

Hamvention 2022

Voice of America Museum of Broadcasting



Photo by K9KMD



Photo by K9OK

THE

VOICE OF AMERICA

DURING WORLD WAR II, PRESIDENT ROOSEVELT TURNED TO THE INNOVATIVE ENGINEERS OF THE CROSLY BROADCASTING CORPORATION TO FIGHT THE PROPAGANDA WAR BEING WAGED BY NAZI GERMANY.

ON SEPTEMBER 23, 1944, THE VOICE OF AMERICA BETHANY STATION WAS DEDICATED. THE FIRST BROADCAST WAS DIRECTED TO NAZI GERMANY AND BEGAN WITH: "WE SHALL SPEAK TO YOU ABOUT THE WAR. THE NEWS MAY BE GOOD OR IT MAY BE BAD, BUT WE WILL TELL YOU THE TRUTH."

ON THIS SITE, SIX 200-KILOWATT TRANSMITTERS AND 24 DIRECTIONAL RHOMBIC ANTENNAE WERE BUILT. THEY WERE THE MOST POWERFUL AND SOPHISTICATED TRANSMITTERS THE WORLD HAD EVER SEEN, CAPABLE OF DELIVERING A RADIO MESSAGE OVERSEAS.

FOR MORE THAN 50 YEARS, THE VOICE OF AMERICA BETHANY STATION DELIVERED THE NEWS TO THE PEOPLE OF EUROPE, AFRICA, SOUTH AMERICA AND PARTS OF ASIA.

West
Chester

WWW.WESTCHESTERPA.ORG

STATION

AMERICA
LAY STATION









Positioned vertically, the antenna focuses its radio signal equally in all directions as shown by the red arrows. Examples are the W.L.W. tower in Mason, Titanic's antenna and a lightning bolt.

Positioned horizontally, the antenna focuses its radio signal equally in two directions as shown by the large red arrow. Examples are antennas by Amateur Radio, the Military and others.

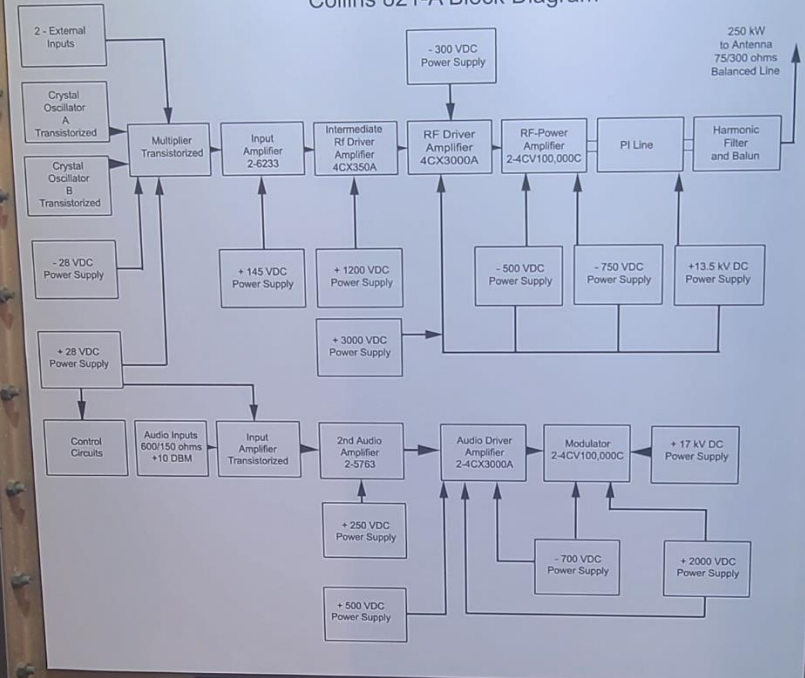
Adding additional horizontal wires causes the antenna to focus most of its signal in one direction, as shown by the large red arrow. It can easily rotate its signal to a target location.

Positioning the horizontal wires into a diamond shape, called a Rhombic Antenna, causes the radio signal to focus forward, thus it concentrates its energy in one direction, which greatly increases its efficiency and was preferred by the VOA.

Some of the earliest radio stations in the world were located in Bethany, West Virginia. The VOA (Voice of America) station in Bethany, West Virginia, was one of the first to use a Rhombic Antenna.

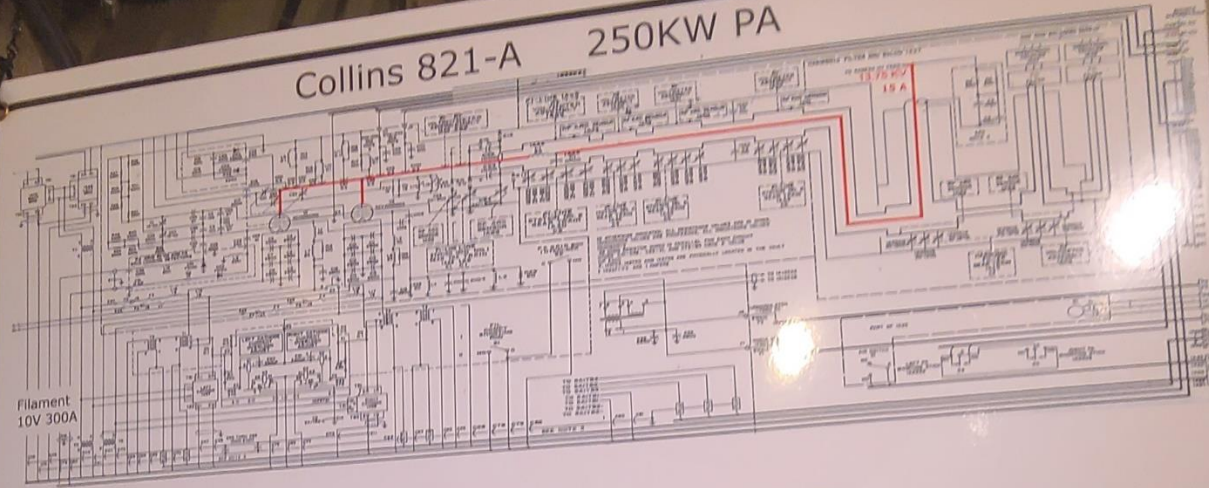


Collins 821-A Block Diagram

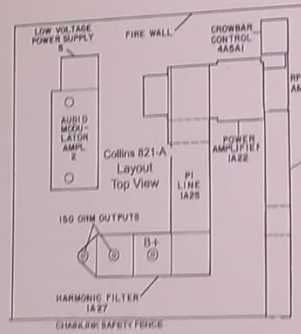


Vac Variable
Water Pump
and
Water Filter

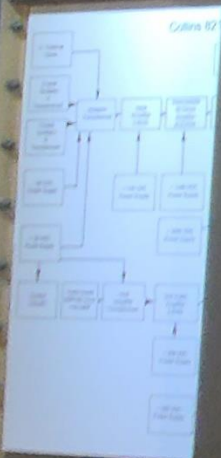
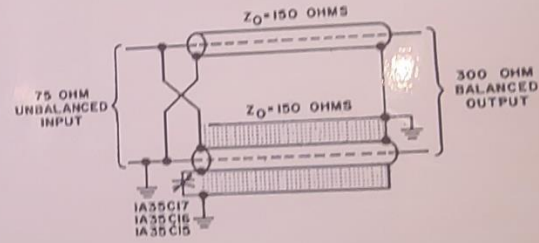
Collins 821-A 250KW PA



Filament
10V 300A



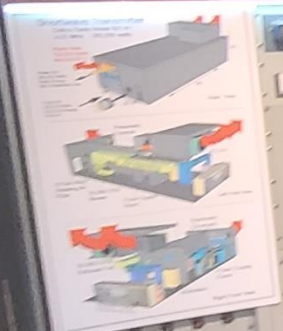
BALUN



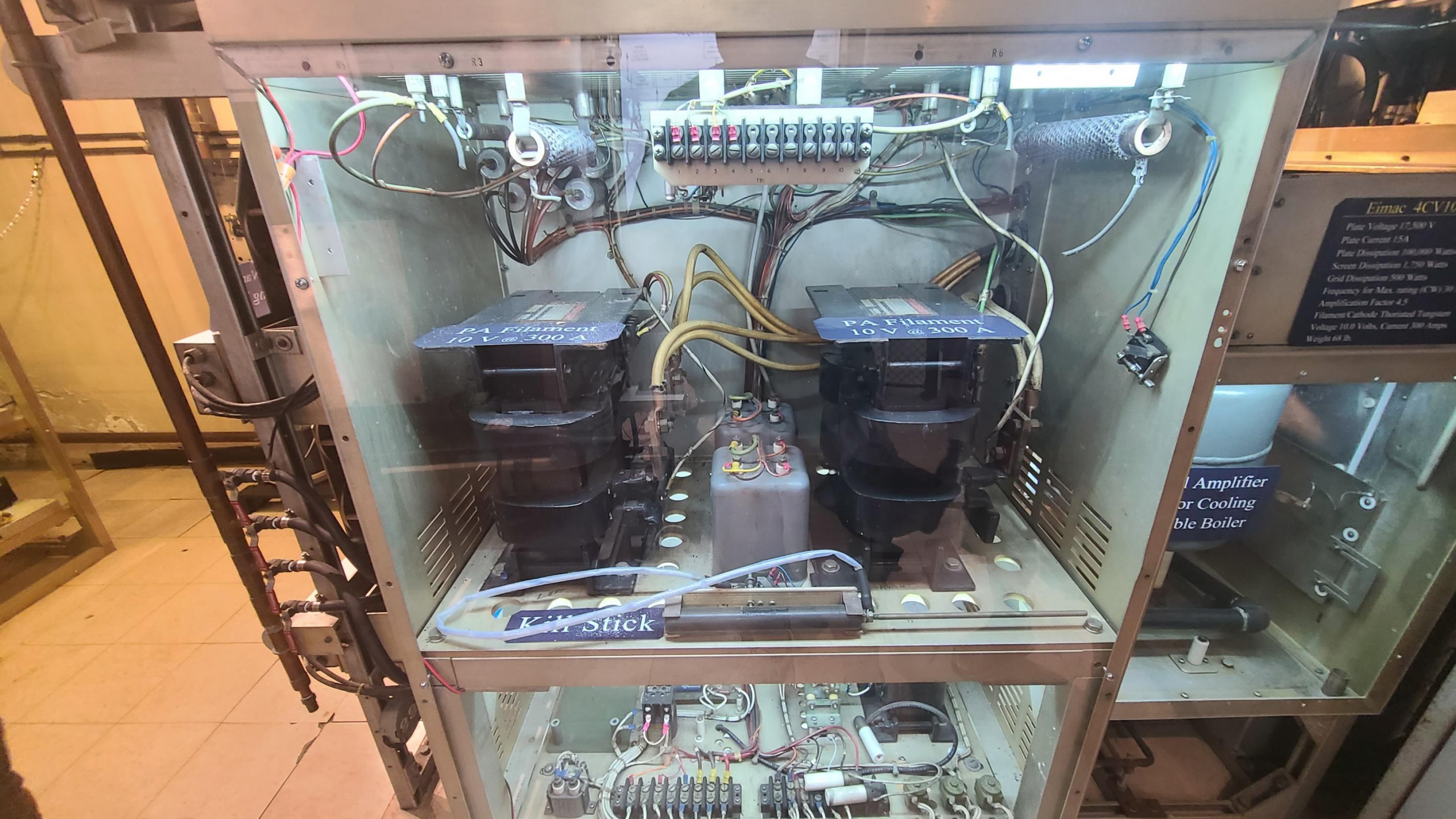
Vac Variat
Water Pur
and
Water Filt



75 Ω
P1.6.100



RESEARCH
EXHIBITION



PA Filament
10 V @ 300 A

PA Filament
10 V @ 300 A

K.H. Stick

Eimac 4CV10

Plate Voltage 17,500 V
Plate Current 15A
Plate Dissipation 100,000 Watts
Screen Dissipation 1,750 Watts
Grid Dissipation 500 Watts
Frequency for Max. rating (CW) 30
Amplification Factor 4.5
Filament Cathode Thoriated Tungsten
Voltage 10.0 Volts, Current 300 Amps
Weight 68 lb.

Amplifier
or Cooling
ble Boiler

Eimac 4CV100,000C

Plate Voltage 17,500 V
Plate Current 15A
Plate Dissipation 100,000 Watts
Screen Dissipation 1,750 Watts
Grid Dissipation 500 Watts
Frequency for Max. rating (CW) 30 MHz
Amplification Factor 4.5
Filament Cathode Thoriated Tungsten
Voltage 10.0 Volts, Current 300 Amps
Weight 68 lb.

**Final Amplifier
Vapor Cooling
Double Boiler**

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Admission Ticket

Maximum Charge: 1.00 per ticket
Admission to the Museum
Free Return
For More Information, call 1-800-235-2355
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Admit One



Typical radio used by VOA listeners

Bethany Station has shortwave transmitters. The original transmitters, built by engineers in 1944, were replaced by Collins transmitters. These three consoles are the original Collins transmitters. The one remaining in the Northwest corner.



821A-1

BY-6



821A-1

DIRECTIONAL WATTMETER



OUTPUT POWER



PA PLATE VOLTAGE



INPUT POWER



PA PLATE CURRENT



Collins Transmitter Remote Tuning Units



DIRECTIONAL WATTMETER



OUTPUT POWER



PA PLATE VOLTAGE



INPUT POWER

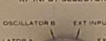


FREQUENCY CONTROL

TUNE START



RF INPUT SELECTOR



CHANNEL SELECTOR



COARSE POSITION



PA PLATE



7 A 1 CONSOLE CONTROL PANEL

DISPLAY



TUNE START



RF INPUT SELECTOR



FILAMENTS



SERVO ACTIVATE



OSCILLATOR A



EXT INPUT B



ations

Tried to boil grain to make granola

CURIOSITY

Installed the wrong transistor in a device to record heart sounds

g to convert milky
k from the sapodilla
tree into rubber



LISTEN to RADIO

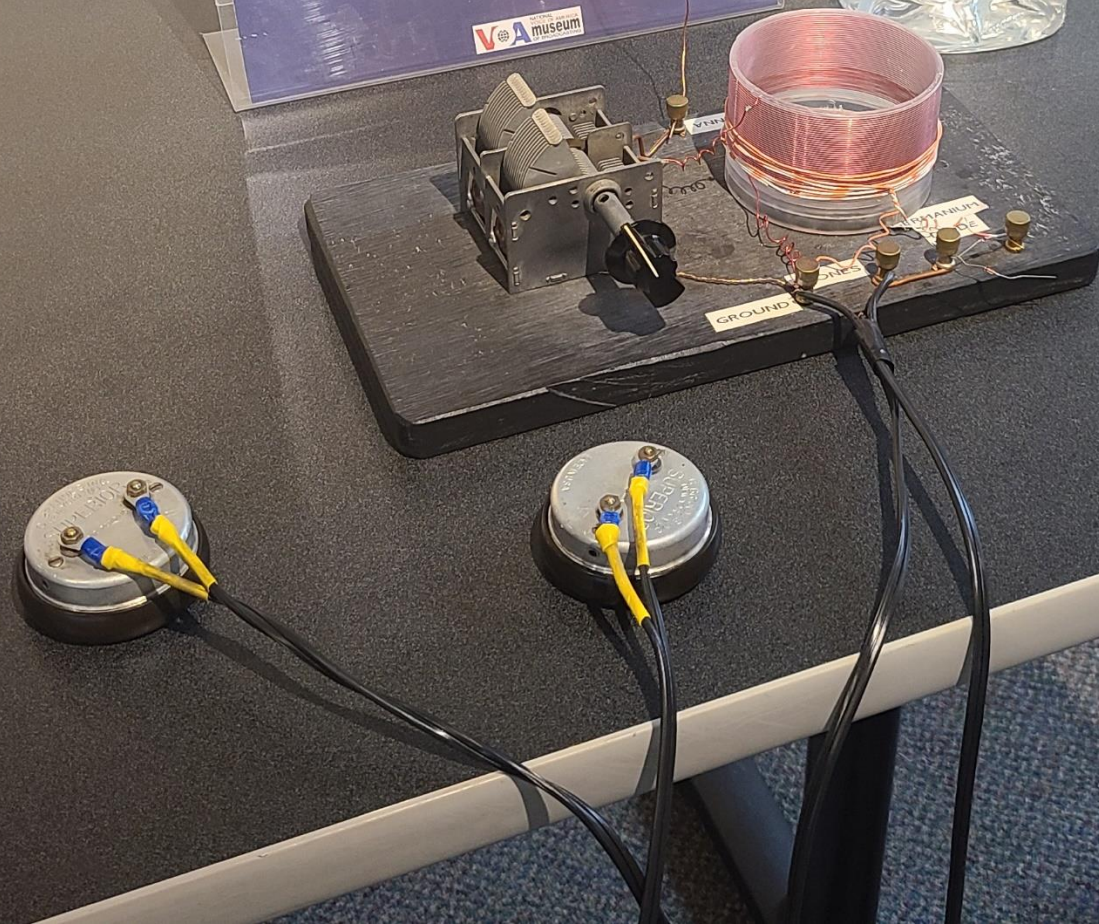
1920s Style

No Electricity – No Batteries

Just an Antenna!

Using the raw power from the radio signal!
Known as a Crystal Radio Set

V&A museum





Guglielmo Marconi's
DeForest Radio
at the Tower's Station
in Glace Bay
Nova Scotia,
Newfoundland.

Donated by Steve O'Grady
from Nova Scotia, nephew
of Alexander Dooley, Marconi's
pioneer employee of 53-years.




Alexander Dooley


5-CENT
AMATEUR RADIO OPERATORS
COMMEMORATIVE POSTAGE STAMP



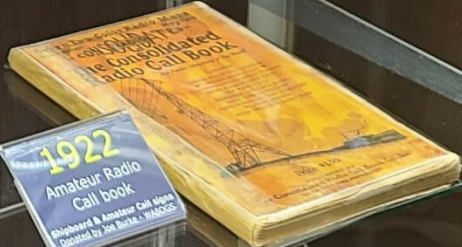
December 15, 1902
Marconi's first Transatlantic Radio
Message was transmitted from this
station at Table Head in Glace Bay,
Nova Scotia to Cornwall, England.



Guglielmo Marconi at Tower's Station.
200-foot wood towers built by shipwrights.




1922
Amateur Radio
Call book



Shipboard & Amateur Call signs
Donated by Jon Burke - WABOZ

Powel Crosley Jr.



RADIO-TELEVISION
CROSLLEY

ICE 2¢ a cake!
Pup Radio
First Low-Cost Radio
13



The Henry Ford of Radio
Here are two early Crosley radios costing a small fraction of what radios were selling for at the time.
A 1921 crystal radio named the Harko costing \$7.00. No batteries - powered by the radio wave energy from the broadcast station.
The 1925 Pup Radio for \$9.75. A one-tube battery-powered radio. Antenna, headset, battery and tubes were sold separately.



6
The Crosley PUP
\$9.75

Lots and lots to see besides the VOA exhibit

- WLW and WLWO room
- Crosley room – showcasing his inventions and innovations
- Development of radio technology room
- Antique radio receiver room
- Classic amateur radio room
- Hands on activities (Morse code, Crystal radio, etc.)
- STEM activity area
- For hams: Room with amateur radio items for sale



Go Bi Bi



Powel and Lewis Crosley were always looking for ways to make their manufacturing more efficient and cost effective. The *Go Bi Bi* was the result of a search for a good use of the scrap wood mounting up in the radio cabinet shop, which up until then was being put in the trash. Marketed only for a short time by Crosley, the *Go Bi Bi* patent was acquired by the Cincinnati based Frank F. Taylor Company and ultimately became the prototype of the classic *TaylorTot*.



Ham Radio Walkie-Talkie 2-meters

This walkie-talkie was developed by Dr. George Sperti from the University of Cincinnati.

Dr. Sperti also made significant contributions to the design of the Proximity Fuze, shown to the right.

In addition, he invented the KVA Power Meter, Aspercreme, Preparation-H, and the Sun Lamp.



Please
DO NOT
TOUCH



Coronado

Spanish for "crowned one."
1930s

This shortwave and AM broadcast receiver was made by numerous manufacturers (Belmont, Wells-Gardner, Kingston and Warwick) for the Gamble-Skogmo stores which included Gambles hardware stores, Red Owl grocery and Snyder drugstores.

This represents the typical radio purchased by the rural community in the 1930s.

Shortwave was a major source of news and information prior to the emergence of network news.

ATWATER KENT RADIO

1926

Atwater Kent
\$70-
8100 Model 35-6

FARE RADIO
STIRS TERROR
THROUGH U.S.

1939
Crosley Radio Corp.
Cincinnati, Ohio

CROSLY



West Chester Amateur Radio Association

WC8VOA

- Enjoys a very close relationship with the museum.
- Provides restoration/maintenance of exhibits.
- Act museum guides for visitors.
- Museum provides space for amateur radio activities and stations.
- Weekly meetings allow visitors and potential hams to get on the air.
- Hosts special activities like JOTA and YOTA.
- The first US Youth on the Air camp was held here and will be held again this year.

Amateur Radio



Job Opportunities

Telecommunications, space, TV & radio.

Amateur Radio is the ideal preparation for a future career in a wide range of science, technology and engineering roles.

There is no better hobby than amateur radio if you are seeking a technological career and it's fun, too! Being a radio amateur provide employers the ideal demonstration of skills they are seeking. Radio amateurs already provide a large proportion of the base in the communications and high technology industries that 30% of Nokia Finland's workforce are radio amateurs. If you are interested in a technical career, amateur radio can be a stimulating and interesting hobby with a significant advantage in the competitive job market.

If you want a fascinating and worthwhile hobby become a radio amateur.

Check out our home at the National Voice of America Museum of Broadcasting

voamuseum.org



WC8VOA

West Chester Amateur Radio Association

Learn About
Amateur Radio

8070 Tylersville Road

www.voamuseum.org



Home

Local

Preset



VOICE OF AMERICA













NO
MOTOR
VEHICLES

Walkway to:
Voice of America
MetroPark
Athletic Complex

This walkway was
made possible
with support from
V.O.A. Museum
Community Foundation
MetroPark

STOP



The club was very welcoming to all, especially if you were a ham.

Be sure to use the GPS address and NOT the address of the museum!

A weekly net, reachable via EchoLink (?), occurs on Mondays.

They also meet in-person every Wednesday. One night is the business meeting and the other weeks they get together to socialize, mentor younger hams, open up the radio room to visitors, and get on the air.

For more information about VOA and WC8VOA:

<http://www.voamuseum.org>

<http://www.voamuseum.org/museum/virtual-tours/>

Questions / Comments?