

borealisaurora/

Next page, Column 1,

#### The Evolution of Broadcasting

QSA-5

Page 2	
Education: Randy and Dave will	THE WA
schedule a Technician class for the fall.	Issue #5
Also looking at a "Get on the Air"	On Noven
class.	Harding was
Speakers – August on DX spotting.	United States
September – open (on Labor Day	results in the
weekend).	In the Pittsh
October – Bill Hillendahl. KH6GJC,	dreds heard
our ARRL SF Region Manager.	ment they w
Old Business:	Frank Conr
The prescriptive easement sign – in	ployee, who
Doug's car.	8XK, his an
Apartment Repairs – Completed.	would evolve
Personal property – Working on it.	of Novembe
Need to get the backroom cleaned up.	the start of
Projection screen – No Change.	broadcast in
Free Letter – Doug and Matt will talk	month "The
o neighbor.	at the evoluti
Donation Policy: Doug KF6AKU is	amateur's rol
working on a second part of the policy.	The idea
Morgan Hill Repeater on 147.330: Doug contacted NARCC to indicate no	considered h
bjection.	1902, when
Apartment Lease: No progress re-	wireless telep
ported.	urged the fin
Projector donation: Need thank you	Forest Wirel
etter for projector donated 18 months	develop and
ago. Curtis needed more information	stockholders
on donor and equipment.	ested in in
New Business:	massive stoc
Waves to Wine – A motion was made	development
and seconded to "Not adopt Waves to	necessary re
Wine as an official MARS event."	est in 1907
UDS/ORI Pass. The Board and the	Telephone C for 1907 m
Trustee did give permission to the So-	and even bi
noma County Radio Amateurs to use	prophetic, he
he 147.330 repeater for the event. Any	the day wher
nembers who wish to work the event	every home.
will be referred to SCRA.	even adverti
Moving the Sunday Morning 75M	the wireless t
check-in net from 10:00AM to	Despite deF
0:00AM was discussed. It was sug-	this area, he
gested that the Net be run at both times	cast the huma
during a transition period. This was left	airwaves.
o the discretion of the Net Manager.	Reginald Au
There being no further business, the meeting was adjourned at 20:20 hours	Professor. H
neeting was adjourned at 20:20 hours. Respectfully submitted,	the inherent
Randy Jenkins, KA6BQF Secretary.	transmission
The official copy of these minutes	ternative.
shall reside in the Secretary's files as	Schenectady,
naintained at the Corporate Office.	General Elec
initialities at the corporate office.	tist, Charles

**YBACK MACHINE** by William Continelli

nber 2, 1920, Warren G s elected President of the s. Millions read the election e newspapers the next day. ourgh area, however, hunthe election returns the moere wired in, thanks to Dr. ad, a Westinghouse embroadcast the results over nateur station. This station e into KDKA, and the night er 2, 1920 has been called the multi-billion dollar dustry. But was it? This Wayback Machine" looks ion of broadcasting, and the e in it.

of broadcasting was first by Lee deForest in May, he wrote that "Ultimately, phony will be possible". He nancial backers of the deess Telegraph Company to patent the concept. The , however, were more internmediate profits (through k sales) rather than genuine , and refused to finance the search. Undaunted. deForformed the deForest Radio ompany. In a statement that ust have appeared radical izarre, but was amazingly e wrote, "I look forward to n opera may be brought into Some day the news and sing will be sent out over telephone".

Forest's intense interest in was not the first to broadan voice and music over the That honor belongs to brey Fessenden, a Canadian e was the first to recognize flaw in the concept of spark s, and set out to find an al-His quest led him to , NY, and the services of ctric's most brilliant scien-Steinmetz. Fessenden explained his idea: an alternator Col. 3

capable of generating waves of 100,000 cycles per second (3000 meters). Steinmetz and his assistant, Ernst Alexanderson, worked for almost two years, and finally produced an alternator that met Fessenden's requirements. The Alexanderson Alternator, as it was now known, was delivered to Fessenden's station in the Fall of 1906. On the evening of December 24, 1906, ship and amateur operators heard something in their headphones they had never heard before: someone speaking! A woman singing! Someone reading a poem! Fessenden himself played the violin. (The Alexanderson Alternator would play a prominent role in early high power stations and will be fully covered in a column exploring Schenectady's contribution to the development of radio and television).

Not to be outdone, deForest continued his radio telephone experiments in the period 1907-1910, broadcasting from the Eiffel Tower and live from the stage of the Metropolitan Opera, where Enrico Caruso was singing. However, all of these transmissions had a major problem: without a pure, stable, direct current CW carrier to modulate, all the signals had a background whine and distortion. Real development in the area of modulated carriers would have to wait until Armstrong discovered the oscillating properties of a regenerative circuit.

By 1916, both Armstrong's circuit and the Audion were widely circulating in the radio world, and broadcasting surfaced again. Lee deForest resumed his transmissions, with programs of "good music, culture, and lectures". deForest can be credited with two "firsts" in 1916; the first advertisements (for his Audion and other products), and the broadcast of the Presidential election between Woodrow Wilson and Charles Evans Hughes. (Unfortunately, deForest signed off before the California results were in, so he declared Hughes the winner over Wilson).

Also, in 1916, amateur station 2ZK broadcast one hour of music each night. David Sarnoff, Next page, Col. 1.

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who had manned his station during the Titanic disaster, also got into the act. He wrote a memo to his employers at American Marconi suggesting a "Radio Music Box", which would become a "household utility". He went on to describe his vision of radio broadcasting, and then turned to finances. He predicted an income of \$75,000,000 or more each year from the sale of receivers. Marconi, still focusing on ship to shore telegraphy, took no action on the memo.

After amateurs had returned to the air in November 1919, hundreds of them began to explore the area of broadcasting. In May, 1920, amateur station 8XK joined many other hams in the transmission of music. Incidentally, it WAS LEGAL for amateurs to broadcast music, news, sports, lectures, advertisements, or indeed just about anything else they wanted. The Radio Act of 1912, still in effect, did not mention "amateurs", rather, one paragraph made a general reference to individual private or commercial stations. The only real restriction was the 1 kw power limit and the 200 meter wavelength. After that, the government didn't care. Thus, those amateurs who had built equipment to modulate their CW transmitters eventually played a phonograph record or two, sang (or tried to sing), or broadcast some form of entertainment.

With all of the above documented evidence, why is November 2, 1920 considered the start of broadcasting? The answer lies not at the transmitter, but at the receiver. Prior to that night. all broadcasts had, in effect, been from one amateur to another, or to a commercial station. The November broadcast, though, was designed and promoted by Westinghouse as a transmission to the general public. Starting in September, stores were selling basic receivers for \$10.00 to receive 8XK. Westinghouse, in effect, had seized de-Forest's and Sarnoff's idea, and was marketing it to the general public. Thus, it was the makeup of the listening audience that defined the start of

When the word of this successful transmission got out, more amateurs got into the act and set up their own little broadcast stations. By the end of 1921 it was estimated that about 1200 amateurs had made at least one broadcast Some had a regular schedule of pro grams and would evolve into commercial stations, others did it just out of cu riosity. But there were listeners. Over 400,000 people heard the Dempsey Carpentier fight on July 2, 1921. Radio sales were approaching 100,000 per year, not counting crystal sets which were selling at the rate of 20,000 per month. However, with this explosive growth came two problems for the amateur

The first was an identity crisis; what should the role of the amateur be in broadcasting? Some thought we should stay out of it and just stick to traffic handling on CW. Others envisioned the amateur as a jack of all trades, expert CW operator and relay station, as well as community broadcaster. In fact, a new name evolved to describe this amateur/broadcast hybrid, "Citizen" radio or wireless. Even QST was confused; for a period of time in 1921, the word "Citizen" replaced "Amateur" on the front cover.

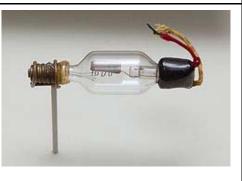
The other problem was frequencies. Everyone - amateur, broadcaster and hybrid - was on 200 meters. Tuning across the dial in 1921, one would mostly hear CW, a few spark holdouts and the new broadcasters. While the amateurs were used to the interference, the general listening public was not. They had purchased their radios to hear music, not CW. Complaints started to pour into the Secretary of Commerce. Legally he was powerless, as the Radio Act of 1912 offered no solutions. A conference was called for all interested parties, held in Washington in February 1922 to try to resolve the impending crisis.

Even though he was exceeding his authority under the Radio Act, Secretary Hoover was able to get the following proposals accepted at the conference: 1) Henceforth, special broadcast licenses

would be issued. Two frequencies would be available for broadcasters immediately, 360 meters (833 kHz) for regular transmissions, and 485 meters (619 kHz) for crop reports and weather forecasts. 2) After the marine interests had abandoned the 220 to 545 meter range (1363 to 550 kHz), it would be turned over to broadcasting. 3) Broadcasting was forbidden by amateurs, who were defined for the first time by name as stations operating "without pay or commercial gain, merely for personal interest". 4) "Quiet Hours" were imposed on all amateur stations effective from 8:00 to 10:30 PM daily, and on Sunday morning.

The fact that the number of broadcast stations dropped from 1200 to 30 immediately after these regulations went into effect shows just how many amateurs were, in fact, pioneer broadcasters. This agreement, however, was a house of cards. Secretary Hoover has stretched his authority under the Radio Act of 1912 well past the breaking point. In 1926, the cards came tumbling down, and the "Summer of Anarchy" was ushered in. How would amateurs fare with no enforceable regulations in place? Join us next time as "The Wayback Machine" explores the events leading up to the creation of the Federal Radio Commission.

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"Triode" Audion from 1908. (The 1906 Audion was a 2-element device with the signal applied to a wire wrapped around the glass envelope.)

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#### A Bit More on ARRL Field Day

For the first time we had a low voltage problem with our generator-supplied AC power but it only affected the RTTY station. RTTY transmitters run flat out full power with no carrier off times like a sideband signal and was reported to be pretty much inoperative by voltage starvation. A Single sideband signal has a carrier only when there is modulation.

The RTTY station was at the extreme end of the line from the gen. This included a 100 ft. extension cord. The rest of the rigs, as in years past, had no problems. Without that final cord it might have run OK. We do know that ASTRON transformer power supplies are happy down to 105 VAC input but we don't know what kind of power supply the RTTY rig was drawing its juice from.

To power RTTY from the main distribution box, the rig would have to be moved near it and a shorter, heavier extension cord used. We don't know if this was tried. Rich suggested paralleling the spare conductors in the 250 ft. long cable to reduce the total resistance of that cable. Theoretically a good idea but the required hardware to do this would be expensive and bulky and four cable ends would have to be modified.

The cable is in two 125 ft lengths to make handling easier. The present plugs and connectors won't accept the extra conductors.

A single neutral conductor would be handling the return path for those doubled hot ones. The cable has only five conductors, we're. told.

We have an adaptor to connect any gen with 120 VAC output to our 250 ft cable in case of failure.

On Flying

There are Rules and there are Laws. The Rules are made by men have a two hour bladder and three who think that they know better hours of gas than vice versa. how to fly your airplane than you. Laws (of Physics) were made by are good-looking. Just that goodthe Great One. You can, and looking people seem more capable sometimes should, suspend the Rules but you can never suspend observers contend. A matter of the Laws. About Rules:

a. The rules are a good place to hide if you don't have a better idea and the talent to execute it. b. If you deviate from a rule, it must be a flawless performance. (e.g., If you fly under a bridge, don't hit the bridge.)

of discipline and aggressiveness. The medical profession is the natural enemy of the aviation profession.

Ever notice that the only experts who decree that the age of the pi-till you're not happy lot is over are people who have never flown anything? Also, in spite of the intensity of their feelings that the pilot's day is over I know of no expert who has volunteered to be a passenger in a nonpiloted aircraft.

that your bladder is empty and nation, the doctor said, "You are in your fuel tanks are full!

He who demands everything that his aircraft can give him is a pilot; he that demands one iota more is to ask my husband," she said. a fool.

There are certain aircraft sounds that can only be heard at night.

The aircraft limits are only there in case there is another flight by that particular aircraft. If subsequent flights do not appear likely, there are no limits.

Flying is a great way of life for men who want to feel like boys, but not for those who still are. Flying is a hard way to earn an easy living.

Some more in the next column.

In the Alaska bush I'd rather It's not that all airplane pilots of flying airplanes. Or so seasoned self-confidence? No doubt, no doubt.

I've flown in both pilot seats, can someone tell me why the other one is always occupied by an idiot? Son, you're going to have to make up your mind about growing up and becoming a pilot. You can't do both.

There are only two types of aircraft -- fighters and targets.

You define a good flight by nega-The ideal pilot is the perfect blend tives: you didn't get hijacked, you didn't crash, you didn't throw up, you weren't late, you weren't nauseated by the food. So you're grateful.

New FAA Motto: We're not happy

Author unknown.

Elderfahrten Tale.

After the eighty-three year old lady Before each flight, make sure finished her annual physical examifine shape for your age, Mrs. Mallory, but tell me, do you still have intercourse?" "Just a minute, I'll have

She stepped out into the crowded reception room and yelled out loud. "Henry, do we still have intercourse?" And there was a hush. You could have heard a pin drop.

Henry answered impatiently, "If I told you once, Irma, I told you a hundred times...What we have is... Blue Cross!

A few years later after Henry had died the doc asked her during her annual if she had ever been bedridden. She replied, "No. Not since my husband passed on."

## The Shotgun at Sea

## Michael Fischer, K6MLF, MARS

It was beautiful. (When you pronounce that word, draw it all the way out: "bea-you-ti-fuuull.") Gorgeous. Classy. Glamorous. But it was, after all, just a shotgun. A double-barreled, 12-gauge shotgun.

"Just a shotgun," did I say? Oh, no. This was a piece of art, worthy of a museum. The twin barrels were silkysmooth, wonderfully blued. The receiver, shiny and golden, was intricately engraved with wonderful hunting scenes, far from the sea: deer, geese, forest, marsh, and mountains. The thumb-latch, too, was engraved in a filigree pattern. And the stock? Made of glowing cherry and varnished to a high gloss, entirely scratch-free, finely cross-hatched at the handgrip. This weapon was a showpiece. A showpiece, meant to grace a mantle for generations. The trigger action was quiet, solid, and confident.

And there it was, nestled in its custom-built, light-brown sturdy leather case, lined with red velvet. A compact case, with the barrel separated from the receiver-stock unit.

This elegant weapon was on display just for us, the crew of the USS Sigourney, right there on one of our messdeck tables. The raw expressions of awe, envy, longing and lust on the faces of the sailors gathered around were enough to tell you that this was one special shotgun.

It had been purchased in La Coruña by our boatswain's mate as a prize for the anchor pool. But he clearly had second thoughts about being parted from this thing of beauty—so the anchor pool offered the winning sailor a choice: \$250 or the shotgun.

"Anchor pool? What's that?" I asked—being a green never-been-to-sea-before young midshipman third. After being told in reluctant grunts by the real sailors, and yearning to have the shotgun just as much as they, I bought a slot in the pool.

Then, as we sailed through that rough North Sea storm above the Shetlands, I forgot about it. That storm: the dramatic rolling, pitching, and yawing of the ship; trying (and failing) to keep our dinners down; standing watch without sleep; learning to manage the helm with the compass-card swinging through 30°; getting all oiled when the refueling hose separated from the trunk not once but several times...well, that's another story. So when we got to Gothenburg, I was totally surprised—stunned, really—to learn that I had won the pool. The rest of the crew, I'm sure, was totally disgusted that this mere kid had wrested their dream weapon away from them through pure, dumb, ignorant luck. The heck with them; I was on cloud nine!

The boatswain argued, cajoled, begged in order to get me to choose the \$250. I thought about it, really I did. That was a lot of money in those days—remember, our cigarettes were 90 cents. 90 cents a carton, that is. Gasoline was 17 cents a gallon in San Antonio, my home town. So I did think about it, but the draw of that beautiful shotgun was far too strong.

I was soon separated from my shotgun—at least temporarily. Not only was there no room in my locker, but a sailor simply did not have a weapon aboard. So into the armory it went.

I was briefly reunited with the gun when, after our stop in Hamburg, and just after we left the English Channel, you guys ditched us middies. Right there in the Bay of Biscay, you figured you were up to here with our stunning ignorance, and were saved by the Lebanon Crisis with an assignment to go back to the Kattegat to patrol for Russian subs. Or at least that's the story you gave us as you highlined us up and onto the cruiser USS Newport News. The last you saw of me was a kid in the bosun's chair, suspended in the air between the ships, the shotgun nestled in my arms.

You all would've hooted with laughter when you saw what happened to us upon alighting from the bosun's chair! We were greeted by a Marine captain and several enlisted marines, standing at attention. Ordered to stand to attention ourselves, we were told that we were now aboard a real US Navy ship where everyone was expected to wear clean uniforms. Since almost all of us were wearing our blue working outfits that were all oil-stained (either from working the ropeline during the messy refueling attempts in the North Sea or from the normal course of duties aboard.) we were stripped of our clothes and the offending articles were pitched overboard.

That accomplished, the captain turned his attention to the leather case which I was still holding close. When he demanded that I open it, a hush fell over the fantail. "Omigawd," he breathed, and a knot of sailors and marines gathered around, looking at this gorgeous gun in awe. Recovering himself, he ordered me to attention again, told me that I was to get it to the armory immediately and report back to him.

Then you would've REALLY laughed at the sight of me, in my skivvies and accompanied by an armed marine, headed down the labyrinthine passageways of this huge ship, down several levels, to the armory in the forecastle. Sailors and officers alike stopped and stared as we passed by. Since the armory was next to the brig, they assumed I was under arrest—but if so, what was I doing holding a weapon?! **Next page.>>>>**  Of course, that was the last I saw of the shotgun until we mustered out in Virginia a month later. But then began a several-day adventure with the gun close at hand: hopping rides in Navy and Air Force airplanes from Norfolk to San Antonio, via Bolling Green, Wright-Patterson, Little Rock SAC, Dallas, and home. At every stop, SPs and MPs had to investigate this suspicious leather case—and at every stop more men fell in lustful envy as they gathered around to examine the shotgun. Several times they tried to forbid me entry to the base or aboard their aircraft—so I had to argue back, and appeal my case to their officers. It was a big deal, frankly, just getting home with that beautiful weapon.

But then the story ends, sadly. We were a pretty poor family, and I really should have chosen the \$250. The only way we could afford the bus fare and expenses to get me back to college at Notre Dame, in Indiana, was to sell the gun. Damn! After all that?!

Part of the mystery and allure of the weapon was that it was purchased in a small gun shop in a small, obscure Spanish city—and it had no maker's name engraved on it. All the identification it had was a half-dozen Chinese (Japanese?) characters and a serial number stamped into the breech end of the barrels. The gun shops in San Antonio didn't know what to make of it, or how to set a value on it. So, after going to every gun shop in the city—and pawnshops, too—I sold it to the highest bidder, with extreme reluctance. I won't tell you the price it fetched, but it wasn't \$250.

Here it is, more than 50 years later, and I still smile with pleasure at the simple and elegant beauty of that lovely shotgun—and the crazy adventures that it gave me in those few short weeks in 1958. Sorry, fellas—it would've been a different (and probably far better) story if one of you had won that anchor pool!

**Memorial Day w/e at Lake Tahoe** had some unusual weather. The following pix were shot at Tahoma on Saturday evening, Sunday morning and the last one on Monday morning. 5/28, 29 and 30.



Large bear ambled thru after a short hunt for the Sunday paper.





Home-made stalagmite. Faucet left dripping overnight.



Operating on the USS Pampanito at Pier 45 Fisherman's Wharf, SF

It was a normal San Francisco summer day: chilly, overcast and gloomy. Nevertheless, the Fisherman's Wharf area was crowded, and there was a steady stream of visitors aboard the **USS Pampanito**, more than half of them, as usual, from Europe .

The undersigned and a first-time guest operator, Jim Perry KI6RYE of San Francisco, reported aboard around 1000 and secured just after 1500.

Between those hours, we made 35 contacts on 17, 20 and 40 meters. More than half of the contacts were with participants in this weekend's IARU international contest. A couple of old friends, as well: Ed, N6VHD, from Pine Grove and Rem, K6BBQ, the fella who roped me into operating aboard several years ago.

Den here: Ed, N6VHD, is my neighbor about a mile form my QTH here in Pine Grove and is known as on the air as "Pine ." If you work "Pine Grove Eddy" on the bands, he may tell you he lives in Poverty Flats, but he really lives in Pine Grove. Come to think of it, there is not much difference between the two!

Among our visitors were two licensed radio operators and two submariners—one a serving active duty sailor and the other a dewy-eyed former crew member of a Balao-class boat. Four groups of visitors from Italy, three groups from the Czech Republic, two from Mexico, four from New Zealand, and others wanted to stop and talk about their own experiences and to ask questions about America, San Francisco, and the boat—in that order. As usual, we had more than a dozen young people in the radio room, several of whom got to talk on the radio, and most of whom had photos taken by beaming parents.

Marvin Wong was on the mess deck for much of the day, giving his own inimitable welcome. And, great surprise, two visitors even knew why the control room is rigged with red lights. They, of course, are in the very tiny minority of visitors who have even the slightest clue about that fact.

Our gremlins are still quite active in the radio room—on Thursday, as I reported, when Jim and I stopped by for an orientation visit, the 2-meter rig stopped transmitting audio signals in mid-QSO. Today, the PO from the FT890, even after multiple tweaks of the antenna tuner, was between 5 and 10 watts. That radio was performing flawlessly on Thursday, and it hadn't, of course, been touched since. After 15 minutes of puzzled scowls and button-pushing, it decided to behave, and transmitted well for the remainder of the day, with good signal reports from across the country. I suspect an aging microphone, since I did tap it against the table just before the radio started working well again. Therefore, Den, if you have spare mics for both radios, I suggest that you bring them along for the next DDO.

Den here: Unfortunately, I don't have an extra mic for the Yaseu VHF / UHF rig. The problem is most likely involves the mic connector cable or the connector itself.

In closing, a special shout-out for Jim Perry, KI6RYE, our guest op. He took to the duty immediately, was a quick study about the boat (having closely reviewed our website,) was a careful and skilled radio operator, good at picking out weak signals. His radio protocol is excellent, as is his warm and friendly welcome to the visitors aboard. Please give him a thank-you from the top.

Respectfully submitted, Michael Fischer K6MLF

131 Bolsa Avenue, Mill Valley, CA 94941-1101

415 383 5855 415 519 2201 cell

Den, K6ZJU, here again: We have our next DDO aboard the boat on Saturday, August 13, 2011. I hope to be on the boat this time around.

Marin Amateur Radio Society, QSA-5	July 2011	Page? We dunno. You can count 'e	em.
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**General Membership Meeting** is held on the first Friday of each month at Alto District Clubhouse at 27 Shell Road in Mill Valley, starting at 7:30 PM. Come a little early for pizza or whatever. From hwy 101, head west toward Mill Valley on E. Blithedale. Turn right at the first stop light a block off the highway. Angle right at next stop sign, then turn left at next corner, Shell Road. We are in a two story building, second from the corner on the left directly under the power lines.

Business/Board Meeting meets at the Alto District Clubhouse in Mill Valley on the second Thursday at 7:30 PM. Members are encouraged to attend and try to keep the clowns honest.

**Sunday morning informal meeting,** grinningly called the bible/babble class, meets every Sunday morning at the Alto District Clubhouse in Mill Valley starting at roughly 0800 hours and runs to around 1100 hours +or-. Sometimes we even talk about radio. **The Sunday Emergency nets.** Come on down and watch Matt K6OHD do the nets. You could try it yourself, while Matt stands by, and get rid of any mike fright you might have. If at any time you feel a panic attack coming on, Matt will get you thru it.

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Marin Amateur Radio Club, Inc. P. O. Box 6423 San Rafael, CA 94903 **Dues structure is: \$25. per year. \$30. for family memberships.** No dues are charged for Life or Honorary members.

Stamp

The Mailing Address Goes Here

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