

Others have announced activity in the MN QSO Party – so we're back in full swing once again!

Future events

MICHIGAN MINI – April 25-27th

info here http://michiganmini.superhosts.net/