



# RARA Club Station


## Club Overview and Discussion

### September 4<sup>th</sup>, 2019

Presented by Scott Theis, W2LW,  
Chair of Club Station Requirements Subcommittee

Version 4 09/05/2019

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## Tonight's Objectives

- Present a Status Update from the Club Station Requirements Subcommittee (CRS)
- Get input from membership on various topics
- Explore cost/benefit/risk

**THIS IS FACT FINDING — THIS IS NOT OFFICIAL BUSINESS**

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## Presentation Overview

- What are some possibilities for a station?
- What will the station potentially cost and what are the risks to the Club?
- Review of the estimated cost and exposure to the Club

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## Background

- CRS was established by the board in December 2018
- Primary goal is to establish requirements and make a report to the board on options
- We have had four continuous committee members:  
Tim Brown (WB2PAY)      Brian O'Connor (KA2CGB)  
William Springer (N2HYQ)      Scott Theis (W2LW)
- Committee is open to club members to attend

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## Goal

- To present to the Board by the end of 2019 a set of requirements and recommendations
- Then, presumably, a Station Search Subcommittee will be commissioned

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## #1 – Station Uses

- General member operating (onsite and remotely)
- Club events “Social Center”
- Provide occasional “Open Houses” to promote ham radio
- Education – New Hams, RARA Academies and STEM
- Basic contest operating/training
- Workbench/Rig Test Venue

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## Additional Uses (depending on space)

- RARA Academy
- License Courses
- Recruitment
- Board Meetings
- Special Meetings (subcommittee)
- Anchor for the Club

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## What we think it is 'not'?

- A Contest Station (i.e., 100 foot tower with nice big antennas)
- A kW level DX station
- An area for Club General Meetings

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## Questions/Comments

- Are there other uses?

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## #2 – Requirements

- What constitutes what we think would be a minimum station setup?
- What would be optimal for a club our size (depending on member participation)?
- Where is the balance between cost/benefit and risk?

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## Physical Space

- Minimum Space:
  - Enough space for at least 3 operating positions (100 sqft)
  - Enough space for a work area (100 sqft)
  - Space for a modest conference/social room (200 sqft)
- Optimal Space:
  - Bigger conference area for training (800-1000 sqft)
  - Space for storage (reduce/move shed)

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## Physical Space (continued)

- Operating Positions — Each operating position shall have enough space for (minimum):
  - Large HF rig (with power supply)
  - Antenna Tuner
  - Area for a small computer with Monitor or laptop

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## Physical Space (continued)

- Minimum Environment:
  - Site shall have adequate HVAC to handle use requirements including the typical body and equipment heat load
  - HVAC shall be available 24/7
  - Site shall have commercial office space grade lighting
  - Site shall have one or more bathrooms
- Optimal:
  - Sink and place for coffee maker, small refrigerator

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## Property

- Minimum:
  - 8AM to 10PM 7 days/week required (once in can stay)
  - Parking for up to 8 cars
- Optimal:
  - 24/7 Access
  - Parking for 15-20 cars
  - Property be ADA compliant
  - Snow removal
  - Grass cutting (if applicable)

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## Power

- Minimum Power (operating area):
  - 4x 115v 15A, on 2 circuits (grounded)
  - Electrical up to Code (GFI as needed)
  - Reasonable Access to Power Panel
- Optimal Power:
  - 220v 20A
  - Panel Level Suppressor
  - Ability to support emergency power
  - Ability to support a "kill switch"

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## Grounding

- Minimum Grounding:
  - Access to installing one or more outside ground rods
  - Access to a ground other than power ground
- Optimal:
  - Access for bonded connection to circuit panel
  - Grounding Rail in Operating Area and any Workshop

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## Antennas

- Minimum Support:
  - Two HF EFHW/Dipole 20m/40m (66 feet)
  - VHF (High, 2m Vertical)
  - UHF (High, 73cm Vertical Yagi/LP)
  - Ability to set up temporary antennas on grounds
- Optimal:
  - HF Dipole or other for 80m, 160m
  - Ability to get elevation (>30 feet height)
  - 40m vertical (possible multiple)
  - 6m dipole

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## Antennas (continued)

- Minimum:
  - Site/landlord shall allow signal cable pass through
  - Site/landlord shall allow mounting of antennas within the local code requirements
  - Area/space should have adequate grounding/lightning arresting
  - Any permanent ground level antennas must meet minimum safety requirements

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## Antennas (continued)

- Optimal:
  - Site/landlord shall allow mounts for antenna masts on building
  - Site/landlord shall allow mounts for antenna masts on property
  - Access to Roof or access to space or side
  - Ability to bury cable

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## RF Noise

- Minimum:
  - Noise survey shows less than an average of S2 as generated by the environment
  - No heavy RFI/EMI from commercial or residential sources
  - No heavy A/C noise
- Optimal:
  - In a quiet rural area or sparsely populated area

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## RF Noise (continued)

- Measure:
  - Bands: 7MHz up to 440MHz
  - Day and Night with multiple measurements
  - Minimum: baseline radio with waterfall and loop
  - Optimum: spectrum analyzer
- Survey:
  - Proximity to local sources such as radio, TV or commercial transmitters

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## Internet Service Provider (ISP)

- Minimum:
  - Location must support one or more ISP services
  - Must have at least 1 x 5Mb service

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## Equipment

- Minimum:
  - Use club donated equipment plus FT-450D (remove equipment for field events)
  - Club antennas
- Optimal:
  - One IC-9700 or IC-7300 (with computer) for remote operation

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## Questions/Comments

- Are we missing anything IMPORTANT?
- Are the “minimums” too low, too high?

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## #3 Cost

- **These figures are obviously estimates**
- To the extent possible, donated items will be used
- These are all 'minimum station' estimates
- All items are counted as month-to-month and *pro rated* if annual (like insurance)


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## Cost — You Get What You Pay For

- Optimistic/minimalist approach
  - Bare "minimum" on requirements
  - Bit like a permanent event setup
- Pessimistic:
  - Closer to "optimal"
  - More space
  - More initial work and investment on electrical, grounding, equipment


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## Cost — Setup

Item	Optimistic	Pessimistic
Up front improvements	1,000	5,000
Furnishings	1,000	2,000
Antennas (and basic grounding)	200	500
Computers(s)	—	1,000
Software	—	300
Keying/or Access System	100	500
Alarm and/or Video	<u>—</u>	<u>400</u>
Total	2,300	9,700


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## Cost — Month to Month

Item	Optimistic	Pessimistic
Rent/Mortgage	500	800
Utilities	150	200
Other	100	200
Insurance (not covered under club)	<u>—</u>	<u>100</u>
Monthly Total	750	1,300
Annualized	9,000	15,600


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## Total Exposure (Very Rough Total)

	Optimistic	Pessimistic
Two-Year Lease/Option	<u>20,300</u>	<u>40,900</u>
Three-Year Lease/Option	<u>29,300</u>	<u>56,500</u>

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- ## Estimated Total Cost
- At absolute **LEAST, 12-13K per year for two years** assuming the initial cost is reduced to lowest possible
  - If we do a two-year introduction/trial, that is 25-30K exposure to the Club (assuming a two-year lease)

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## Questions/Comments

- Anything we're forgetting?

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## #4 – Financing Options

- Sources
- Risks

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## Financing Sources

- Club General Fund
- General Membership Fees
- Shack Use Fees
- Fund Raising Campaign
- External Grants
- Member Donations

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## Risks

- Exposure to General Fund — **COULD DEplete UP TO HALF OR MORE OF OUR CURRENT CASH RESERVE**
- Winddown
  - Must pay to end of lease
  - If purchased/mortgaged, must endure process of selling

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## Questions/Comments

- Should the club consider raising general membership fees to defray some of the costs?
- Should there be tiers of membership with cost for the station?
  - Minimal access, 24/7 access, remote access
- Should the club finance with no addition costs to members for the first two years?

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## #5 Management

- A Subcommittee would draft the first set of rules and management
- Board would select (get a volunteer) a person to be the Station Manager (should probably be a board member for the first year or two of operation)
- Access Control

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## Management

- Member participation in setup and maintenance will be required
- Shack set and operation will rely members providing all labor


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## Questions/Comments

- Should non-members be allowed access?
  - Obviously for events or an open house
  - Can a member bring a guest

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# General Comments

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