

# Ham Radio Operations

How to make a successful contact on Ham Radio

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# Overview

- ▶ What you need to know before you talk
- ▶ Answering your first CQ
- ▶ Calling your first CQ
- ▶ Repeater QSOs

# Before you talk.....there are some things you need to know

- ▶ RST Signal Reporting System
- ▶ Q Signals
- ▶ Phonetic Alphabet
- ▶ Country Call Prefix lists
- ▶ Grid Squares
- ▶ QRZ.com
- ▶ RepeaterBook.com - ARRL Repeater Guide

# RST Signal Reporting System

## ▶ Readability

- ▶ 1-Unreadable.
- ▶ 2-Barely readable, occasional words distinguishable.
- ▶ 3-Readable with considerable difficulty.
- ▶ 4-Readable with practically no difficulty.
- ▶ 5-Perfectly readable.

# RST Signal Reporting System

- ▶ Signal Strength
  - ▶ 1-Faint signals barely perceptible.
  - ▶ 2-Very weak signals
  - ▶ 3-Weak signals.
  - ▶ 4-Fair signals.
  - ▶ 5-Fairly good signals.
  - ▶ 6-Good signals.
  - ▶ 7-Moderately strong signals.
  - ▶ 8-Strong signals.
  - ▶ 9-Extremely strong signals.

# RST Signal Reporting System

- ▶ Tone - Only used on CW
  - ▶ 1-Sixty-cycle ac or less, very rough and broad.
  - ▶ 2-Very rough ac, very harsh and broad.
  - ▶ 3-Rough ac tone, rectified but not filtered.
  - ▶ 4-Rough note, some trace of filtering.
  - ▶ 5-Filtered rectified ac but strongly ripple-modulated.
  - ▶ 6-Filtered tone, definite trace of ripple modulation.
  - ▶ 7-Near pure tone, trace of ripple modulation.
  - ▶ 8-Near perfect tone, slight trace of modulation.
  - ▶ 9-Perfect tone, no trace of ripple or modulation of any kind.

# Q Signals - Shorthand for Ham Radio

- ▶ The **Q-code** is a standardized collection of three-letter codes all of which start with the letter "Q". It is an operating signal initially developed for commercial radiotelegraph communication and later adopted by other radio services, especially amateur radio.
- ▶ Although Q-codes were created when radio used for Morse Code exclusively, they continued to be employed after the introduction of voice transmissions. To avoid confusion, transmitter call signs starting with "Q"

# Q Signals - Shorthand for Ham Radio

## ▶ Some often used Q Signals

- ▶ **QSO** I can communicate with \_\_\_\_\_ direct (or relay through \_\_\_\_\_). Can you communicate with \_\_\_\_\_ direct or by relay?
- ▶ **QTH** My location is \_\_\_\_\_. What is your location?
- ▶ **QRM** Your transmission is being interfered with \_\_\_\_\_  
(1. Nil; 2. Slightly; 3. Moderately; 4. Severely; 5. Extremely.) Is my transmission being interfered with?
- ▶ **QSB** Your signals are fading. Are my signals fading?
- ▶ **QSY** Change to transmission on another frequency (or on \_\_\_\_\_kHz).  
Shall I change to transmission on another frequency (or on \_\_\_\_\_kHz)?
- ▶ **QRX** I will call you again at \_\_\_\_\_hours (on \_\_\_\_\_kHz).  
When will you call me again? Minutes are usually implied rather than hours.
- ▶ Download and print the Q Signal list from [ARRL.ORG](http://ARRL.ORG)



# Phonetic Alphabet

- ▶ There are lots of variation on this one! But, try to stick with the “standard” phonetic alphabet.

A--Alpha

J—Juliette

P—Papa

W--Whiskey

B--Bravo

I--India

Q—Quebec

X--X-ray

C--Charlie

K—Kilo

R—Romeo

Y--Yankee

D--Delta

L—Lima

S—Sierra

Z--Zulu

E--Echo

M—Mike

T--Tango

F--Foxtrot

N—November

U--Uniform

G--Golf

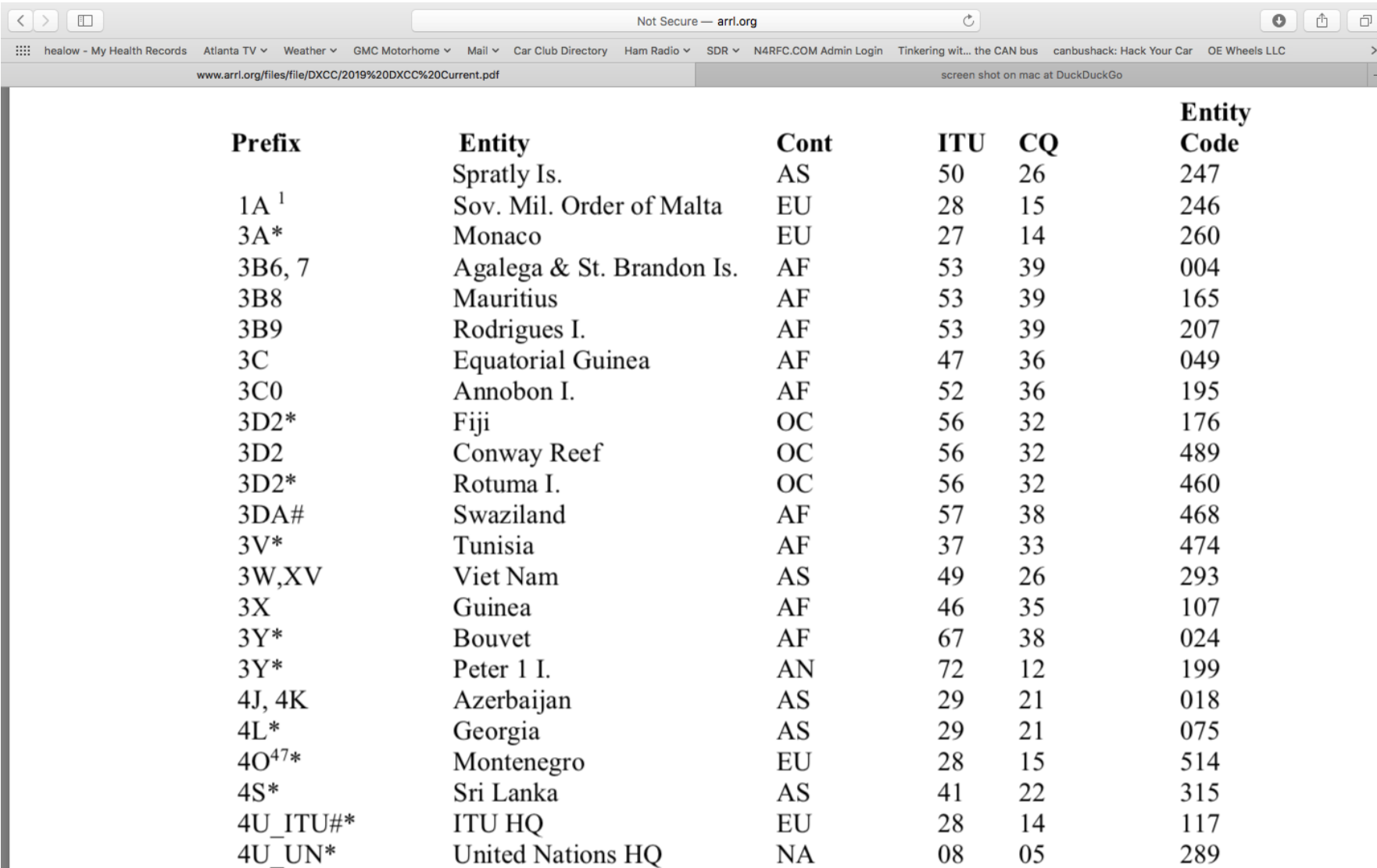
O—Oscar

V--Victor

# ARRL Country List

- ▶ PDF or printed list of DXCC countries call sign prefixes
  - ▶ Each country has a specific set of prefixes for their amateur calls. You can tell what country the station is located by the call prefix.
  - ▶ Download from [ARRL.ORG](http://ARRL.ORG)
- ▶ [QRZ.COM](http://QRZ.COM) - you can look up the information and a web page for each amateur stations from the QRZ database
  - ▶ [QRZ.COM](http://QRZ.COM) can also lookup basic information for your electronic log. Subscription required.
  - ▶ QRZ has integrated electronic logbook with electronic QSL (Confirming contacts)

# ARRL Countries List



Prefix	Entity	Cont	ITU	CQ	Entity Code
	Spratly Is.	AS	50	26	247
1A <sup>1</sup>	Sov. Mil. Order of Malta	EU	28	15	246
3A*	Monaco	EU	27	14	260
3B6, 7	Agalega & St. Brandon Is.	AF	53	39	004
3B8	Mauritius	AF	53	39	165
3B9	Rodrigues I.	AF	53	39	207
3C	Equatorial Guinea	AF	47	36	049
3C0	Annobon I.	AF	52	36	195
3D2*	Fiji	OC	56	32	176
3D2	Conway Reef	OC	56	32	489
3D2*	Rotuma I.	OC	56	32	460
3DA#	Swaziland	AF	57	38	468
3V*	Tunisia	AF	37	33	474
3W,XV	Viet Nam	AS	49	26	293
3X	Guinea	AF	46	35	107
3Y*	Bouvet	AF	67	38	024
3Y*	Peter 1 I.	AN	72	12	199
4J, 4K	Azerbaijan	AS	29	21	018
4L*	Georgia	AS	29	21	075
4O <sup>47*</sup>	Montenegro	EU	28	15	514
4S*	Sri Lanka	AS	41	22	315
4U_ITU#*	ITU HQ	EU	28	14	117
4U_UN*	United Nations HQ	NA	08	05	289

# To log or not to log, that is the question

- ▶ FCC No longer requires logging your QSO. However, most Hams still do.
- ▶ There are 3 categories for logging amateur radio activity.
  - ▶ Legal, invaluable in proving your innocence in an interference complaint.
  - ▶ Operationally, invaluable when filing out that QSL card that took months to arrive.
  - ▶ Personally, a log is a personal history reminding of the people and places you have made contact with in the past.
- ▶ How to log? Paper or Electronic?
  - ▶ Paper
    - ▶ Low cost
    - ▶ Simple
    - ▶ Portable
    - ▶ Doesn't require a computer
  - ▶ Electronic
    - ▶ Easy QSL generation - Necessary for LOTW, EQSL, Club Log, etc.
    - ▶ Sort, find, and report QSO quickly
    - ▶ Auto Fill log using QRZ Database

# On Line Logging - EQSL

Browser window: eqsl.cc

Navigation: healow - My Health Records Atlanta TV Weather GMC Motorhome Mail Car Club Directory Ham Radio SDR N4RFC.COM Admin Login Tinkering wit... the CAN bus canbushack: Hack Your Car OE Wheels LLC

InBox - eQSL.cc

01:36 UTC

Call sign:

FAQ Contact Us

Help Us

Donate: US\$ 1.00 per month

**MFJ**  
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MFJ Enterprises  
Welcome New User  
YC3MAY  
Mohammad Ariefandhy from INDONESIA

Site News  
| The eQSL web site is now in its 5th generation of look-and-feel. If you ... (more)

Tweets by @N5UP

N5UP at eQSL @N5UP  
Facelift for 2021 at #eQSL is the 5th major revamp of the look-and-feel since 1998, including

Embed View on Twitter

Last Heard  
40M: WB5JJJ, ZF2WF, more...

Latest eAwards  
Most eAwards:  
FA37D.474DX.F6FCI.Z11BOD.FA3CAZ...

screen shot on mac at DuckDuckGo

Sort order: Callsign, Date/Time, then Band

Limit to 1 Callsign:   
Leave blank to retrieve ALL callsigns

QSO Date range: 11/01/2014 - 02/13/2021 (MM/DD/YYYY)

Only Band: ALL

Only Mode: CW

Confirmed?:  Only Unconfirmed

Apply Filters

How to REJECT an eQSL

How to CONFIRM an eQSL manually

Problem with a log entry? It won't move to the Archive?  
How to move an entry to the Archive without displaying it

New eQSLs								
LIMITS=>	01Nov14 - 13Feb21	CW						
Action	Call sign	Date/Time	Band	Mode (SubMode)	Country	AC	Signal Report and Comments	Actions
	AA5KV	15Oct2015 22:31	30M CW		USA	Y	579	<input type="checkbox"/> Archive
	AA5KV	02Jan2017 23:09	40M CW		USA	Y	589	<input type="checkbox"/> Archive
	AA8WH	10Jan2018 14:40	30M CW		USA			<input type="checkbox"/> Archive
	AA9AA	09Jan2018 21:38	30M CW		USA	Y	599 QRP	<input type="checkbox"/> Archive
	AB1OC	03Jul2020 01:13	80M CW		USA	Y	599	<input type="checkbox"/> Archive <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	AJ4YA	03Jun2016 23:21	40M CW		USA		599	<input type="checkbox"/> Archive
	CO8CY	25Aug2016 23:13	40M CW		CUBA	Y		<input type="checkbox"/> Archive
	CT1BQH	23Apr2018 21:56	20M CW		PORTUGAL	Y	599	<input type="checkbox"/> Archive
	EC7ABV	27Dec2018 18:00	20M CW		SPAIN		599	<input type="checkbox"/> Archive <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
	HB9CVQ	21Mar2018 22:31	30M CW		SWITZERLAND	Y	559	<input type="checkbox"/> Archive

# Calling CQ

- ▶ What does CQ Mean? It means "I wish to contact any amateur station" A general call to have a QSO with another amateur radio station.
- ▶ Find a quiet frequency, make sure you are in the proper section of the band for your license class.
- ▶ Keep your call short three to four CQs, then your call, rinse and repeat
  - ▶ CQ CQ CQ this is N4RFC N4RFC Nancy four Romeo Foxtrot Charley

# Your first QSO

- ▶ Ready for your first QSO? First, LISTEN LISTEN LISTEN !!
  - ▶ Listen to some QSOs to get the feel for the exchange and conversation
  - ▶ Start with calling a station that has called a CQ.
  - ▶ Tune in the station carefully so you are exactly on frequency.
  - ▶ Give the other station's call followed by your call. Your call always last.
  - ▶ “KM4IEH this is N4RFC November Four Romeo Foxtrot Charley .. Go Ahead”
  - ▶ When you are answered, give you call, the other stations report, your QTH and your Name.
  - ▶ Example: “KM4IEH this is N4RFC. Thanks for the come back, Copy you 59 in Woodstock Georgia and my name is Bob. How copy? KM4IEH this is N4RFC.”

# VHF & UHF Repeater QSOs

- ▶ A different technique is used on Repeater QSOs
  - ▶ On HF a call could be answered from a station almost anywhere on the earth.
  - ▶ A repeater has a more limited coverage area
  - ▶ Repeaters are often monitored by local stations and mobiles
  - ▶ A brief call asking if anyone is listening or stating you are listening.
  - ▶ New contact -> Give signal report, your QTH, and Name
  - ▶ If repeater is busy, keep contact short.
  - ▶ Listen for other stations breaking in -> Acknowledge them and give turn to talk



# VHF & UHF Repeater QSOs

- ▶ Resources for repeater operations

- ▶ ARRL Repeater Guide

- ▶ [www.repeaterbook.com](http://www.repeaterbook.com) - Online - Android App

- ▶ CARS website ->

- [https://www.wx4car.org/uploads/8/3/7/7/83773582/repeatersystem\\_etiquette.pdf](https://www.wx4car.org/uploads/8/3/7/7/83773582/repeatersystem_etiquette.pdf)