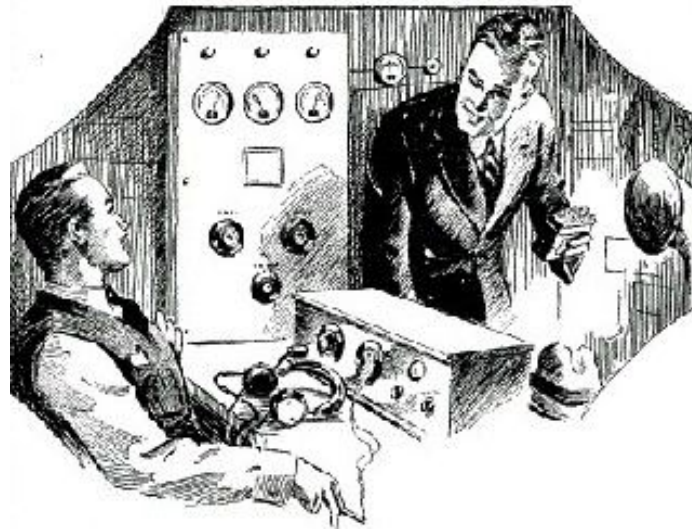


# Vintage Radio - Alive and Well

...Finding, restoring, updating and operating vintage Ham Radio



Presented to the Murray State University Amateur Radio Club  
by Don Snodgrass, K4QKY and Bill Call, KJ4W



# Introduction

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“We need to find ways to insure that our wonderful hobby offers much more than simply the ability to communicate with each other”.



“Real Radio **glows** in the dark”



# Overview

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- ✓ Understanding vintage ham radio
  - Historical perspective
  - What are “boatanchors” anyway?
  - What is AM?
- ✓ Why should anyone care?
- ✓ Getting involved
  - Finding
  - Restoring
  - Operating
- ✓ Conclusions
- ✓ Questions and answers







# Historical perspective...

“understanding our past may help insure our future”

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## Early 1900s

- ✓ Ham Radio is born... spark and long wires rule

## 1940s

- ✓ Technological growth in the war years

## 1950s

- ✓ The “Golden Years”... homebrew, tubes, ssb comes of age

## 1990s

- ✓ Digital revolution





# What are Boatanchors?

**Big....Heavy....Old....Fun !**

"Boatanchor" is a fond term for vintage tube-type ham radio gear.

- Manufacturers like Hallicrafters, Hammarlund, National, Johnson, RME, Heath, Collins, etc. made this gear through the mid 1960's.
  - Emphasis mostly on the AM mode

...Not for everyone.

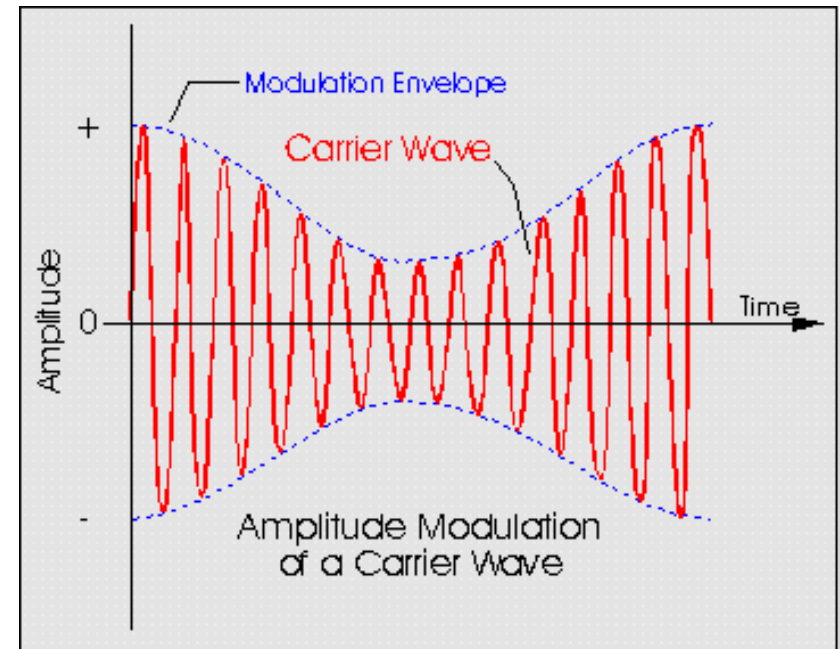
We all have our own preferences.





# What is AM?

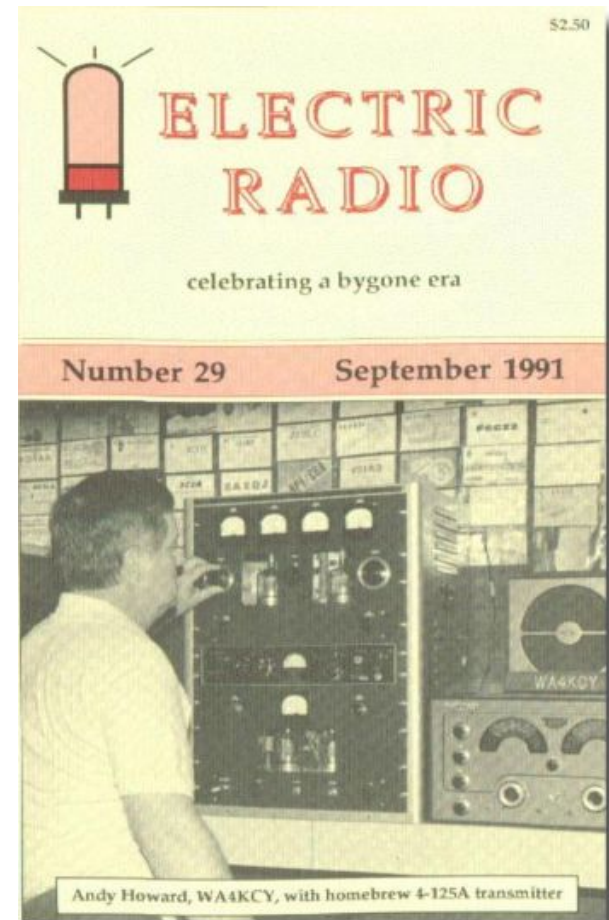
Amplitude Modulation (AM) is the method of superimposing intelligence on a carrier wave by means of varying the amplitude with the wave shape of the intelligence





# Why should anyone care?

- Collecting and operating vintage Ham Radio is gaining popularity.
  - ✓ Nostalgia
    - ...radios with "Heart and Soul"
  - ✓ Learning and experimentation
    - ...made to be worked on, modified, and tinkered with
  - ✓ Good investment
    - ...keep gaining in value
  
- "Real Radio" is NEAT to own and operate! You'll enjoy being associated with others with the same interests.
- "An understanding and appreciation of our past may help insure the future survivability of our great hobby"







# Establish your restoration objectives

## Two extremes:

- ✓ The “purest” approach
  - only clean it up and replace faulty components with New Old Stock (NOS).
- ✓ The “better than original” approach
  - Repaint and modify for greater reliability and improved performance.

The “purest” approach is perhaps best for pre-1940s equipment...





# Finding Vintage Equipment

- EBay
- Newsgroups
  - ✓ rec.radio.amateur
  - .boatanchors
  - ✓ rec.radio.swap
- Websites
  - ✓ The Boatanchor Classifieds
  - ✓ The AM Forum
- Swap Nets
- Hamfests, etc.

The screenshot shows an eBay listing for a "Collins 51S-1 Receiver". The listing includes the eBay logo, navigation links (home, pay, register, sign in, services, site map, help), and a menu (Browse, Search, Sell, My eBay, Community). The item is listed in the category "Computers & Electronics > Radios: CB, Ham". The title is "Collins 51S-1 Receiver" with the subtitle "Ultimate Classic, Fully Tested, ready to use." Below the title, it asks "Bidder or seller of this item? Sign in for your status". A photograph of the receiver is shown with a "Go to larger picture" link. The current bid is "US \$1,225.00 (Reserve met)" with a "Place Bid >" button. The time left is "3 days 7 hours" with a "7-day listing" and "Ends Dec-28-03 15:09:39 PST" with an "Add to Calendar" link. The history shows "6 bids (US \$500.00 starting bid)". The high bidder is "wa3qcv (612 ☆)". The location is "Oklahoma, United States / Oklahoma City". It is a "Featured Plus! Listing" with a "Shipping and payment details" link.



# Restoring Vintage Equipment

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## Steps:

- ✓ Disassemble, inspect, repair and clean
- ✓ Reassemble and test
- ✓ Perform additional repairs and modifications

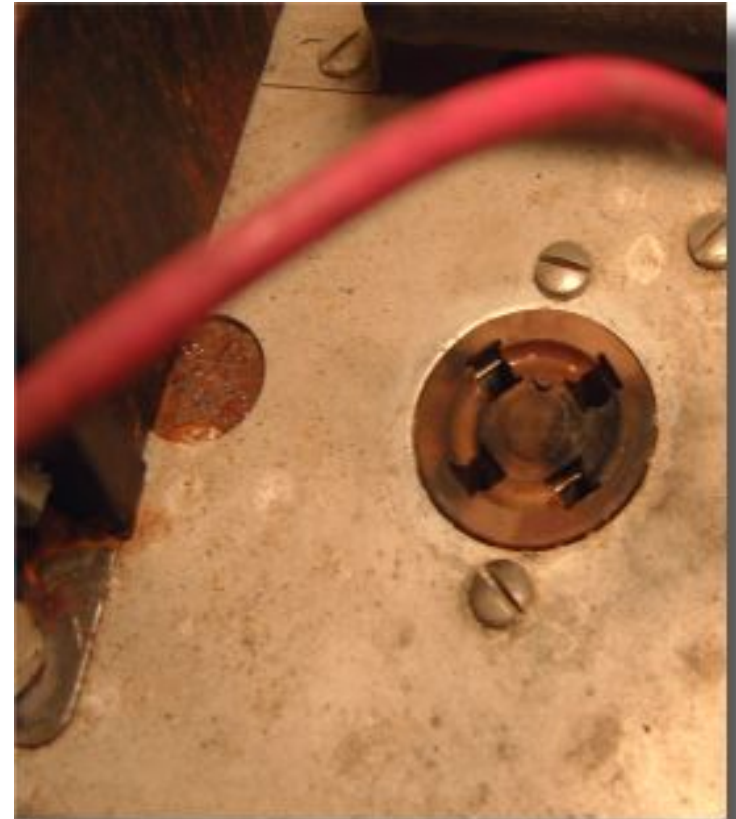




# Step 1 – Disassemble, inspect, repair and clean

## Considerations:

- Do your Internet home work first to find hints, pitfalls, etc.
  - ✓ get a manual (search the web)
- carefully document so you can correctly reassemble
- look for and repair physical defects, e.g. broken connections, corrosion, evidence of arcing, etc.
- free-up switches
- use safe cleaning techniques
- consider replacing electrolytic capacitors
- test all tubes



...carbon track on 866 high voltage rectifier tube socket may provide a "heads up" to a possible bad tube



## Step 2 – Reassemble and test

### Considerations:

- carefully document so you reassemble correctly
- look for and repair physical defects, e.g. broken connections
- free-up switches
- use safe cleaning techniques
- Recheck your work
- Test operate as per operating instruction in the manual

✓ Bring up AC slowly...  
preferably with a Variac

Remember!!!! Watch out  
for **HIGH VOLTAGES!**



A tube tester comes in very handy... consider borrowing one from an "old timer"



## Step 3 – Perform additional repairs and modifications

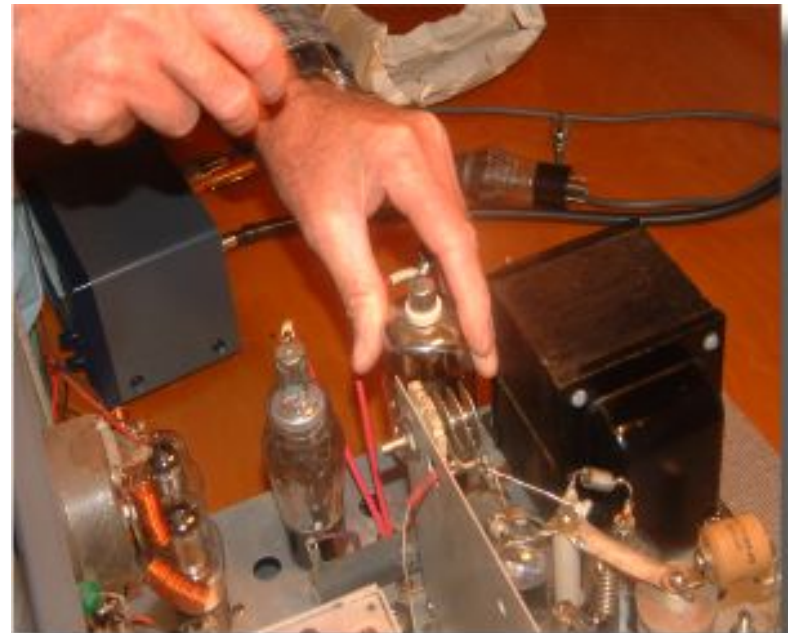
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### Repairs

- ✓ Various sources for parts
  - Antique Electronics Supply, Hosfelt, Mouser, Digikey, etc.

### Modification (if any)

- ✓ Search the web for ideas
  - “solid state” replacements to reduce heat and increase reliability
  - other modifications to improve performance



...replacing less reliable 866 mercury vapor rectifier tubes with 3B28s may make sense.



# Operating Vintage Equipment

## ➤ Assembling the vintage station

- ❑ location, microphone, coax relay, impedance transformers, etc.

## ➤ Getting on the air

- ❑ AM frequencies
- ❑ Signal purity & frequency accuracy
- ❑ Operating protocol

Note: all modern HF rigs have AM mode and are welcome to join in the fun!



By gentleman's agreement, certain portions of each band are set aside for the AM mode:

160 meters	1.880 - 1.900
75 meters	3.880 - 3.885
40 meters	7.290
10 meters	29.000 - 29.100



# Conclusion “Electric Radio” still lives.



Consider restoring and operating your own vintage station. You will have **fun** doing it, **learn** a lot in the process and be doing your part in helping preserve our **heritage**.



# Questions?



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