SETTING UP A HAM SHACK
THE THREE MOST IMPORTANT THINGS

- Location
- Antenna
- Equipment

Hams foolishly spend a ton of money on equipment and give little regard to the most important items!
THE THREE BASIC THINGS YOU NEED

• Transceiver
• Power
• Antenna
APPROACH TO SETTING UP A HAM SHACK

• **Minimalist**
  - Poorly designed, uncomfortable, poorly working radio

• **Extreme**
  - Money no object
  - Palatial shack

• **Just Right**
SHACK LOCATION ISSUES

- Comfort of operator
- Quiet - noise both ways
- Temperature, humidity
- Access to antenna
- Convenience to operator
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POTENTIAL SHACK LOCATIONS

• **Basement**
  – Too cold in winter
  – Too damp – bad for equipment
  – But comfortable in summer

• **Attic**
  – Too cold in winter
  – Too hot in summer

• **Outhouse Shack**
  – Great for privacy
  – Must furnish Heat/AC
  – Security?

• **Spare Bedroom**
  – Best all around for comfort
  – Not good if someone ends up sleeping on floor!
SHACK LAYOUT ISSUES

- All important items within reach
- Plenty of tabletop room
- Room for laptop
- AC / Heat
- Comfortable chair
- A Window is nice
- L shape or U shaped counter
- Rig and keyboard in front, monitor above
BUILDING THE SHACK

- Put together a detailed plan
  - Include end dates and checkpoints to keep on track
  - Include a list of materials needed for purchase
  - Include a list of contractors, if needed
- Nothing important gets done without a plan!
- Without a plan it’s too easy to keep putting it off!
EQUIPMENT TO CONSIDER

- Transceiver
- Backup transceiver or 2nd receiver
- Amplifier
- Computer (desk or laptop?)
- VHF station
- Rotor control
- Antenna switch
- External fans
- Wattmeter
- Antenna Tuner
- TV (for those slow hours!)
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BUT I’M ONLY A TECH!

• Don’t give excuses - Upgrade!
• Build a super VHF / UHF station
  – Don’t use an HT for long QSO’s
• A mobile radio with a power supply works very well
• Connect up a quality external speaker
• Use vertical antenna outside, above roof!
  – The higher the antenna, the further you go
  – NO ANTENNAS INSIDE
• Consider yagis for superior range
ANTENNAS

• Who are you talking to?
  – Don't need much to talk to a bunch of guys stateside
  – Need significant antenna to work DX or contest with reliability
• Antenna in location to minimize feed line runs
• Yagi on 10-20m definitely helps!
• Antennas: *maximum* height but *minimal* visibility
• Have multiple antennas per band
  – Backup in case of failure
  – Allows monitoring while operating
• Safety is paramount
ANTENNA MYTHS AND OTHER BS

- THERE AIN’T NO SUCH THING AS A FREE LUNCH
- Larger, higher antennas will always win
- If it seems to good to be true, it is!
- Lots of people spreading false information
  - NVIS antenna – mostly nonsense
- Consult known antenna gurus
- Experiment! You’ll soon find out!
KNOW YOUR PROPAGATION!

• Understand propagation and when and when not to call
  – Being on THE RIGHT TIME will make a small antenna play great
• You won’t work DX on 80M during the day
• You won’t work anything on 10M at night – (usually)
• How do you learn about propagation?
  – Get on the radio every day!
ANTENNA QUESTIONS

- How high should an antenna be?

- If it didn’t fall down last year, it ain’t high enough!
ANTENNA QUESTIONS

• If I run a wire through the attic will I be able to talk to people?

• Sometimes.

• And you can also get around town on roller skates in lieu of a car.
ANTENNA QUESTIONS

• I live in a development which doesn’t allow antennas. What should I do?

• Move.
FEED LINE

- **RG-8 / RG-214 feed line for HF runs**
  - Best compromise of loss and cost
- **RG-214 or even hard line for VHF runs**
  - Runs over 75 feet require expensive hard line
- **Ladder line for dipoles**
  - Low loss can tolerate high SWR on antenna
- **Most shacks have a combination of all of the above!**
FEED LINE INSTALLATION ISSUES

• How long is the feed line run?
• How to you get from shack to antenna?
  – Feed line best run through basement or attic
  – Provides access through wall with weather and bug proofing
• Problems?
  – Not allowed to drill through wall (rental?)
  – Twin-lead - cannot be run inside
• Solution
  – Use window access panel - not great, but acceptable
OTHER IMPORTANT SHACK ITEMS

- **Grounds!**
  - Electrical safety ground (3-wire plug)
  - Common RF ground: braid to cold water pipe

**EPO Switch** - good idea for safety

- **Telephone wiring and location** - RFI surpression

- **Computer LAN**

- **Cable/Satellite TV** - for those long nights!

- **Refrigerator** - for the cold ones

- **Fire extinguisher** – when conditions get hot!
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BASIC OPERATING SKILLS

• RECEIVING

  – Listen carefully – info may be critical
  – Use good speaker or headphones

• TRANSMITTING

  – Talk in short bursts - not monologues
  – Say the important information; avoid all else
  – ENUNCIATE - don’t mumble; SLOW when needed
  – Use PHONETICS on HF
  – Think before you speak- Have something to say!
BREAKING A PILEUP

• Use your ENTIRE CALL sign with proper phonetics
  – Partial call signs DO NOT WORK
  – Avoid descriptors like QRP, Mobile, State

• Listen….Listen…..Listen!!!
  – Don’t call if you cannot hear the station!!
  – If you can’t hear you won’t know if they’re calling you
  – Never call out of turn or tail-end
  – OK to respond if call is 1 letter off

• Avoid comments and criticisms
EVALUATION

- Make a running list of the things in your shack which annoy you
- Make a list of things which make you less efficient
- Set a time each year to review the list and plan on changes
- Don’t worry about building perfection – one little fix at a time
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The End!