

1-92

Zero Beat

January 1992

Hampden County Radio Association, Inc

Springfield, Mass

Our 45th ARRL Affiliated Year

Next Meeting: **Friday January 3rd, 1992**

Feeding Hills Congregational Church

Feeding Hills, MA

Doors open at 7:30 pm, meeting starts at 8:00

Speaker will be **Dick Frey, WA2AAU**, organizer of the infamous W2SZ/1 operation from atop Mt. Greylock every contest.

Dick's been a mover and a shaker in the VHF/UHF contesting scene for many years. 20 rover stations are part of the W2SZ effort alone! They have been trying to break the 1,000,000 point mark and have succeeded. The talk will include a phenomenal slide show, and a demonstration of the microwave equipment the rover's use.

This talk is highly recommended by many who've seen it at hamfests!
Don't miss it!

Next HCRA sponsored VEC session:

Saturday January 4th, 1992 at

the Minnechaug Regional High School, in Wilbraham Mass.

Starts at 8:45, with exams beginning at 9 am.

Bring your original license and a photocopy, and any certificates of successful completion, with two forms of ID.

Yorke Phillips, K1BXE is the liaison and can be reached at (413) 566-3010.

Test fee is \$5.40. Talk-in of \$146.52 simplex.

January VHF Sweepstakes

Saturday and Sunday, January 18th and 19th.

Special issue of Zero Beat to be sent out!

Don't forget the new club award you can qualify for.

See you during the contest!

In This Issue:

Marconi Memorial Operations

Radio Reminiscences

Brief Visit with the OM

And more....

Upcoming Issues:

Special VHF Sweepstakes issue!

The Blizzard of '78

Radio Clubs of Western Mass

KM1CC Expedition
By

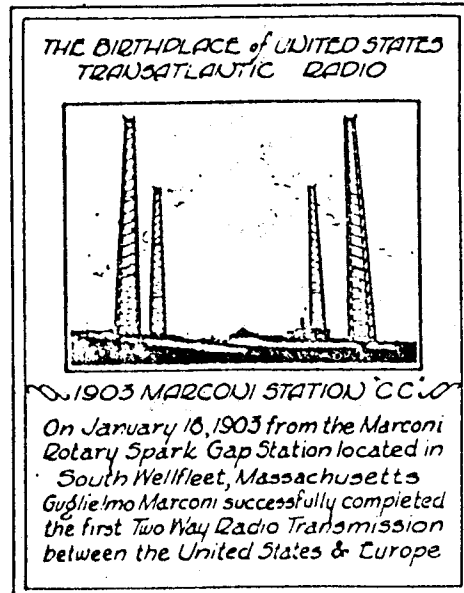
Jeffrey J. Duquette K1BE

With the organizing talents of Art Zavarella, W1KK, (accomplished even while he was on a cruise ship), a contingent of hams from the HCRA journeyed to Cape Cod to help out with the Marconi Memorial Station. Dick Stevens, W1QWJ, Eunie Gordon, W1UKR, Jack Murnane, WB1APD, Barbara Murnane, WB1EHS, Jean Peacor, K1IJV, Bill Werencki, W1CJK, and Jeff, K1BE, arrived at about 3 pm on Thursday. They operated until about 7, then went back to Jean's cabin for supper. The station was very elaborate, with SSTV, RTTY, and many antennas and rigs. Everyone went back and did some more operating and at 11 pm the troops returned home to their beds, leaving Jeff to hold the fort. During the night a northeaster arrived, swirling and howling outside at 50+ knots! The National Park Service and the Barnstable Radio Club recommended that everyone leave the station. Jim, K1UQI of Providence, and Jeff decided to stay behind and operate, come hell or high water.

There they were with over ten operating positions and no people! It was like being a kid loose in a candy shop. A car full of operators did return, because their car had gotten stuck trying to get out. With seven hams and no food, except beer crackers and lots of coffee, KM1CC stayed on the air! Pile ups continued on all bands and we continued to keep our schedule with GB3MSA, the memorial station in England. Jeff slept on the floor with SSTV contacts going on beside him. The sound of A2 spark gap thrilled hams from coast to coast and around the globe. Some even made QSO's using their own spark gap transmitters, and their old call signs. (This was around 2 am when the FCC was asleep, we hope for their sakes!) Jeff worked a ham who's brother in law was one of Marconi's original two operators. Working all bands, the tired hams kept banging away at the keys.

The rest of the HCRA team couldn't get out of the driveway so they kept in touch via two meters and landline. Art and Bill mounted a rescue mission from the nearby motel, bringing solace and sustenance to the tired crew. What a sight to see the two of them trudging through the 50 knot winds! Everyone jumped on the food and then went back to operating. The "senior citizens" saved the youngsters again!

The station became accessible on Saturday morning and the team was together again once more. Everybody got some more operating time in and then packed up for home. When we had originally made plans to go down to the Cape, Jeff never thought he'd get to make so many contacts, let alone be the control operator and entire operating staff at times! He was so tired that when Art and Bill bought him a hamburger and a ginger ale, he found himself leaning over trying to



1903 MARCONI STATION C.C.O.
1903 MARCONI 1978
75th ANNIVERSARY

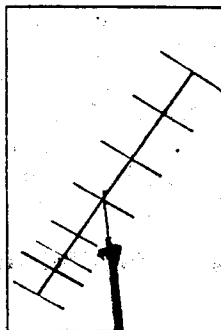
copy the CW the soda was sending!

It was a great experience for all and a thrill to help re-create history. The FCC should reconsider their ban on special event calls because they really do add to ham radio's dimensions. Many thanks to K1VV and the Barnstable Radio Club for sponsoring and organizing a number one operation.

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KM1CC: Marconi 75th Celebration

By
Barbara Murnane WB1EHS

On Thursday, January 19, 1978, eight members of the Hampden County Radio Association (HCRA) of Western Massachusetts appeared at KM1CC to help man the station during the part of the week commemorating the 75th anniversary of Marconi's first two-way transatlantic radio transmission. The Town Of Barnstable Radio Club did an excellent job of organizing and setting up KM1CC, and manning it for the nine day period. All frequencies and all modes of amateur radio were used during this time.

Three YLs were in the contingent from Western Mass in the HCRA: Jean Peacor, K1IJV, Eunie Gordon, W1UKR, and Barbara Murnane, WB1EHS. K1IJV was already operating CW when the rest of us arrived. Jean worked 160, 75 and 40 meter bands. W1UKR and WB1EHS did their operating on SSB while they were there. Eunie on 160, 75, and 20 meters, while Barb stayed strictly on 20. We all stayed on duty until early Friday morning when we went to rest at Jean's home in Orleans.

While we were present there were nine operating positions. One room held the slow scan television set-up, plus the 6 meter rig brought by Art Zavarella, W1KK of the HCRA. The other contained 2 meter equipment plus the RTTY station, and five other stations. The Kenwood TS-520 of Jack Murnane, WB1APD, and the Kenwood TS-820S of Dick Stevens, W1QWJ, all of the HCRA were in constant service from 2130Z Thursday to 1600Z Saturday.

The 240 cycle note, the sound of the Marconi 1903 station rotary spark gap, was reproduced by special permission of the FCC. Its distinctive tone for CW QSOs was transmitted by having the loudspeaker from the tone reproducer taped in place to a microphone. The CW operator simultaneously worked the keyer and the PTT switch of the mike. Its sound was unique and unmistakable to all who heard it.

It is interesting to note that several amateur stations responding to our CQ from KM1CC thought they were listening to a station on Midway Island and turned their beams in that direction, before finding out what was actually happening when we explained it to them.

The severe snowstorms which struck Thursday evening and Friday curtailed the operating time of these YLs Friday, when we were due back at KM1CC. Jean and Eunie tried to drive there Friday but had to turn back to Jean's summer house where five of us were staying. The roads were just impossible and the area to KM1CC was not made accessible until late Friday. Jean was a great hostess, and we

appreciated her having us stay at her house while on the Cape, once known for its sunshine and warmth, but now, in our memories, the place we spent the record breaking snowstorm of 1978!

KM1CC did not go off the air during the storm, as it was manned by a small group of fellows who stayed put and went from one set to another to make contacts with the world, going without sleep, and food other than coffee and crackers which happened to be there, until the "senior citizens" of the HCRA, W1KK and W1CJK finally made it in late Friday with the "meals on wheels" for the young people, one of whom was Jeff Duquette, K1BE, president of the HCRA.

All in all, it was an operating event to remember, especially if KM1CC becomes the last such special event station to be authorized by the FCC. The members of the town of Barnstable Radio Club are to be commended for a very fine job of setting up and operating KM1CC.

And More to This Story...

By
Barbara Murnane WB1EHS

It really was quite a fun experience. Before we left Springfield, I keep wondering how we would know what to do, and where to set up the gear when we got there, but everything fell into place, as it usually does, and we had a great time operating. It was a good thing we did bring some gear down, as the Cape Codders knew we were coming and took some of theirs home, thereby making space for us, but at the same time leaving the station a bit under-equipped, too. As soon as we found the free antennas, and latched onto some coax, we were in business, and stayed operating. Consequently there was not much chance to roam around and look at other logs or setups. The coax Jack found free was the one for 20 meters, so that explains why we stayed on that band!

As far as getting marooned at K1IJV's is concerned, it turned out to be quite a congenial group, and we did make the best of it. Eunie had prepared enough food for eight but only five were at the house with all of it. Jeff, K1BE had elected to stay at KM1CC for the night, and whoever got there first in the morning was supposed to take him back to the house to sleep while the others operated on Friday. The rest is history! Two, W1KK and W1CJK, had chosen to stay at a motel just outside the park entrance, but even so, they could not get back inside to KM1CC until late Friday night. The only time we all eight enjoyed a meal together was Friday night at about 7 before we returned to the station.

Meanwhile, in Orleans at Jean's, there were games to play:

Backgammon, Hearts, Solitaire, Scrabble, etc. and there was a good fire roaring in the fireplace. It was a good thing, because before the afternoon was over, the wet clothes were draped in front of it, and over the curtain rod in the bathroom. We had gotten drenched trying to free the cars from the 10+ inches of snow which had fallen, and then the rain was pouring down on us! And with no snow shovel we had quite a time of it! Jean and Eunie set out in Jean's VW Rabbit to see how things were, and if they made it, we would have gone along then. Jack and I went to get our Rabbit free, and also Dick's (W1QWJ) Volare, but it was a NO GO. Soon, while we were still struggling, and digging out with a garden spade, the only tool available, we saw Jean's car stuck on the slight incline approaching her street, so to the rescue the three of us went. That is when Jack and Dick fell flat on their faces after the car finally lurched forward enough to make it back to the parking area. After being out for so long in bad weather, we were all drenched, and of course, no one had brought a change of clothes. So, by mid-afternoon we were all sitting around in pajamas, and I guess this will never be lived down by the group. I don't even go around in pj's at home, but we all put our best smiles on and made the best of it. However, when the pictures come back from the lab, we will all have a good laugh, I hope!! Dick was very busy with his camera.

Saturday, we finally got out, and to the station again, to collect our gear and our president for the return trip to Western Mass. Jean stayed and returned home Sunday. It was quite a memorable occasion, and I guess you could say we got to know each other better! Thus ends the saga of the merry eight!!!

Born on Marconi's Day

by

Bert Binns W1KZU

Two historic events occurred in 1903: Marconi bridged the Atlantic, and I was born. My father was in the cotton mills and I came to the United States as a wee babe of 11 months. Sons were expected to follow their father's trade, but the mills weren't for me. I fixed radios for the chief electrician and through him became an electrician. Then I started showing films- first the silent ones, then the talkies! During the Depression I made \$65.00 a week, a princely sum in those days.

We're getting ahead of ourselves- in 1917 I earned the signaling merit badge which included flags and morse code. At age 14 my pal went into the Navy and gave me his antenna and back issues of "Wireless Age". I built a loose coupler, and used Murdock condensers and plate and Murdock earphones. Had a cat whisker galena crystal to copy NAA in Arlington, Virginia. (now WWV) That was rare DX in those days! WLC New London was on 24 hours a day handling ship to shore traffic which I copied. Then came vacuum tubes; I first had an Audiotron then a UV 200 detector and UV 201 amp.

When WBZA began voice broadcasting in Springfield from the Westinghouse roof with a dipole strung between two towers, (can still be seen today!) I listened to their "on air" tests in 1920.

Finally became W1KZU in '37. Got on 160 phone in 1938 and my cw went to hell. First store bought receiver was a Hallicrafter's SX 9! Earned WAS on December 1, 1939; WAC, April 1, 1940. In '38 I was running 100 watts with a pair of 809's. In '49 my first MOPA was on 2 1/2 meters.

After the war, Wes, W1LRE and myself built one of the first television sets in the area. Couldn't wait for channel six, New Haven, to come on the air. The excitement of seeing their test transmission is still recalled. When they would broadcast a fight, it was standing room only as the neighbors came over with beer. We used BC 645 tube which cost the government \$1500.00 new, but we bought them at surplus for \$9.99. Western Electric doorknob tubes at .65 were run with the plate red hot. I built an electronic organ from instructions on 450 Mhz, our private duplex phone line!

The HCRA 25th anniversary party was in 1972 with Paul K1PKZ, president, and Jack Sheehan K1JNC as VP. I recall Les Horner, Gordon Cavanaugh and Dick Stevens and the "bachelor boys", always attending the ARRL conventions. I made all of the conventions for years.

Have a Ripley's "Believe it or Not" about Jack Binns, who sent the first SOS, one of the first wireless ops! No relation to me, but I met his daughter years ago on Long Island.

Not too busy on the bands nowadays. Did work JA7BM on March 4, 1980, Heather and Bill's DXpedition. Heard Heather say she and Bill were going to climb the hill with 20 meter gear. It was a real thrill to me!

Al Jackson, W1OQB got me interested in OSCAR 6. I still get a thrill out of listening to each pass, ascending or descending, and heard Art, W1KK, last week.

I've been married to the same gal for the past 56 years. Lived in Feeding Hills the past 49. Glad to have been HCRA member for all of these years, and to have seen how amateur radio has changed. Most of the Old Timers are now silent keys, but I'll say to all the new hams, "Keep up the good work!".

'73 Bert Binns, W1KZU

Editor's note: Bert saw a request for autobiographies in Zero Beat. He was very ill from the cancer that killed him when he wrote this. He did a month after it was printed.

MARCONI AND SARNOFF CHANGED HISTORY

By
Art Zavarella W1KK

In these days of controversy as to the value of telegraphy in amateur radio, it may be interesting to recall what a vital role the code played in the lives of two of our most celebrated radio pioneers, Guglielmo (Billy) Marconi, and David (The General) Sarnoff.

Billy Marconi was an accomplished "amateur of electricity" at age 20, in 1894. There were at the same time many others such as Franklin the U.S., Faraday and Sir Oliver Lodge in England, Branly in France, Braun in Germany, and Righi, his scholarly neighbor in Italy. All were doing similar experiments with "Hertzian waves". Most were established university scientists mainly interested in the pursuit of knowledge. Marconi did not qualify even for college entrance, but what he did know was the Morse code.

This knowledge had come about by his chance meeting the previous summer at the Livorno seashore, of a retired "charming old man telegraphist", named Nello Marchetti. Since Nello's eyesight was bad he enjoyed young Marconi reading to him. Nello returned the favor by teaching the eager youngster the code then in use by wire telegraphers. This was the unique qualification: The code and the long lines of connecting wires presented Marconi a clear opportunity to use Hertzian waves for the benefit of mankind via improved global communications. This was attested to by his receiving the Nobel Prize in Physics in 1909 along with Professor Braun of Germany.

David Sarnoff's rise to fame and fortune in this country began as a wireless operator for American Marconi on board ship. All was cw in those days, all in Morse code. The forthcoming corporate merger of GE and RCA was nicely set forth in the December 13th issue of the Springfield Morning Union. The three toned musical identity of RCA's NBC are the notes G, E, and C which will signify full-circle reunion with General Electric Company in 1986.

In 1919, GE was part of a consortium that became RCA from assets of American Marconi, which then was producing wireless receivers. Sarnoff, son of a Russian immigrant, must have played his cards well because in 1930 he had risen from pounding brass to become the president of RCA. His keen interest in television research paid off handsomely and by 1940 RCA and the "General" were in clover with their NBC Red network, and ABC Blue network. GE's home entertainment product lines initiated with the acquired Victor talking machine and its dog "listening to his master's voice". The General had proudly proclaimed at the New York World's Fair in 1939, "Now we add sight to sound, with its implications to affect all society!".

So learning the code made a big difference in each of their lives and has affected all of us since then. Wonder which of us today will have an article written in fifty years detailing how learning the code changed the course of history?

Marconi's Cape Cod Transatlantic Wireless Station

By
Frank Caswell W1ALT

Guglielmo Marconi came to Cape Cod, Massachusetts in 1901 to establish the first transatlantic station in the United States. The station was constructed on the sand dunes of South Wellfleet, Massachusetts and was completed in late 1902. The transmitter was of about 30,000 watts power consisting of a three foot diameter spark gap rotor supplied with 25,000 volts of alternating current from a kerosene generator. The aerial wires were to be supported by 200 foot masts. The masts, 20 in number, were placed in a circle 200 feet in diameter in the sand dunes. The Cape Codders were skeptical of the masts being erected in the sand dunes and as they predicted the masts were blown down in a northeast storm in November 1901. Marconi then erected four 200 foot timber towers and in late 1902 the station went on the air for tests.

On the night of January 18, 1903, Marconi attempted to send the following transatlantic wireless message from then President Theodore Roosevelt to the King of England, Edward VII, "His majesty, Edward VII, in taking advantage of the wonderful triumph of scientific research and ingenuity which has been achieved in perfecting a system of wireless telegraphy, I extend on behalf of the American people most cordial greetings and good wishes to you and to all the people of the British Empire. Theodore Roosevelt."

The message was received at the Marconi station in Poldu, England, and for the first time the United States had been linked to England via wireless. A return answer was received at South Wellfleet from King Edward VII and was delivered to the President through the South Wellfleet Railroad telegraph station.

In 1907 the engineers realized that they had built the station too near to the ocean and by 1917 the sand dunes had eroded close to the tower bases. The station soon after had to be abandoned. Today approximately one half of the site has been claimed by the Atlantic Ocean.

MARCONI, PRIMO WIRELESS AMATEUR

By

Art Zavarella W1KK

As we prepare to commemorate the 75th anniversary of the first two-way CW QSO between the United States at Cape Cod, and Poldhu, England by Guglielmo (Wil) Marconi, let's look into a few aspects of this man's life and pioneering developments that definitely label him as Radio Amateur #1.

An amateur Billy was indeed, since he received no formal academic or technical training. Like most present-day young hams one evening he quietly called his poetic Irish mother Annie Jameson to witness his first flush of success in their attic at Pontecchio, Italy. His dictatorial Italian father Giuseppe was not too fond of Billy's tinkering with all those jars and instruments up in the third floor, where in former times silk-worms did their stuff. Up there that night in 1894 as his mother watched, he tapped a telegraph key delicately with one finger, and lo-and-behold at the other end of the room a bell was set ringing, clear, but not much louder than the crickets in the background. Look Ma—no wires!

From then on at age 20 he devoted his entire life to the many technical details necessary for practical two-way communication: people-to-people without wires. His friend and neighbor Professor Righi of Bologna provided invaluable scientific guidance. Meanwhile young Billy read all about Maxwell's mathematical prediction of electromagnetic waves in space (1865), read of Heinrich Hertz's production and detection of radio waves in his lab at Karlsruhe Polytechnic (1887). Billy Marconi's favorites however, were the more practical contemporaries like Benjamin Franklin of Boston/Philadelphia fame, and Michael Faraday of London, the metallurgical, electromagnetic, and induction genius, who like Billy was self educated and endowed with exceptional mechanical skill and experimental vision. One thing about Billy though, he knew that the practical development of wireless telegraphy would be a great humanitarian achievement, especially for people at sea and in remote lighthouse locations, and from his father he inherited an eye for a buck in business.

Like so many of us nowadays, Marconi had to resort to his junk-box for progress. He resurrected an old tank that had been used to store lamp oil and broke it up into two slabs of sheet iron. Using these in place of the big oscillator spheres, and with one on the ground and the other a considerable height above it the signal strength increased (a tankful) up to a mile or so, even over the side of a hill from Pontecchio. He was delighted upon hearing the shot his brother fired at hearing the signal, in the "shadow", deep in the valley. To Billy this meant that unlike light waves, radio waves could and did travel up and down and around curves, as well as line-of-sight. The other junkbox occasion was in the construction of a magnetic tuning device for separating the rapidly multiplying number of

wireless stations. He used some very thin wire used for tying up flowers to make his own "magnetic detector" patented in 1903 and later described as a "jewel of workmanship".

Field Days: Billy Marconi and his loyal technician helpers certainly had their share, in full compliance with Murphy's Law. At Poldhu in September of 1901, a sea gale wrecked the elaborate 20 mast inverted cone antenna of 400 wires 200 feet long. Undaunted they made do with a simple fan sky hook between only two masts 170 feet high supporting 60 wires. A few weeks later in October at Cape Cod a terrific storm wiped out the nearly completed installation sending pine cones crashing through the radio shack only a few feet from the chief operator Vyvyan. Then in December of that fateful year '01 they had the harrowing experiences of Signal Hill, St. Johns, Nova Scotia, where the antenna supporting balloons kept breaking away in the wild North Atlantic gales, and their kites bobbed up and down over the high cliff changing the antenna angle and direction. On this memorable occasion both Marconi and Kemp did hear the series of three dits (S) being sent on a prearranged schedule from Poldhu. After long last, the boy and his kites did succeed in logging signals across the 2,170 miles of ocean, proving how radio waves serenely ignore the Earth's curvature.

Also prominent in Marconi's multi-faceted career are the international and human friendship aspects: native born and lifelong proud Italian, Irish Anglican mother, Billy himself married Bea O'Brien. In the festivities following the success at Glace Bay, four flags unfurled side by side, those of Canada, Italy, the United States, and Great Britain. Here's how a New York newspaper reporter described Billy as he landed on the pier for one of his early visits to introduce wireless to America: "... a serious, somewhat self centered young man who spoke little but then always came to the point ... no bigger than a Frenchman and not older than a quarter century. He is a mere boy, with a boy's happy temperament and enthusiasm, and a man's nervous view of his life work ... When you meet Marconi you're bound to notice that he's a 'for'ner'. His suit of clothes is English. In stature he is French. His boot heels are Spanish military. His hair and moustache are German. His parents are Irish-Italian. ... there's little doubt that Marconi is a thorough cosmopolitan."

So that's how it all began, gang!

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President's Column

By

Bob LaFleur NQ1C

Marconi at Table Head, Nova Scotia-1902

By

Art Zavarella, W1KK

Guglielmo Marconi began experimenting with radio communication in 1895 at the age of 20, and in December, 1901 he transmitted the first radio signals across the Atlantic, from Cornwall, England, to St. John's, Newfoundland. In 1902 he built a station at Table Head in Glace Bay, Nova Scotia, and from here he transmitted the first complete radio messages across the Atlantic Ocean. The first 24 hour commercial service began in 1907 between his powerful new stations at Marconi Towers near Glace Bay, and at Clifden, Ireland. This was extended to duplex service with the opening of receiving stations at Louisbourg, Nova Scotia, and at Letterfrack, Ireland in 1913.

For decades Marconi Company operated radio stations on Cape Breton Island. The stations sent and received messages via wireless to ships far out to sea. They also relayed distress messages that saved thousands of lives, including those sent by the stricken *Titanic* in 1912! A short wave station now operates on the site, maintaining Marconi's memory as the "Voice of the Atlantic Seaboard" in its call letters VAIVAS.

My wife Alice, son Ralph and his wife Ann, and I visited these historic sites in the summer of 1991. I recommend them if you visit Nova Scotia. Nearby Cape Cod also has a smaller museum dedicated to Marconi.



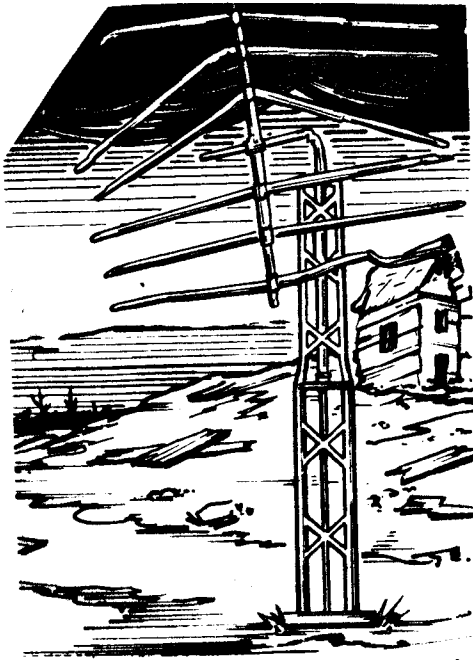
Snow and ice... gosh! My antennas survived last winter, but will they survive this one? I sure hope they do! We're now into the time of year that what you have for antennas will stay that way until spring, and equipment on mountain tops, such as repeaters and packet nodes, may become inaccessible if it breaks down. This is the case for the packet node CHSTR in Chester, MA and for the Mt. Greylock repeaters. So wish our antennas good luck!

This time of year also brings us to the January VHF contest. For those of you who are new to amateur radio, or to the HCRA, the January VHF contest is one of the two contests (the other is Field Day) that the HCRA participates in as a club. The contest is a heck of a lot of fun, and even if you only have an HT, you can still get on and make a handful of contacts. I urge you to give it a try! There's lots more information in the upcoming special issue of Zero Beat about the contest, so I won't carry on about it here, except to say that I urge you to make some contacts, and send in your log, even if you only make a few contacts.

Help! We need help! A great way for the club to make a few extra dollars at a meeting is to have a 50/50 raffle. We sell tickets, and the "prize" is half of the money that we take in. But the biggest problem with having a 50/50 raffle is getting someone to sell the tickets at the meeting. Most of us like to socialize at the meetings, and the last thing we want to do is go around trying to sell raffle tickets. But I'm hoping that one of you might be willing to help the club and take the job of selling 50/50 raffle tickets at the meetings. I really hate to see us miss this opportunity to help defray our increasing costs.

Some of you may have noticed that I haven't been on the radio as much lately. I'm not doing the Mt. Tom Swap Net (although I will start again in April), and I haven't been on as many nets, or on packet radio nearly as much as I used to be. It isn't because I'm mad at anyone, or that I'm losing interest in amateur radio. It is because I have found another "hobby" to take up that free time that I don't have... square dancing. I'm taking lessons with the Swingles club, and the Dancing Shadows club. And there is usually at least one dance every weekend. So with 3 to 4 nights of square dancing per week, my radio time has been cut dramatically. In April, my two classes will end, and I should once again have more time to spend on radio.

I want to wish everyone a happy and prosperous New Year.



NQIC's Antenna Installation
(Did you read the Prez's column?)

BRIEF VISIT WITH THE OM - HIRAM PERCY MAXIM

By
Art Zavarella, W1KK

There is so much that HPM/WIAW did for us hams, appropriately entitling him "Father of Amateur Radio", I can recount only a few highlighted personal impressions. It is, of course, well known and documented that he started the ARRL and QST with his young protege college student Tuska around 1915. It may not be so well known that, in my estimation, he and Tuska broke away from the Hartford Radio Club so that the two of them, along with Dave Moore, the 21 year old then president of the Club, could proceed on a national scale with an organization that included public service and relay concepts probably originated in an incident involving our Hampden county: an intermediate Windsor Locks Station relayed a message with his spark wireless from Maxim in Hartford to a Springfield ham who reportedly had a hard-to-come-by Audion for sale. This relay service did the trick. Maxim got the tube! The word relay, indicating use of privately owned hobby equipment for the benefit of others, was adopted in the official non-profit corporate name and has been, through the years, one of hamdom's principal survival assets, even to its present-day version of automatic relay, the 2 meter repeater.

One of the things I admired most in HPM's organizational genius was the high standards which he set for himself and fellow hams as embodied in the six requirements of the Amateur's Code: Courteous, Loyal, Progressive, Friendly, Balanced, Patriotic.

He sure was courteous and friendly me, when as a schoolboy some 55 years ago I rang the door bell to the side entrance of his home in Hartford for an unannounced visit to WIAW. As I look back at it now, I must have had a lot of nerve to go on my bike from an immigrant's family home in the meadows of East Hartford to the home of a famous automotive pioneer off fashionable Farmington Ave in Hartford. At that time he was indeed one of the insurance City's leading citizens, married to the daughter of a Maryland governor, but you'd never know it the way he invited me in to see "Old Betsy" his rotary spark rig which I used to hear on my crystal set and earphone in the cellar of our house way over in East Hartford across the city and across the river, maybe 10 miles distant. Although the details are hazy now it must have been an inspiring visit that urged me to stay on in school and pursue science, unlike most of my neighborhood chums.

When it comes to being balanced, it's hard think of anyone more balanced than HPM toward his hobby, never letting it interfere with duties to his family, business, or community. The famous movies which he also pioneered and relished show him enjoying life with the youngsters in his unique and appealing personality; kindness, sincerity and love of life abounding. He had many patents from his horseless carriage engineering career with Pope Hartford and invented noise silencers that would nowadays enshrine him as an environmentalist fighting noise pollution. As regards community patriotism, it brings to mind my own attendance at the dedication of the municipal airport. Brainerd Field, in Hartford. The reason I went, because I read in the papers that HPM would officiate since he was Chairman of the Hartford Aviation Commission. His patriotism shone brilliantly at the outbreak of World War I. Not only did his silencer company convert wholly to munitions production, but as ARRL president he saw to it that the Navy got its first quota of 500 trained operators at once. Then 2,000 more operators were needed, and largely through HPM's efforts and organization, were immediately enlisted.

Such is the stuff of which our hobby's heritage originated. Quoting from the 50th anniversary message in 1964 of then League President W6ZH: "We must be everlastingly grateful to those old timers for handing down to us these traditions of public service, technical progress, and operating skill. Without them, ham radio would have perished long ago".

New Goodies

Members are encouraged to bring new equipment, building projects, or anything they think might interest fellow hams to any club meeting and show it off. Items and photos of historical interest are also welcome.

Tech Talk - Line Impedance

By

William J. Hall W1JP

A short time ago, I rediscovered the importance of transmission line length in some particular situations. I had just relocated the 2 meter amplifier on the operating table and found that the coax connecting it to the TS700 was a bit too short. I had another cable handy, hooked the two together, and that was that. A few days later, I received a phone call from a neighbor about a "voice" on her TV set. I happened to be on two meters, so I turned on our set and, by golly, there was the "voice - me on practically every channel! Strange, there had never been a sign of TVI on the home set while on was on 2 meters before, why now? I thought about this for a day and then it struck me that the thing that had changed was the location of the amplifier. (the TVI only occurred when the amplifier was on.) I moved the amplifier back to its original location but the TVI persisted. I was getting a bit frustrated and then I remembered - the cable! I put the original cable back between the two units and miraculously, the TVI disappeared! Now I became very curious. I remember something about quarter wave lines and pulled out the handbook to refresh my memory. According to the handbook, quarter wave lines, or odd multiples of a quarter wave, "inverse" the input and output ends. If the output or load is a high impedance, the impact will look like a dead short and vice versa. The formula says that the input impedance Z_1 equals the square of the line impedance divided by the load impedance.

$$Z_1 = (Z_{\text{line}})^2 / Z_{\text{load}}$$

Now if the line impedance is 50 ohms, and the load is 10 ohms, we have

$$(50)^2 / 10 = 2500 / 10 = 250.$$

Conversely, if the load is 100 ohms, the input will look like this $2500 / 100 = 25$ ohms. All this is very interesting, but what does this have to do with the TVI problem? Just this. I measured the new patch line and it turned out to be 39 inches, exactly $3/4$ wave on two meters when you consider the velocity factor of the line. The old line was 25 inches, about one half wave. Apparently, there was some sort of a mismatch between the output of the TS700 and the input of the amplifier. This was inverted by the connecting line, which was an odd multiple of a quarter wave, and either the amplifier or the TS700 didn't like it. Even multiples of a quarter wave simply reproduce the load impedance at the input. My original cable was an even multiple quarter wave and caused no problem. I made up another patch line, this one 52 inches long, ($4/4$ wave or full wave), moved the amplifier to the desired new location, and no TVI!

The message here should be clear. At VHF, and with solid state stuff, the line length can be very important. If you

have a problem with spurs or other funny behavior, try changing your transmission line length: it might bring about a miracle fix!

Reprinted from Intermod, October 1975, Mt Tom ARA

MICROWAVE TRANSVERTERS

SHF SYSTEMS No tune linear transverters and transverter kits for 902, 1296, 1296, 2304, 2400, 3456 MHz. All use 2m i.f.g 13.8V. Kits include mixer and L.O. P.C. boards, xtal and all components. Built units include I.F./D.C. switchboard, connectors and compact low profile housing. Other frequency options in amateur band available.

SHF 900K	902-906 MHz	50mW	Kit \$139	Built \$265
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SHF 1269K	1268-1272 Oscar Mode L	10mW	Kit \$140	Built \$255
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SHF 2401K	2400 MHz Mode S rcv Conv		Kit \$155	Built \$255
SHF 3456K	3456-3460 MHz	10mW	Kit \$205	Built \$325
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3335 PA	14W in 40W out	902-928 MHz	\$335
1302 PA	10mW in 3.0W out	2304 MHz	\$400
901 IPA	10mW in 1W out	3456 MHz	Write or Call

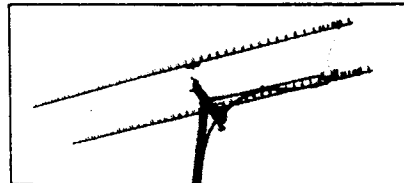
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1691LNAWP	preamp 1 dB NF 1691 MHz mast mounted	13.8V	\$140
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2345LYK	45el loop Yagi Kit	1296 MHz	21 dBi	\$ 95.00
2445LYK	45el loop Yagi Kit	1269 MHz	21 dBi	\$ 95.00
1844LY	44el loop Yagi (assem.)	1691 MHz	21 dBi	\$105.00
2355LYK	55el Superlooper Kit	1296 MHz	22 dBi	\$108.00
1345LYK	45el loop Yagi Kit	2304 MHz	21 dBi	\$ 79.00
945LYK	45el loop Yagi Kit	3456 MHz	21 dBi	\$ 79.00

Other models available. Call or write for catalog.

DOWN EAST MICROWAVE

Bill Olson, W3HQT

Box 2310, RR1 Troy, ME 04987

(207) 948-3741

FAX: (207) 948-5157

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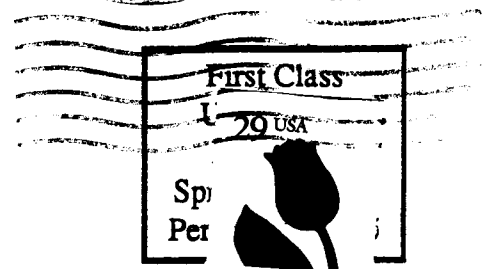
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VHF Sweepstakes
Jan 18 & 19, 1992
Special Zero Beat issue will be mailed soon!

Next Meeting
Friday January 3rd
Feeding Hills Congregational Church
Dick Frey WA2AAU
Speaking on W2SZ/1 operations
during VHF/UHF contests

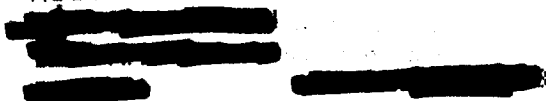
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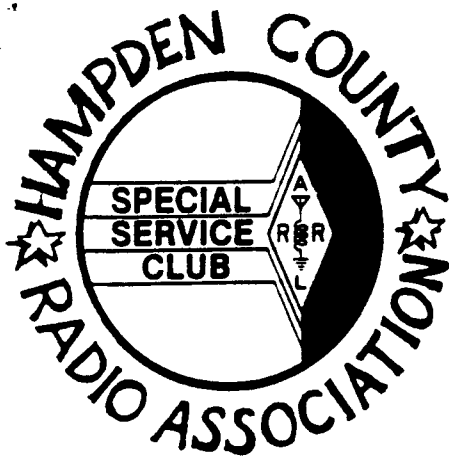


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1-92 SPECIAL
EDITION

Zero Beat

Special VHF Sweepstakes Issue
January 1992

Hampden County Radio Association, Inc

Springfield, Mass

Our 45th ARRL Affiliated Year

January VHF Sweepstakes

Saturday January 18th Starts at 2:00 pm est

Sunday January 19th ends 11:00 pm

Don't forget the new club award you can qualify for.

See you during the contest!

Contest exchange is your callsign & grid square!

It's that time of year again! Snow appears and the temperature drops. It's time to get the VHF gear out and tuned up for the biggest and the best VHF Sweeps ever! Many HCRA members have spent many long hours preparing for this contest. Club station W1NY will be on again and you can work them and get a QSL card for every band.

For those to whom this is all new - You operate any VHF or UHF band, or as many as you own radios for. You can work a station once per band, regardless of mode. Multipliers are how many different grid squares you work. (including the one you're in!) Grid squares are world wide squares, 2 degrees by 1 degree, with two letters followed by two number designations, and everyone has one. Collecting them qualifies you for awards. The enclosed map helps to show some of the grids in the U.S. Most of Western Mass is FN32. The exchange is your callsign and grid square.

The Hampden County Radio Association has been active in this contest from its very inception over 45 years ago! The contest efforts this year may set a new club record, IF every member pitches in. Some are hesitant to send in a log for only 100 points, feeling its "too small". Well, one year the club missed breaking 100,000 by 10 points!

The more bands you can work the higher your score! It increases algebraically (almost). If you work stations like KAIZE, W1NY, N1DPM, AC1T, K1BE, and NQ1C, the QSO can be worth 5 to 10,000 points to the club aggregate score!

Logs, maps, and summary sheets are included in this issue. Make sure you send in your entry. We'll be glad to fill it out for you if you're intimidated by the forms. You'll start accumulating points towards special club awards or may even qualify on this go-around!

In This Issue:

Complete logs, report sheets, and grid map
VHF Propagation
VHF Path Losses
Transverter Kit Review
Microwave Directory
And more.....

Upcoming Issues:

Contest report
Radio Clubs of Western Mass
Russian Radio newsletter
Antenna Articles
Product Reviews

Next Meeting:

Friday February 7th

All new licensees are Welcome!

VHF Propagation

By

Jeffrey J. Duquette K1BE

These people are desperate! The contest is winding down and they haven't made 1 million points! You're the man of the hour! (Ham-of-the-hour?) With your ten watt rig feeding a coat hanger on the kitchen table, you can work all of the high power distant stations. How, you might ask? Desperate times call for desperate measures! They'll strain their ears to pull your signal out of the muck. How far can your signals really go?

This depend on various factors. Single sideband, CW, and FM signals propagate many different ways on VHF/UHF bands. When you see the weather map in the morning paper, check to see if a warm air mass is overrunning a cold air mass. Then you can expect tropospheric bending of your signal which will come down who knows where! This weather inversion causes DX to open to incredible distances. Aim your antenna along the trailing edge and expect to hear stations in a wide coverage area.

Sporadic E skip occurs when intense patches of ionization occur. Solar flares produce these and can be very strong. Listen to W1AW and WWV for the solar index or news of a solar flare. Or if you start to hear stations in California on two meters, suspect sporadic E! F layer openings can also be spectacular, and maybe one will occur during the VHF contest. I remember one year when Ohio stations came in like gangbusters for 20 minutes!

If Donald Duck suddenly seems to be working you on SSB, or the CW has a strange fluttery sound, you're most likely bouncing your signals off of an aurora. Look out the window for the Northern lights, or Aurora Borealis! You don't need to be a high power, super-station like KA1ZE to work Washington state from Massachusetts. Once you hear auroral propagation, you won't forget it. Try pointing those antennas North at night!

Transequatorial propagation occurs along the North/South line of the sun. You can work South American stations on six meters. Tropospheric scatter on two meter CW can go over 500 miles. Signals tend to be weak and fluttery, but what some people won't do for another multiplier! Meteor scatter is beyond the ken of most of us, but some of the club members will be suing it. EME, or bouncing your signals off the moon, is being used more and more. WINY uses it very successfully.

Beam antennas work best, but don't sit out the VHF Sweepstakes just because you feel you don't have a "good" station. Every year many hams rack up over 1,000 points using a rubber duck, 1 watt, and simplex FM frequencies!

Keep in mind the contesters want you, and you're doing them a favor. The club score goes up for every station you work, due to the multipliers. The contesters, big and small, have the gear to work you, so get out there and do it!

Attention All Radio Amateurs!

The 45th ARRL January VHF Sweepstakes will take place starting on Saturday 18, at 2:00 pm EST and ending Sunday, January 19th, at 11:00 pm EST. There will be considerable club activity. Please participate! Even a few contacts on FM will go a long way towards helping others boost their scores. Every club member should keep a log and send it into the ARRL. Every point matters! The exchange is very simple, just your grid square with other stations. For example, Western Mass is FN32, CT is FN31. It's that easy! It's lots of fun! Pass the word to other club members! CQ Contest!

January 1992 VHF Contest Activity Hours (EST)

Start	End	Day	Event
2:00 pm		Sat	Contest Starts
2:00 pm	7:00 pm	Sat	All bands active
7:00 pm	8:00 pm	Sat	Local FM activity
8:00 pm	9:00 pm	Sat	222 Mhz national activity hour
9:00 pm	10:00 pm	Sat	432 Mhz national activity hour
10:00 pm	11:00 pm	Sat	1296Mhz national activity hour
11:00 pm	12:00 am	Sat	903 Mhz national activity hour
6:00 am	7:00 am	Sun	6 meter activity hour
7:00 am	8:00 am	Sun	Local FM activity hour
8:00 am	9:00 am	Sun	222
9:00 am	10:00 am	Sun	432
10:00 am	11:00 am	Sun	1296
11:00 am	12:00 Noon	Sun	903
12:00 Noon	1:00 pm	Sun	6 meter
1:00 pm	2:00 pm	Sun	Local FM
2:00 pm	3:00 pm	Sun	222
3:00 pm	4:00 pm	Sun	432
4:00 pm	5:00 pm	Sun	1296
6:00 pm	7:00 pm	Sun	6 meter
7:00 pm	8:00 pm	Sun	Local FM
8:00 pm	9:00 pm	Sun	222
9:00	10:00 pm	Sun	432
10:00 pm	11:00 pm	Sun	1296
	11:00 pm	Sun	Contest Ends!

The activity hours listed above are a big help for those who have limited hours available to participate. You're more likely to work everyone by getting on at these times!

FM SIMPLEX FREQUENCIES

446.000 Mhz FM (UHF gives 2 points per QSO!)
223.500 Mhz FM (UHF gives 2 points per QSO!)
146.49, .55, .58 FM (VHF gives 1 points per QSO!)