

Scouts Communicating with the World



Jamboree on the Air 19 October 2013



<http://www.scouting.org/jota.aspx>

CAMP WARREN LEVIS, GODFREY, ILLINOIS

OCTOBER 19–20, 2013



PARTICIPANT NAME _____

STATION AND QTH _____

SIGNED _____

JAMBOREE-ON-THE-AIR CONTACT LOG

[illegible]

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130-885
2013 Printing

JOTA Rules-

Stations should call "CQ Jamboree," or answer stations doing so. Any authorized frequency may be used. It is recommended that stations use the agreed World Scout Frequencies, listed elsewhere in this document. To avoid congestion, use close-by frequencies.

JOTA is not a contest. The idea is not to contact as many stations as possible during the weekend.

Although the worldwide JOTA is organized in October, Scouts can meet on the air at other times during the year. Regular Scout nets (a pre-arranged time and frequency when operators meet) are organized nationally or regionally. An updated list of these nets can always be found in the latest *World JOTA Report*, which is published by the World Scout Bureau.

Scout Station Call Signs-

Each licensed Amateur Radio station has a unique identifier known as a "call sign." The first letters specify the country. Here are call signs of well-known stations that can often be contacted:

- **HB9S** -- World Scout Bureau, Geneva Switzerland
- **K2BSA** -- Boy Scouts of America National Office, Dallas TX
- **JA1YSS** -- Boy Scouts of Nippon National Office, Tokyo Japan
- **PA6JAM** -- Scouting Nederland National Station, Sassenheim Netherlands
- **5Z4KSA** -- The Kenya Scouts Assoc. Paxtu Station, Nyeri Kenya
- **VK1BP** -- The Scout Assn. of Australia National Station, Canberra Australia
- **GB2GP** -- The Scout Assn., Gilwell Park, London UK
- **XE1ASM** -- Boy Scouts of Mexico
- **DX1BSP** -- Boy Scouts of Philippines
- **TF3JAM** -- Scouts of Iceland

World Scout Frequencies-

Band	SSB (phone)	CW (morse)
80 m	3.690 & 3.940 MHz	3.570 MHz
40 m	7.090 & 7.190 MHz	7.030 MHz
20 m	14.290 MHz	14.060 MHz
17 m	18.140 MHz	18.080 MHz
15 m	21.360 MHz	21.140 MHz
12 m	24.960 MHz	24.910 MHz
10 m	28.390 MHz	28.180 MHz
6 m	50.160 MHz	50.160 MHz

Scouting Countries

This is a complete list of the countries where Scouting exists. The asterisks mark countries that have third-party operating agreements with the U.S. This means people other than the licensed amateur radio operator can send messages or talk with others via amateur radio communication between the U.S. and that country.

- Algeria
- Angola
- Argentina*
- Armenia
- Australia
- Austria
- Azerbaijan
- Bahamas
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize*
- Bhutan
- Bolivia*
- Bosnia and Herzegovina*
- Botswana
- Brazil*
- Brunei
- Brunei Darussalam
- Bulgaria
- Burkina Faso
- Burundi
- Cameroon
- Canada*
- Cape Verde
- Central African Republic
- Chad
- Chile
- Colombia*
- Comoros*
- Congo
- Costa Rica*
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Dominica*
- Dominican Republic*
- Ecuador*
- Egypt
- Estonia
- Ethiopia
- Fiji
- Finland
- France
- Gabon
- Gambia*
- Georgia
- Germany
- Ghana*
- Greece
- Grenada*
- Guatemala*
- Guyana*
- Haiti*
- Honduras*
- Hong Kong
- Hungary
- Iceland
- Ireland
- Israel*
- Italy
- Ivory Coast
- Jamaica*
- Japan
- Jordan*
- Kenya
- Kiribati
- Kuwait
- Latvia
- Lebanon
- Lesotho
- Liberia*
- Libya
- Liechtenstein
- Luxembourg
- Macedonia
- Madagascar
- Malaysia
- Maldives
- Malta
- Mauritania
- Mauritius
- Mexico*
- Moldavia
- Monaco
- Mongolia
- Morocco
- Mozambique
- Namibia
- Nepal
- Netherlands
- Netherlands Antilles
- New Zealand
- Nicaragua*
- Niger
- Nigeria
- Norway
- Pakistan
- Palestinian Authority
- Panama*
- Papua New Guinea
- Paraguay*
- Peru*
- Philippines*
- Poland
- Portugal
- Qatar
- Republic of China
- Romania
- Russian Federation
- Rwanda
- St. Lucia*
- St. Vincent*
- San Marino
- Senegal
- Seychelles
- Sierra Leone*
- Singapore
- Slovakia
- Slovenia
- South Africa*
- South Korea
- Spain
- Sri Lanka
- Sudan
- Surinam
- Swaziland*
- Sweden
- Switzerland
- Tajikistan
- Tanzania
- Thailand
- Togo
- Trinidad and Tobago*
- Tunisia
- Turkey*
- United Arab Emirates
- Uganda
- United Kingdom*
- United States
- Uruguay*
- Venezuela*
- World Scout Bureau, HB9S
- Yemen
- Yugoslavia
- Zambia
- Zimbabwe

Lewis and Clark Council – Piasa Bird District
Camp Warren Levis, Godfrey, IL
K9HAM - Lewis and Clark Radio Club
(Operator _____)

Amateur Call Signs Heard and Worked:

States Contacted:

Countries Contacted:

Scouts Present:

Q Codes

The “Q” code was originally developed as a way of sending shorthand messages in Morse Code. However, it is still used by operators for voice communications. Some of those in common use are listed below:

QRA What is your call sign?

QRM I have interference (manmade).

QRN I am receiving static (atmospheric noise).

QRT I am closing station.

QRX Please wait.

QRZ Who is calling me?

QSB Your signal is fading.

QSL I acknowledge your contact.

QSO Are you in contact with _____?

QSY Change frequency to _____

QTH My location is _____

Phonetic Alphabet

A - Alpha	N - November	0 - Zero
B - Bravo	O - Oscar	1 - Wun (One)
C - Charlie	P - Papa	2 - Two
D - Delta	Q - Quebec	3 - Tree (Three)
E - Echo	R - Romeo	4 - Fower (Four)
F - Foxtrot	S - Sierra	5 - Fife (Five)
G - Golf	T - Tango	6 - Six
H - Hotel	U - Uniform	7 - Seven
I - India	V - Victor	8 - Ait (Eight)
J - Juliet	W - Whiskey	9 - Niner (Nine)
K - Kilo	X - X-ray	
L - Lima	Y - Yankee	. - decimal (point)
M - Mike	Z - Zulu	. - (full) stop

Write your name in the Phonetic alphabet:

Write your Troop\Pack in the Phonetic alphabet:

Write your scout rank in the Phonetic alphabet:

Amateur Radio Terms

ATV	Amateur television. Sometimes called Fast Scan TV. Same as commercial TV.
CQ JOTA	A request for any other JOTA station to answer my call.
CW	A mode for sending messages by Morse Code. (CW = Constant Wave)
FM	Frequency modulation
Ham	Slang for amateur radio operator.
Logging	To record details of the contacts made for future reference. The log includes call signs, time, frequency, names, etc.
Net	A group of stations who meet "on the air" at a specified time for a specific purpose.
Packet	A digital form of communications as in teletype but more reliable. Requires a computer, an interface box (TNC), and a radio.
QSL Card	A written acknowledgment that a contact has been made by amateur radio between the two parties. QSL cards are usually of the postcard variety.
RTTY	Radio teletype.
Schedule	A prearranged meeting "on the air" at a preset time and frequency.
Shack	The room where the amateur operator has their radio.
SSB	Single side band. A form of voice communications.
SSTV	Slow Scan TV. A single frame shown like a still picture. Example: WX photo from satellite.
TNC	Terminal node controller. The interface in packet between the computer and the radio.
Transceiver	A transmitter and receiver in a single box. 2 Way Radio.
XYL	Wife
YL	Young lady (girlfriend)
73	Best wishes
88	Love and kisses

Modes of Communication

Amateur radio operators generally use radio transmitters and receivers to communicate with each other. As you will discover in these pages there are many forms of communication although voice (also known as phone) is still the most widely used. Some of the other forms of transmission are Radio teletype (Rtty), Morse code (CW), television, and digital modes such as Packet, Pactor and PSK-31. A recent survey shows that phone is the most widely used with CW standing second.

Getting Licensed

To become a radio amateur you will need to get a license. Licensing requirements are different in every country with different rules, privileges, and classes of license. Basically the different levels of license gives you different privileges on the ham bands. The more challenging the license requirements the more privileges that are granted and the more interesting and enjoyable ham radio becomes.

Definitions/History

Ham "Ham: a poor operator. A 'plug.'"

That's the definition of the word given in G. M. Dodge's The Telegraph Instructor even before radio. The definition has never changed in wire telegraphy. The first wireless operators were landline telegraphers who left their offices to go to sea or to man the coastal stations. They brought with them their language and much of the tradition of their older profession. In those early days, spark was king and every station occupied the same wavelength-or, more accurately perhaps, every station occupied the whole spectrum with its broad spark signal. Government stations, ships, coastal stations and the increasingly numerous amateur operators all competed for time and signal supremacy in each other's receivers. Many of the amateur stations were very powerful. Two amateurs, working each other across town, could effectively jam all the other operations in the area. When this happened, frustrated commercial operators would call the ship whose weaker signals had been blotted out by amateurs and say "SRI OM THOSE #&\$!@ HAMS ARE JAMMING YOU." Amateurs, possibly unfamiliar with the real meaning of the term, picked it up and applied it to themselves in true "Yankee Doodle" fashion and wore it with pride. As the years advanced, the original meaning has completely disappeared.

The Q Code

The Q Code came into being internationally in 1912 to overcome the language problems involved in communications by radio among ships and shore stations of all countries. The original list of 50 adopted by international agreement in London contain many which are still familiar to amateur operators-QRN, QRM, QSO, the traffic operator's QRK, QSY and QRV – are now nearing the century mark of continuous usage. QSL still has the official 1912 definition despite the changed informal usages it is subjected to in amateur parlance.

CQ

The telegraph call CQ was born on the English Telegraph over a century ago as a signal meaning "All stations. A notification to all postal telegraph offices to receive the message" Like many other telegraph terms which originated on the landlines, CQ was brought over into radio and used as a general call to all ships by the Marconi Company. CQ was adopted in 1912, as the international general call or "attention" signal. But why the letters CQ, it comes from the French, *sécurité*, (safety or, as intended here, pay attention)

73

The traditional expression "73" goes right back to the beginning of the landline telegraph days. It is found in some of the earliest editions of the numerical codes. It indicated that the end, or signature, was coming up. The first authentic use of 73 is in the publication *The National Telegraph Review and Operators' Guide*, first published in April 1857. Now, 73 is a greeting, a friendly "word" between operators.

SOS

The signal QRR came to be used to indicate that the calling station had railroad traffic related to some emergency. One of the first distress calls was CQD, from the "general call" CQ and the letter D for "distress." (This was used by most English speaking countries.) An International convention found SOE (used by Germany) acceptable (as an International standard) except that the final E could easily be lost. The letter S was substituted, making it SOS. The convention decided that SOS should be sent as a single code character with a sound unlike any other character, thus arresting the attention of anyone hearing it. So was officially adopted, but CQD remained in use for some years, particularly aboard British ships. It wasn't until 1912, after the Titanic disaster, that SOS became universal and the use of CQD gradually disappeared. Titanic radio operator Jack Phillips sent both CQD and SOS to be sure that there couldn't possibly be any misunderstanding.

Mayday

Incidentally, another distress call is used by aircraft in trouble throughout the world. We have all heard the term "mayday" at some time. This, of course, has nothing to do with the first day in May. As it turns out, in French, the word "m'aidez" means "help me". Is it possible that American aviators in World War I picked this up from their French comrades and mispronounced it as the easily recognized "mayday, mayday"?

The International Code

Although Samuel F. B. Morse's code achieved nearly universal use on the landline telegraph systems of America, the Europeans never did like it. They felt that the "space" characters were likely to cause errors in receiving. (The letter "O," for example was sent "dit dit" and the "I" was sent as in the now familiar International Code: "didit.") The Europeans developed a number of binary dot-dash codes to suit their own needs. The code in use on the wires of the Prussian Empire in 1852 bore a strong resemblance to the present International Code, but it used the American Morse numerals. Seven years later the "European Code" was formulated, using the Austro-Prussian alphabet and adapting the numerals we now use. This was adopted for use by all European countries and the name was changed in 1912 to "International Code," although it is also known, even today, as the "Continental Code."

Propagation

When you pick up a handheld transceiver and communicate on VHF or UHF across town or through a repeater you are generally transmitting line of sight. Not so however with HF transmission. When you are using 160m to 10m the signal reaches the earth's ionosphere and bounces back to earth to be received at a greater distance than line of sight.

The Ionosphere

The ionosphere is a layer in the Earth's atmosphere that lies in a range of 80 to 300 miles above the Earth's surface that reflects radio waves. As the sun shines on the ionosphere it changes composition and height which affects the propagation characteristics. In general signals below 30MHz bounce off this layer and return to Earth while signals above 30 MHz go through the layer into outer space. So watch what you say on 2 meters, someone on Alpha Centauri might be listening. Signals below 30 MHz can also travel by ground wave and be received a short distance from the transmitter.

Daily Patterns

Radio signals that are bounced or refracted off the ionosphere are also affected by the time of day and season of the year. During the 24 hours cycle the ionosphere changes in height above the Earth and bounces some signals while absorbing others. During the day the higher frequencies (above 10Mhz) tend to propagate while lower frequencies are absorbed. At night the reverse happens. There are many exceptions to this but it is a good general guideline.

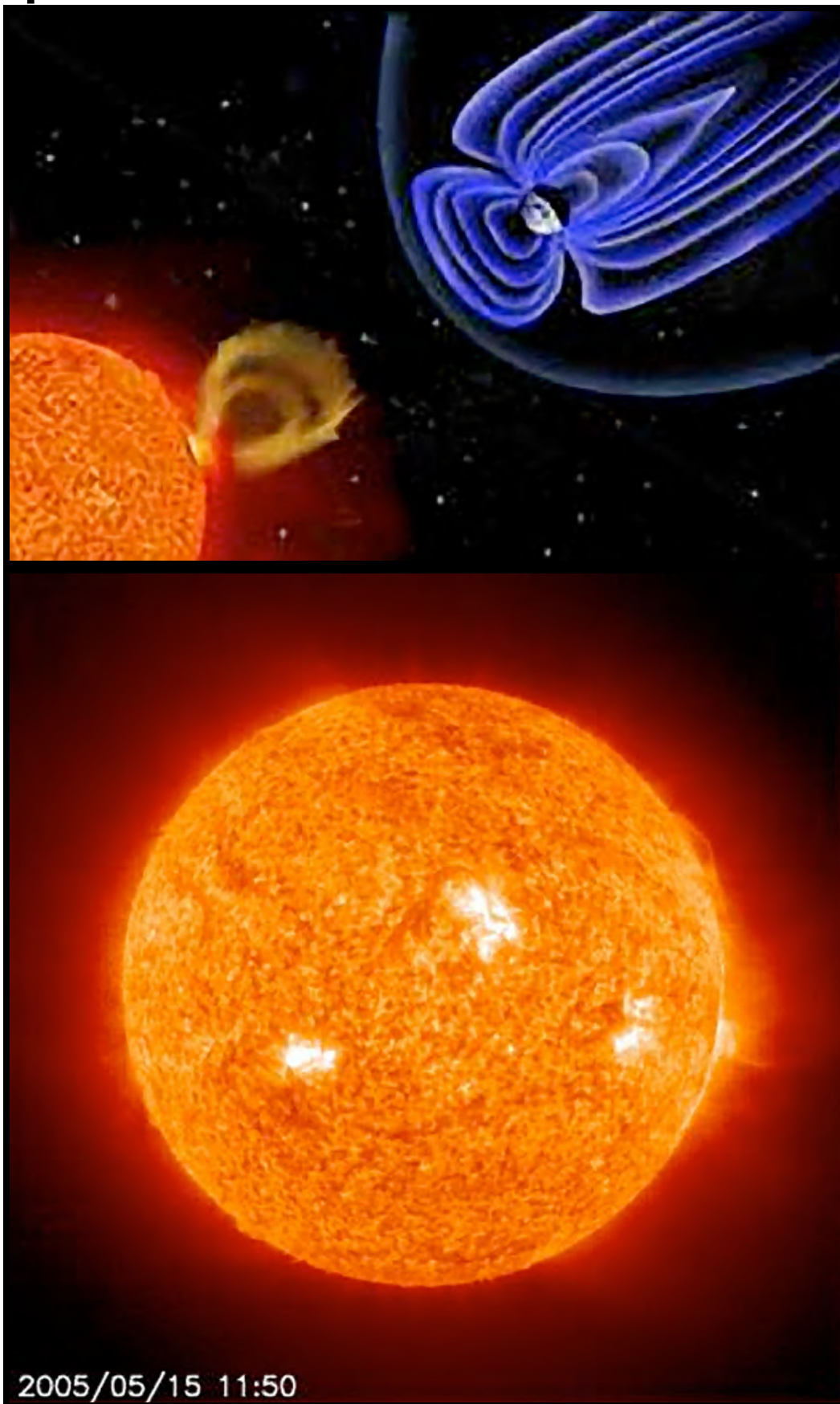
Seasonal Patterns

Seasons also affect propagation. Summertime in the northern hemisphere means that higher frequencies have better propagation while in the winter the lower frequencies improve. An interesting time of the year for propagation is when the seasons change from fall to winter and from winter to spring. This is often when the best DX can be found. Because the seasonal change is occurring in both hemispheres but in the opposite direction DX from North American to Australia or southern Africa can be at its best.

The Sunspot Cycle

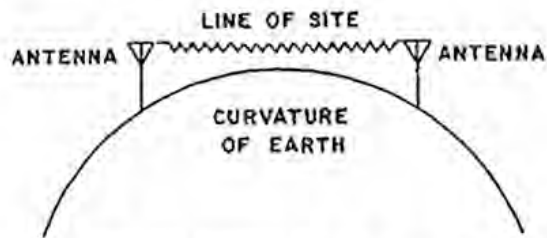
Another phenomenon that affects radio propagation is the 11 year sunspot cycle. A peak occurred during the year 2000 and the next peak will occur around 2011. A sunspot low occurs at the midpoint of this cycle. When the sunspots are at their maximum propagation is at its best. At this time the higher shortwave frequencies exhibit the best propagation extending to 6 meters which becomes quite popular during this time of the cycle. 10 meters can easily work stations worldwide with low power (even qrp) and a modest antenna.

Sun Spots

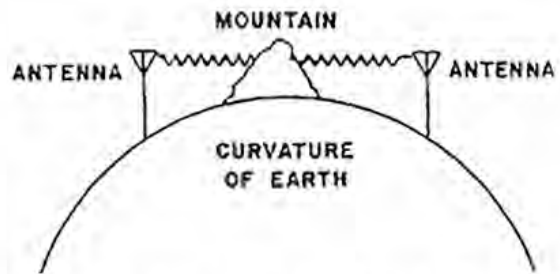


Aurora Borealis

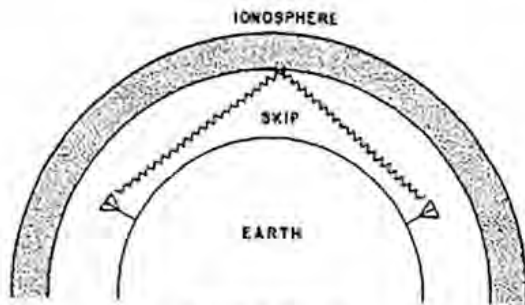




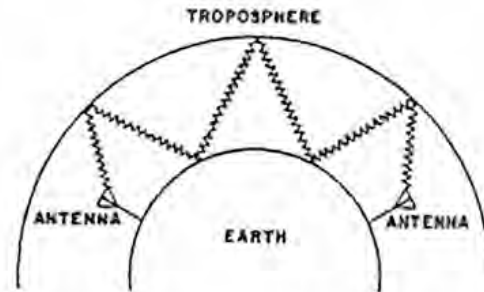
CURVATURE OF EARTH LIMITS RADIO RANGE



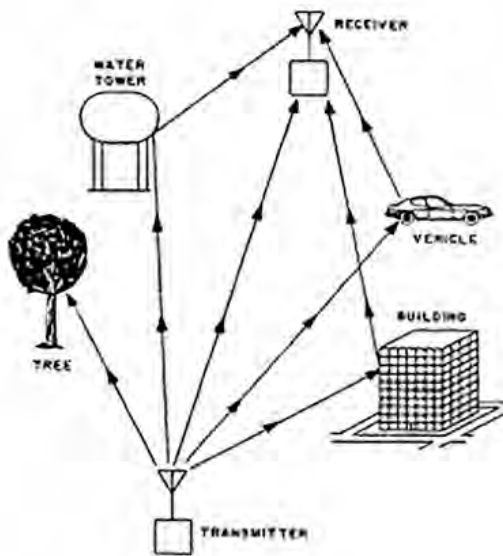
TERRAIN CAN LIMIT RADIO RANGE



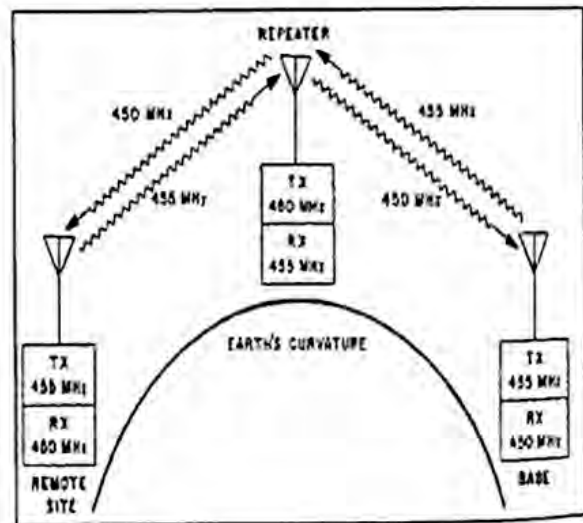
Skip Interference



TROPOSPHERIC TRANSMISSION BEYOND LINE OF SIGHT COMMONLY CALLED DUCTING

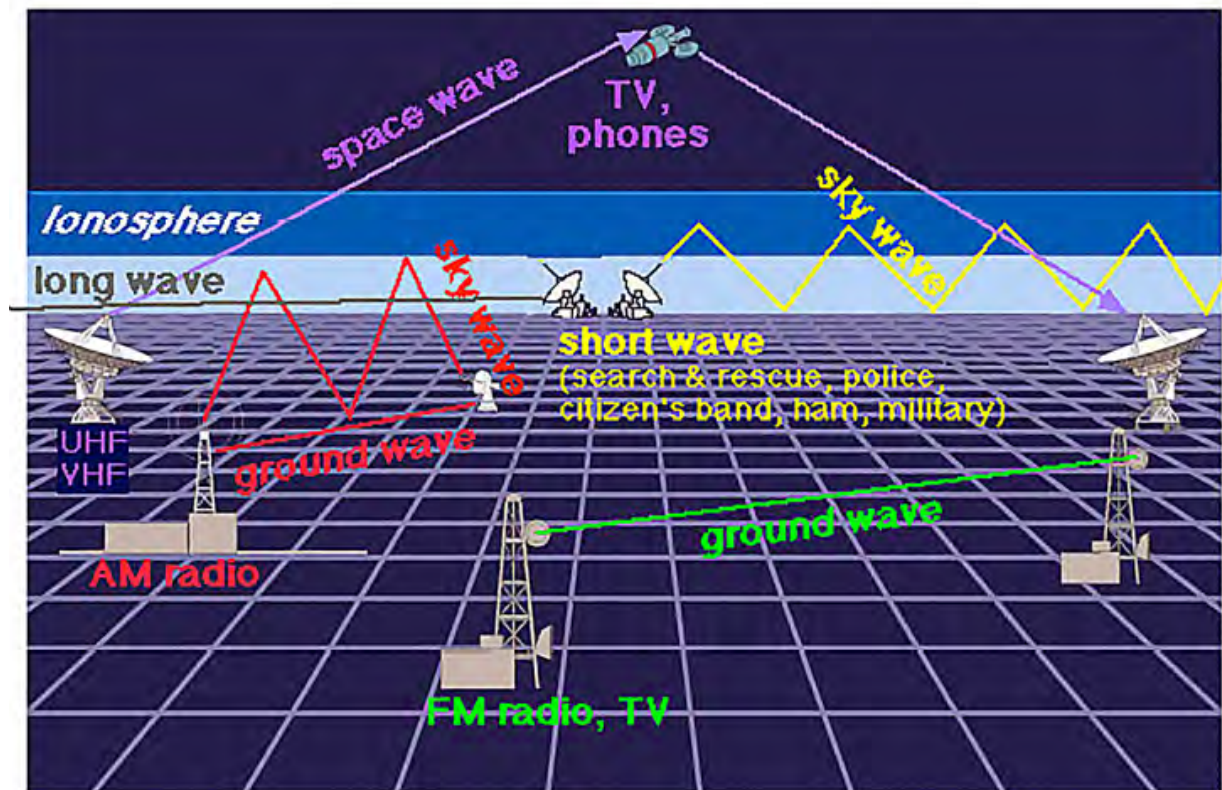


Reflected Paths

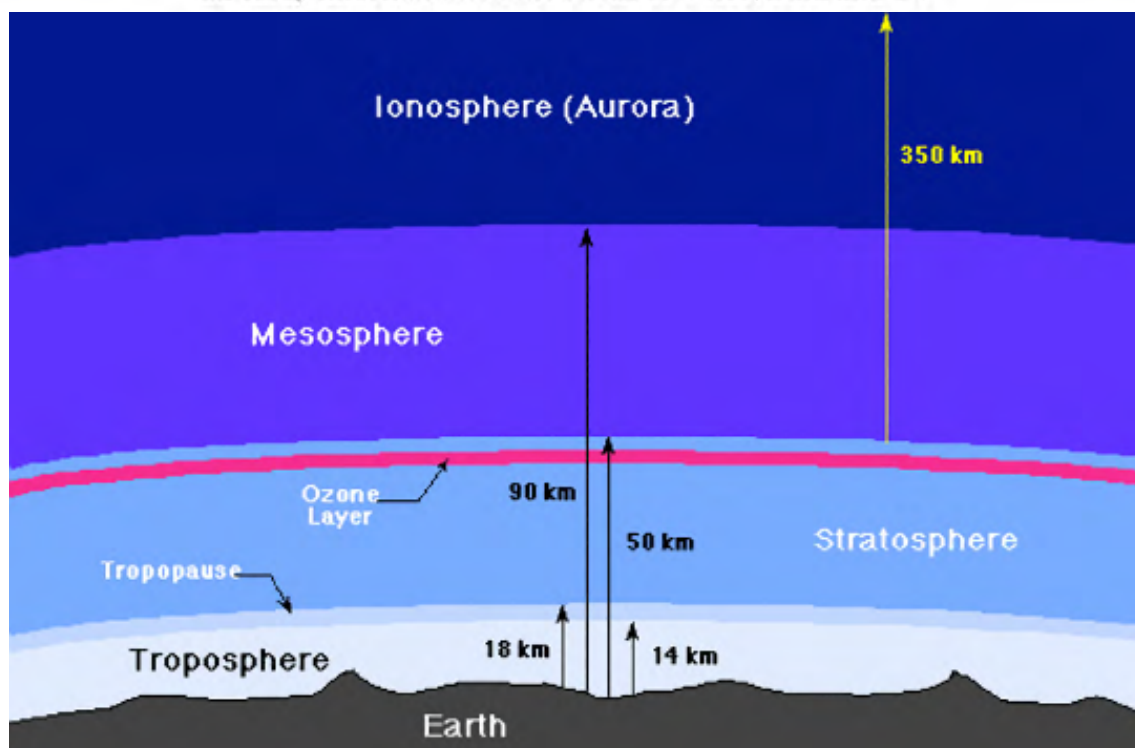


Use Repeaters to Extend Radio Range

Radio Waves carry other types of signals also.
TV, Telephone, & Data are all carried across the air waves



Ground Waves, Sky Waves, Long waves and Space waves
all carry informatinn in the forms of Voice, Data and TV



Morse Code Alphabet

The International morse code characters:

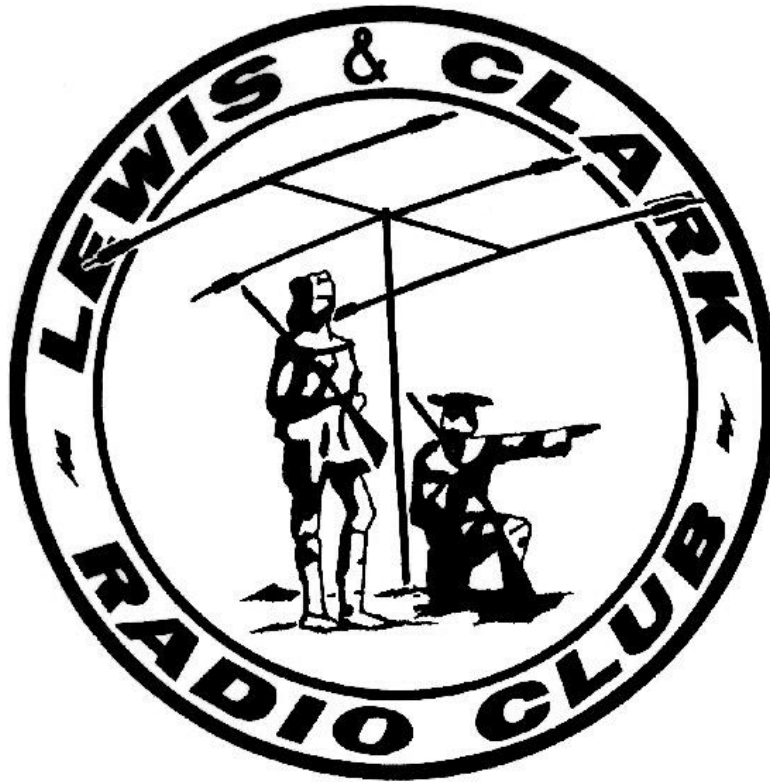
A	.-	N	-. .	0	-----
B	-... .	O	---	1	.----
C	-. -. .	P	.-. -. .	2	..---
D	-. ..	Q	---. -	3	...--
E	.	R	.-. .	4-
F	...-. .	S	...	5
G	--. .	T	-	6	-....
H	U	..-	7	--...
I	..	V	...-	8	---..
J	.---	W	.-.	9	----.
K	-. -	X	-. -. -	Fullstop	.-.-.-
L	.-... .	Y	-. -. -	Comma	--...--
M	--	Z	--..	Query	..-... .

Lewis & Clark Radio Club

P.O. Box 553

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K9HAM

**WHEN
ALL
ELSE
FAILS...**



**AMATEUR
RADIO**

