



QRP WHY NOT?

QRP What, Why & How

Jim Stafford, W4QO

With foundation slides from

Phil Salas - AD5X

ARRL 2005 Bill Orr, W6SAI, Technical Writing Award Winner

ad5x@arrl.net



QRP WHY NOT?

Definition

- ◆ QRP: Decrease Power
 - Or, QRP?: Shall I decrease power?
- ◆ Originally used to give some relief from the broad spark signals in the early maritime wireless service
- ◆ In Amateur Radio, it refers to low power operation.



QRP WHY NOT?

History of QRP

- ◆ 1960: K6JSS started the QRP ARCI
 - Originally 100w – then to world standard 5 w (1981)
- ◆ Definitions:
 - High Power: > 500 watts input
 - Medium power: 100-500 watts input
 - Low power: < 100 watts input (200 watts PEP)
 - 5 watts CW output OR 10 watts PEP SSB output
 - QRP_p: Milliwatters - Less than one watt output power



QRP WHY NOT?

QRP Objective

- ◆ Increase equipment and antenna efficiencies
 - Careful impedance matching
 - More efficient output coupling
 - More effective antennas
- ◆ Improve operating proficiency
 - Bands vs time-of-day
 - Frequency vs desired distance
- ◆ Improve design efficiency
 - 1) Size & weight decrease and maximum output power
 - 2) Minimize current draw
 - No lamps (except LEDs)
 - No digital display unless LCD
 - Maximize TX efficiency
 - 3) Use few components & pack the board tightly
 - 4) Use ICs if possible
 - 5) Sensitive RX - If you can't hear'em, you can't work'em



QRP WHY NOT?

QRP Motivation

- ◆ Challenge of low power contacts
 - 5 watts is 13 dB below 100 watts (two S-units)
 - 5 watts is 23 dB below 1000 watts (four S-units)
- ◆ No interference to TV, stereo, intercom, telephone, etc.
- ◆ Simplicity of home-brew QRP equipment
 - Learn to apply electronic theory
 - Build low power emergency/portable equipment
- ◆ Low cost way to get on the air and get that code speed up!



QRP WHY
NOT?

QRP Rules for Success

- ◆ Call strong stations
 - If a weak station is QRO, he may not hear you.
- ◆ It is better to answer a CQ
 - Choose a very clear frequency when calling CQ
 - Call CQ properly
- ◆ Use an effective antenna
 - Only a masochist uses a poor antenna with QRP
- ◆ Be prepared to listen a lot



QRP WHY NOT?

How far can you go?

- ◆ W4QO – 62 countries in Feb. 2006 ARRL DX contest – isn't this at a sunspot minimum?
- ◆ KO4WX
California to New Zealand – 5 W and MP-1
- ◆ W4DU ARRL 160 Meter Contest - 2000
45 states, 22 countries and 3 continents
-5 watts and GAP Vertical
700 mw accidental QSO
- ◆ Ned Mountain – QRP Bicycle Mobile
SSB to Siberia (he has the tape!)



QRP WHY NOT?

QRP Organizations

- ◆ G-QRP Club (SPRAT)
 - <http://www.gqrp.com>
- ◆ QRP ARCI (QRP Quarterly)
 - www.qrparci.org
- ◆ American QRP Club (QRP Homebrewer)
 - www.amqrp.org
- ◆ NoGaQRP Club
 - www.nogaqrp.org



QRP WHY NOT?

QRP Contesting

- ◆ Great way to pick up QSOs, countries, states
- ◆ Good operators with good ears
- ◆ QRP ARCI - Sprints – QSO Parties
- ◆ Adventure Radio Society – 1st Monday month
- ◆ FOX Hunts – each Tuesday at 2100 eastern
- ◆ Dozens of major contests each year have QRP categories – why? They want you to give them some QSOs!



QRP WHY NOT?

QRP Awards





QRP ^{WHY} What kind of equipment? NOT?

- ◆ Normal 100 watt rigs turned down to QRP levels
- ◆ New QRP Rigs
 - SGC-2020 MFJ-9xxx Argonaut V
 - Elecraft K1, K2, KX-1 plus T-1 tuner, MP-1, etc.
 - FT-817 IC-703
- ◆ Kits
 - Many club kits – NorCal, AmQRP, NoGA
 - Ten-Tec MFJ Cub Wilderness Radio
 - Small Wonders Labs – your best first QRP rig!
SW-40 DSW-20 Rockmite (\$30)



QRP WHY NOT?

NoGaQRP Club

- ◆ Serving the North GA area – Macon to Blairsville
- ◆ Meets 2nd Saturday – Wieuca Road Bap Church
- ◆ Meetings start at 10AM until ????
- ◆ Every meeting is Show and Tell – amazing stuff
- ◆ Other events – Field Day, QRPTTF, FYBO, etc.
- ◆ Projects: NoGaWatt meter, NoGaPIG, GA Sierra, Guppy, NoGaNaut, Georgia Cracker
- ◆ Fun events – Run for the Kudzu, etc.



QRP WHY NOT?

Most fun in Ham Radio!

- ◆ 1. Get a used rig – a \$200 transceiver from eBay
- ◆ 2. Listen/Study/Get your license/callsign
- ◆ 3. Learn the code (CW) (Charlie Whiskey)(didah)
- ◆ 3. Upgrade to General (5 wpm)/get a 1x3 callsign
- ◆ 4. Get your QSL made – cheapqsl.com (\$12)
- ◆ 5. Make a CW contact, then 10, then 100 (SKCC)
- ◆ 6. Build your own rig – SW-40 or TenTec
- ◆ 7. Go for an award – WAS, WAC, collecting QSLs.
- ◆ 8. Enter a contest – Spartan Sprint, QRP ARCI Party
- ◆ 9. Build antenna & go to THE FIELD – FD, a park
- ◆ 10. Upgrade to Extra Class



QRP WHY NOT?

Conclusion

- ◆ QRP challenge: Use the least power necessary to establish and maintain communications
- ◆ QRP reduces QRM, and re-introduces an element of adventure & challenge that was part of amateur radio's earliest days.
- ◆ QRP gear is compact and portable.
- ◆ QRP gear is great for the experimenter & homebrewer



QRP WHY NOT?

◆ What can you do with QRP?

- Anything = use the skill, tenacity and patience to do it!!

◆ Just remember:

- “Power is no substitute for skill” (QRP ARCI)
- QRP – When you care enough to use the very least!
- “Use wits, not watts” (unknown)
- “It is vain to do with more, what can be done with less”
(William of Occam, 1290-1350)
- QRP- The Thrill is Back! (W4QO)