



# Metroplex Monthly

**W2MPX**

2 Meters: 145.450 mhz -600 khz PL 100  
70 Centimeters: 443.950 mhz +5 mhz PL 141.3



**May 2016**

## Next Meeting

The next meeting will be on Saturday, May 21<sup>st</sup>, 10 AM at the Gotham City Diner, 550 Bergen Blvd, Ridgefield NJ.

## EchoLink

Our EchoLink has been up and running for quite some time now. It can be accessed by computer using the EchoLink software. It can also be accessed with many Android smart phones and iPhones using the EchoLink app. To log on to our repeater with a computer use node #501504. With a smart phone, go to stations, Locations, North America, United States, Area 2. Then scroll down to W2MPX-R and touch select it and you will be logged on. Add it to your (EchoLink) favorites so you can log on in the future with one step.

## May - June Hamfests

### Saturday, May 28th

Bergen Amateur Radio Association  
Location: Westwood Regional High School  
701 Ridgewood Rd.  
Township of Washington, NJ  
Talk-In: 146.79 – PL 141.3

### Sunday, June 5<sup>th</sup>

Long Island Mobile Amateur Radio Club (LIMARC)  
Location: Briarcliffe Colledge  
1055 Stewart Avenue  
Bethpage, NY  
Talk-In: 146.85 – PL 136.5

### Sunday, June 5<sup>th</sup>

Mt. Beacon Amateur Radio Club  
Location: Downstate Correctional QWL  
121 Red Schoolhouse Road  
Fishkill, NY  
Talk-In: 146.97 – PL 100

### Saturday, June 18<sup>th</sup>

Raritan Valley Radio Club  
Location: Piscataway High School (Lots 11 & 12)  
110 Behmer Road  
Piscataway, NJ  
Talk-In: 146.625 – PL 241.8  
442.250 – PL 141.3  
146.520 – Simplex

**July 17<sup>th</sup>** Sussex Hamfest

**August 20<sup>th</sup>** RMARC 38<sup>th</sup> Annual Hamfest

## May Birthdays

No birthdays to list this month. This is because we don't have that information for all of our members. You can email the information to me if you want your birthday listed. All we need is your name, callsign and the month that you were born.

Mail to: [f\\_flannigan@yahoo.com](mailto:f_flannigan@yahoo.com)

## Q2QDN, Silent Key

I will always remember Mike. He was an Amateur who was interesting to listen to. He had a way with words like no one else. He had a wealth of knowledge which he was willing to share. He would make me laugh just about every morning that he was on the air. He would welcome newly licensed hams and give them a few pointers in a friendly way. Mike enjoyed explaining how things looked and worked to some amateurs who were visually impaired. He lived to help others.

He will be missed.



*Mike, K2QDN*

## The History of the Rise and Fall of Amateur Television

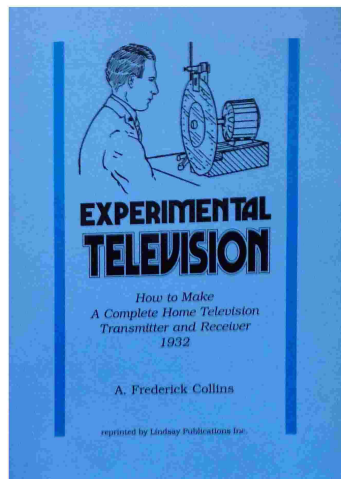
By Jerry Raimondo WB2KZX

Not many hams know about ham TV. The reason is simple, many barriers have prevented its popularity. In the United States Francis Jenkins, and John Logie Baird of The United Kingdom, were the first inventors of primitive mechanical television systems, in the 1920's. The systems used mechanical steel discs with holes that rotated in front of electric eye photo tubes in the transmitters and neon tubes in the receivers. Almost every other developer of these systems was able to make a better mechanical system, however Jenkins and Baird held the patents and were licensed as well. The number of scanning lines started at 24, and

by 1935 the practical limit for mechanical systems was 120 lines being transmitted by RCA in New York, who by this time had purchased everyone else's mechanical patent. However, all of the patent holders encouraged amateurs and hobbyists to build and experiment without restrictions and fear of lawsuits. The only restriction placed on the hobbyists and hams by the governments and patent holders was the restriction of not receiving any monetary reward. If you check with the ARRL you will be informed that extensive experiments were conducted by hams, and they have articles from that era to prove it. For some reason the articles were never reprinted which is puzzling. It is part of nostalgia which is quite prevalent in QST. One well known independent mechanical TV developer was A. Frederick Collins. He lived in New York City at the time. It was well known because he was the inventor of the wireless telephone in 1899, a system used by the rich and famous who wished to make phone calls from ships, trains, or remote locations. Yes, he also held the patent, and wanted to develop a similar system with Video. Collins used the developments and improvements of Hollis S. Baird. What makes Collins different from the other hams and other pioneers is that no one can find a record of him having been licensed by the government or employed by anyone. Also Collins wrote a best selling book in 1932 on the correct way to make a mechanical TV system.

At the time Collins wrote his book which was at the beginning of the world wide depression, Philo Taylor Farnsworth of Philco, and Vladimir Kosma Zworykin along with Earl Dewitt Wilson of RCA were working on all electronic TV. Collins was completely aware of these developments and devoted full chapters to them in his book called "Experimental Television". Mechanical television had only two advantages over electronic TV. One was a much lower cost to build equipment, and most important was a much lower bandwidth in over the air transmission. This book was the major reference used by hams at the time up until 1939. In fact colleges around the country also taught classes with hams and had mechanical TV stations up until 1939.

So what happened in 1939 to change this? In June of



that year all electronic transmissions from Germany were received in the UK, and in July, English transmissions were received at Rocky Point Long Island, New York. The transmissions were all electronic 405 line, 4 Mhz bandwidth signals in the VHF bands. In addition the picture pick-up tubes had improved to the point that at the 1939 worlds fair the TV displays were a hundred times better than the tiny blurry mechanical displays. Lets not forget that the 11 year sunspot cycle was at an all-time high as well. QST was publishing articles by Ross Hull who was experimenting with the new television NTSC standard at the time. Up until his death he was was receiving wide bandwidth TV signals in Hartford, Connecticut from New York City. His death was caused by electrocution from his own hand made TV receiver. This was also the period that was the beginning of World War II. No more ham TV until 1946.

The FCC in 1946 changed all the VHF/UHF ham frequencies to become effective in 1949. No more unlicensed ham TV operation. All electronic ham TV transmissions had to be on 420 to 450 Mc (Mhz), or 1220 to 1400 Mc. Mechanical TV (dead and gone by 1949) was allowed on the phone bands not to exceed 10 Kc (Khz) bandwidth and not to exceed 50 watts.

By the mid 1950's, hams with a few extra dollars were beginning to assemble black and white 2 way TV stations. What is strange is that a lot of these hams lived in Connecticut and there was very little coverage of the activity by QST. There was a ham, Al Denson W1BYX, also the owner of Denson Electronics, who made the best effort of the 1950's and 1960's to restart the ham TV movement by financing electronic kits for the average ham out of his own pocket.

In addition the most modern TV pick-up tube at the time, the Vidicon, could be bought from him for half a weeks salary. Another ham, Laird Campbell W1CUT had a ham TV mobile station! With this new found activity, the FCC raised the the final transmitter power limitation from 50 to 1,000 watts. The higher power limit increased the line of sight or ground wave range from 3 miles in 1949 to 50 plus miles in the 1960's. The growth was steady and in September, 1963, at the Communications Fair held in



*Al Denson*

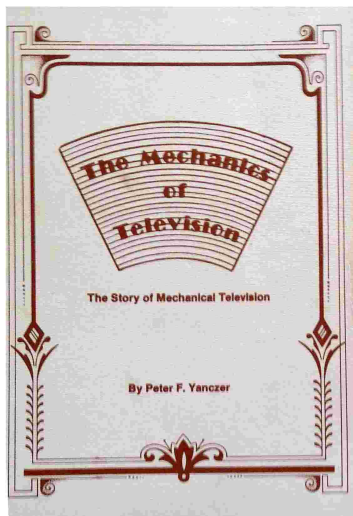
New York City, the Craftsmen Instrument Lab, of Woodside, New York introduced the first complete ham TV kit for \$490.

In the 1970's there were more than a few manufacturers and complete units as well as kits. All of them are NTSC and color was able to be sent by a few hams and received by most hams. There were milestones such as ATV repeaters all over the country. One of the most important repeaters in this area was the LIMARC repeater. Also let us not forget how Gordon West WB6NOA became the well respected ham that he is today. Mr. West holds the top 8 long distance records for ATV two-way contacts on 430 Mhz, all made in one day between California and Hawaii, in communication with 8 different stations. In the 70's the FCC added an additional band at 900 Mhz. That I am afraid to say was the time of peak activity.

By the early 1980's, in the New York metro area all of ATV repeaters, including LIMARC had shut down. By my count there were only 29 hams in this region still on ham TV in 1990. By 1995, the closest repeaters to midtown Manhattan were in Moorestown, NJ and Ithaca, NY. The only high quality reliable supplier of ATV equipment was P.C. Electronics in California.

The final blow was in 2009, when the NTSC standard was withdrawn by the FCC for commercial transmissions. A lot of NTSC equipment should have come on the market at fire sale prices as in the the day when the FCC killed wide band FM equipment in the 1960's, and 1970's. But that never happened because the salvage and surplus electronics houses were fewer than in the earlier post world war 2 period and the equipment was never given or offered at reasonable price points.

What is unbelievable today is there is a group of hams bringing back mechanical ATV. How and why is because of one man, Peter F. Yanczer. This man wrote a best selling book called the "The Mechanics of Television". This book written in 1986 is even better and more up to date than Collins book in 1932. This man lived in St. Louis, Missouri. Like Collins, no one knows if this man was licensed, or where he worked. He was a machinist and



like Al Denson, he sold kit parts to hams and hobbyists, with the cost sometimes out of his own pocket. It is not in his book, but Mr. Yanczer in the late 1990's was able to transmit color pictures in 15 lines that looked better than 32 lines in black and white. In England, hams regard him as the worlds leading authority on mechanical TV. This book inspired hams in the English speaking world to start TV communication via mechanical means.

One such club of hams is the NBTVA club in Milford, Derbyshire, England. They are on the air at 0700 GMT on 3700 to 3707 Khz (80 meters) all year. Other groups in the USA are trying for long distance on 29.000 to 29.200 Mhz where the FCC allows a bandwidth of 9 to 10 Khz. These bandwidths allow 32 vertical lines to be transmitted in black and white.

Below is a link to the Wyenet Narrow-bandwidth Television Association Website. Very interesting, check it out.

<http://www.nbtv.wyenet.co.uk/>

When I first wrote this narrative in 2010, I was told that the information was depressing. I disagree because in the last 6 years something has changed. We as hams have the ability to take a laptop and plug it into an interface that connects to a wideband UHF transmitter and accomplish ATV contacts. We can also send a digital signal as well as NTSC. We as hams can put a digital (linear) ATV repeater on the air. We could talk to the satellite people about a digital ATV bird. So what is stopping us? You tell me!

Jerry Raimondo, WB2KZX

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