



By Wade Harris WA5DE

**Combining the Broken Arrow ARC and
The USS Batfish and USS Oklahoma ARC**

June 25-26 2022

North Field Of Asbury Chuch at 9836 E 66th

Setup starting at 1PM Friday (1800Z)

**Operating starts at 1PM Saturday (1800Z)
and ending at 1800 UTC Sunday. (1800Z)**

High Performance Operating Strategies

**Even the very best station can not compensate for a poor operator
Radio Operating is a SKILL that is learned by practice.**

Learn to use Phonics.

Learn the Q codes and CW Abbreviations.

Learn to use the radios controls;

Power, Mic, Compression, ALC, RIT, filters, Notch, IF Shift, Pass band tuning.

Learn to use the radios record and play back functions if available.

Learn to speak up and clearly enunciate your words.

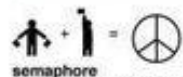
Learn to adjust your radios Mic gain and Compression Controls.

Learn to be in Control of the frequency, and avoid Hunt and Peck

phonetic alphabet

A alpha	B bravo	C charlie
D delta	E echo	F foxtrot
G golf	H hotel	
I india	J juliett	K kilo
L lima	M mike	
N november	O oscar	P papa
Q quebec	R romeo	
S sierra	T tango	U uniform
V victor	W whiskey	
X xray	Y yankee	Z zulu

With this NATO alphabet chart you will no longer use "M as in Mancy" during a support call with your mom, or while defusing a bomb.



semaphore

Pre-electronic flag letter signals for naval communication represented in a circle. The peace sign was created by combining the letters N (Nuclear) and D (Disarmament).



international morse code

The world's first digital code. The length of each letter's code corresponds to the frequency of that letter's usage in Morristown, New Jersey's newspaper in 1837.



international code of signals

These maritime flags are used to visually communicate letters and messages while maintaining radio silence.

PHONETIC ALPHABET

INTERNATIONAL MORSE CODE

A	ALPHA	•—
B	BRAVO	—•••
C	CHARLIE	—•—•
D	DELTA	—••
E	ECHO	•
F	FOXTROT	••—•
G	GOLF	—••
H	HOTEL	••••
I	INDIA	••
J	JULIET	•—•—
K	KILO	—•—
L	LIMA	•—••
M	MIKE	—•—
N	NOVEMBER	—•
O	OSCAR	—•—
P	PAPA	•—••
Q	QUEBEC	—•—•
R	ROMEO	•—•
S	SIERRA	•••
T	TANGO	—
U	UNIFORM	••—
V	VICTOR	•••—
W	WHISKEY	•—•—
X	X-RAY	—•••
Y	YANKEE	—•—•
Z	ZULU	—•••

Passband Tuning or IF Shift

Manipulates the Receiver Bandwidth and Center Frequency

A narrower Filter allows close together signals to be separated.

A wider Filter allows the receiver to hear signals further away from the center frequency

Both PBT Pass band Tuning and IF shift (Intermediate Frequency shift) are very similar. Each allow the operator to have a Variable band with Filter to adjust as desired or needed during crowded band conditions warrant.

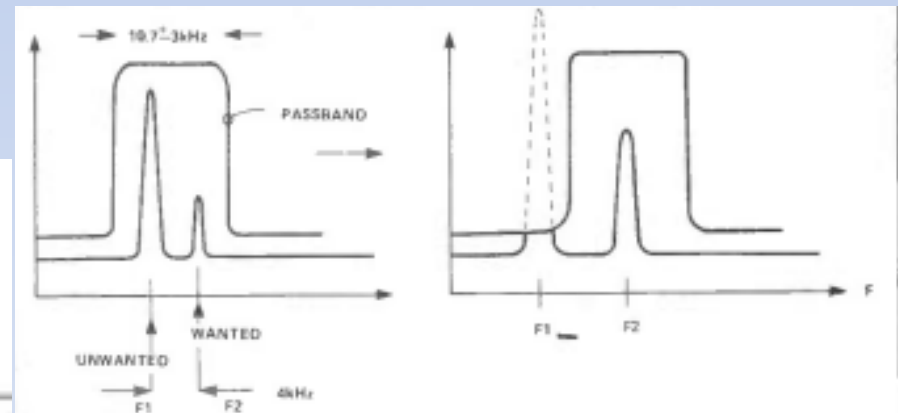
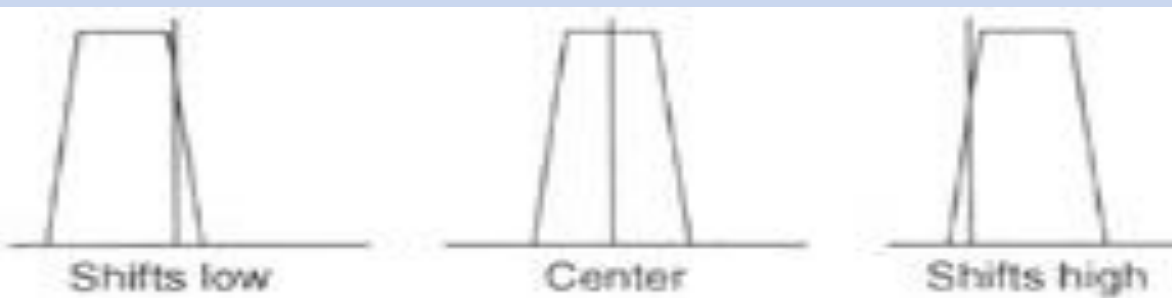
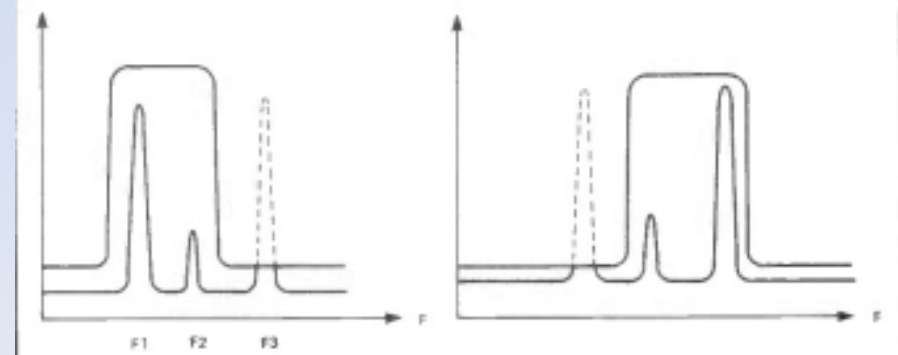


Figure 3a: Tuning bandpass to remove unwanted frequency



Tools of the Trade

The object is to keep your hands clear for logging

Use a Logging computer with a data link to the radio.

Use a boom mic mounted to the desk or head phones.

Use a foot switch to key the radio.

Adjust the mic for YOUR Voice!

Use good ergonomic station design.

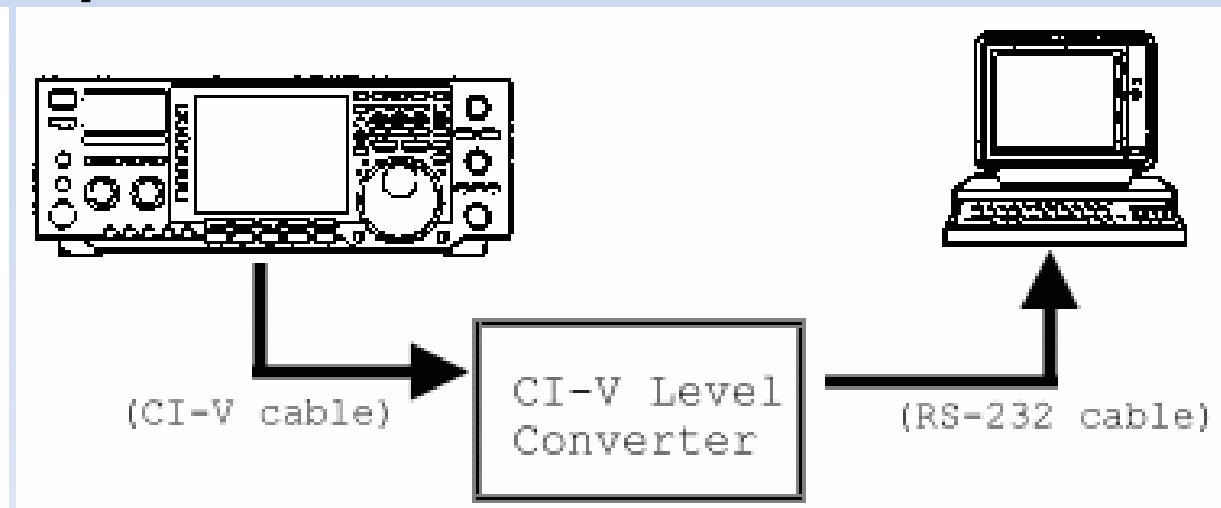
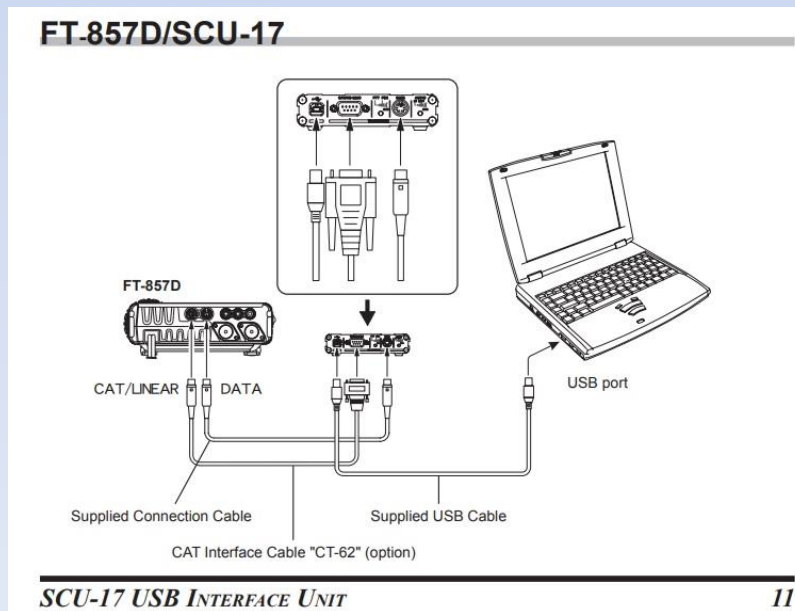
Computer Logging – N3FJP.com

Very powerful for multi station operations that allow all station logs to be combined in near real time.

There is a standard version that works great in a normal operating environment, but there are special versions for many contest including Field Day.

Requires a modern radio, newer than say the last 30 years of so. Some older radios may also be compatible.

Requires a Computer with Win 7 or newer OS and a networking capabilities.



N3FJP Networked logging

ZB	1834Z	AF	102	8,068
DF	1834Z	EU	49	4,707
FM	1834Z	NA	122	2,450
ZK3	1833Z	OC	256	6,043
TK	1833Z	EU	50	5,017

We will require all stations to be data linked from the computer to the radio, whether we are networked together or not.

Advanced Field Day Station

Antenna Planning and Implementation

Antennas are the heart of any station.

**A poor station with a great antenna will always outperform
a great station with a poor antenna.**

Full Size antenna Vs Compromise antenna

Antenna Placement

Vertical Vs Horizontal isolation

Mono band Vs Multi Band

Full Size Antenna Vs. Compromise Antenna

When it comes to antennas, Size Matters

Use $1/4$, $1/2$, $3/4$, $5/8$, and 1 Wavelength or more

Given the same environment, a full size antenna will almost always out perform a compromise antenna.

The larger size equates to higher efficiency.

Use Compromise antennas when and where you must, but use full size antennas at field day where there is room!

Full size dipoles are a must for any portable emergency station. They are small, portable, efficient and cheap!

Antenna Placement General Guide Lines

Keep far away from powerlines.

Get the antenna as high as possible.

Keep the antenna as far away from other antennas of any band.

Do not mount antennas over the operators.

Use long, high quality runs of coax to get the RF as far away from you and the other antennas.

Vertical Vs Horizontal Isolation

Question: Does polarization matter at HF Frequency's - Y/N?

Answer: That depends!

It is true at HF that polarization does not matter to the distant receiving station, because the signal gets twisted and mixed at every bounce of the signal in the atmosphere and on earth.

However, when stations or antennas are closely spaced together, same polarized antenna will couple together! This can be dangerous to the receivers front end!

Learn to use this to your advantage!

On Average, there is between 20 and 30dB of isolation between two antennas on the same band, one vertical and one Horizontal!

https://www.w8ji.com/antenna_coupling.htm

Two 1/4-wave verticals, each with zero ground loss. Transmitter power at antenna = 1000 watts

Band	400-foot spacing	200-foot spacing	100-foot spacing	50-foot spacing	25-foot spacing
160	26 watts	66 watts	207 watts		
80	7.5 watts	29 watts	67.5 watts	223 watts	
40	2 watts	7.5 watts	29 watts	67.5 watts	223 watts
20	0.5 watts	2 watts	7.5 watts	29 watts	67.5 watts
10	0.125 watts	0.5 watts	2 watts	7.5 watts	29 watts

Dipole-to-vertical that is *broadside-to and centered-on the dipole*, perfect ground, and 1000 watts

Band	400-foot spacing	200-foot spacing	100-foot spacing	50-foot spacing	25-foot spacing
160	0.13 watts	0.38 watts	0.79 watts		
80	.049 watts	0.13 watts	0.38 watts	0.79 watts	
40	.013 watts	.049 watts	0.13 watts	0.38 watts	0.79 watts
20		.013 watts	.049 watts	0.13 watts	0.38 watts
10			.013 watts	.049 watts	0.13 watts

Vertical-to-dipole, dipole oriented so vertical is nearly in line with the dipole's end

Band	400-foot spacing	200-foot spacing	100-foot spacing	50-foot spacing	25-foot spacing
160	1.9 watts	4 watts	10.5 watts		
80	.41 watts	1.6 watts	4.1 watts	10.5 watts	
40	.10 watts	.41 watts	1.6 watts	4.1 watts	10.5 watts
20		.11 watts	.41 watts	1.6 watts	4.1 watts
10			.11 watts	.41 watts	1.6 watts

Dipole-to-dipole, broadside to each other, 1/4 wave above earth, with good conductivity soil

Band	400-foot spacing	200-foot spacing	100-foot spacing	50-foot spacing	25-foot spacing
160	14 watts	76.2 watts	296 watts	490 watts	
80	1.5 watts	14 watts	76.2 watts	296 watts	490 watts
40	.11 watts	1.5 watts	14 watts	76.2 watts	296 watts
20	.0075 watts*	.11 watts	1.5 watts	14 watts	76.2 watts
10	.000486 watts*	.0075 watts*	.11 watts	1.5 watts	14 watts

Mono Band Vs Multi Band Antennas

In general, mono band antennas have the better performance because multi-band antennas are a compromise.

But there are other reasons to NOT use a multi-Band antenna in a multi-station environment.

On receive, A multi-band antenna will receive all the signals, from all the bands its intended for, and deliver them to the receivers input. Any antenna will do this to some extent, but much less then a resonate antenna.

Example: your trying to work 20 meter phone using a 80/40/20m dipole. The nearby stations are transmitting on 80M and 40M phone.

Even though your on 20M, their signals on 80/40 are also being funneled into your radio by your resonant antenna on those bands. The only thing keeping it from raising the noise floor and causing interference to you is your radios Band Pass Filter.

Welcome to Radio, let me introduce Mr. Harmonic

A Harmonic is joking referred to the children of a Ham.

A Harmonic is a multiple of a fundamental Frequency. It is generated anytime a transmitter is operated ,and must be filtered out.

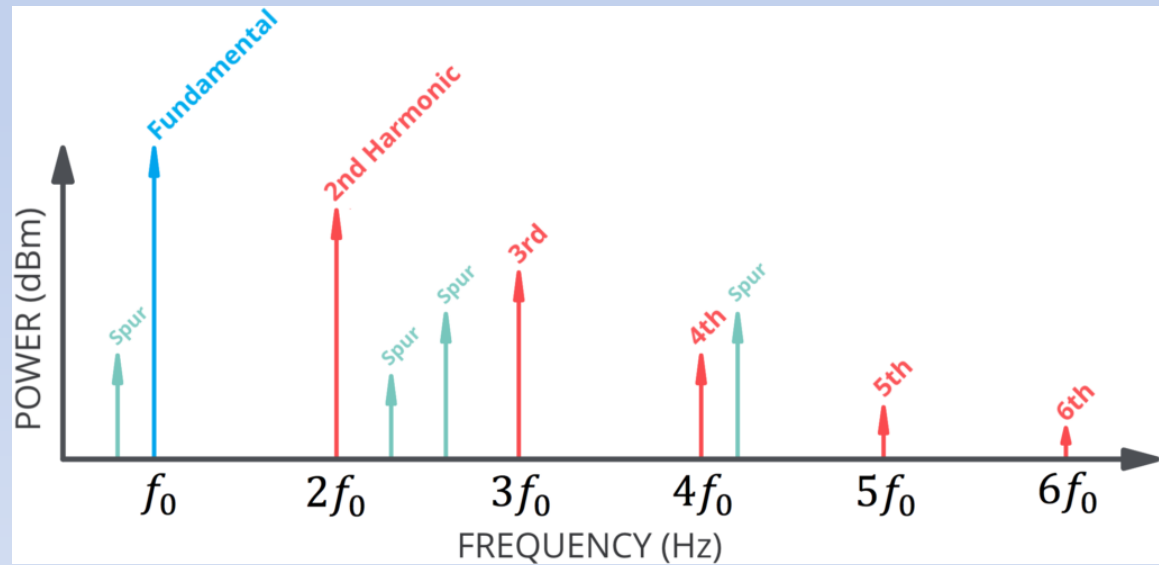
If your transmitting on 1MHz, called the fundamental or 1st harmonic, then the second harmonic is seen at 2 MHz and the third harmonic is seen at 3MHz and so.

Harmonics are seen at audio and even power line frequencies at 60Hz. Its second harmonic is at 120Hz, and the third is at 180Hz. Power line harmonics have been seen at 1.7GHz in arcing power lines. That's the 28,333,333,333 Harmonic!

Why are Harmonics a problem

FCC rules in part 97.307(d) For transmitters installed after January 1, 2003, the mean power of any spurious emission from a station transmitter or external RF power amplifier transmitting on a frequency below 30 MHz must be at least 43 dB below the mean power of the fundamental emission.

100 WATT TX = 50dBm
If it meets spec = -43dB
Harmonics = 7dBm
Or 0.005 Watts



From <http://www.naqcc.info/qrpworks.html>

In 2005 Bill Tippet W4ZV, of New London, NC correctly copied code word OMAHA (on CW) from the N2XE beacon transmitting with a peak carrier power of .0000406 watts at 3.5455 MHz on the 80 meter Amateur Radio band. The precise distance between the two stations is 546.8 miles, establishing Bill's record reception distance at 13,467,980 miles per watt.

Harmonics are a very real problem that can clearly be demonstrated in a multi-station field day site.

A transmitter, meeting the FCC Specifications at a field day site can generally be heard by every other station at the site on many of its harmonics.

A transmitter on 1.8MHz (160M) can be seen at the second harmonic of 3.6Mhz (80M) as well as its forth Harmonic of 7.2Mhz (40M) and possibly the 16th harmonic of 28.8MHz (10M)

A 40M CW station transmitting at 7.050Mhz will also be seen at 14.1MHz (second) and 21.15MHz (third) and 28.2MHz (forth)

You are going to have trouble trying to operate near those harmonic frequencies!

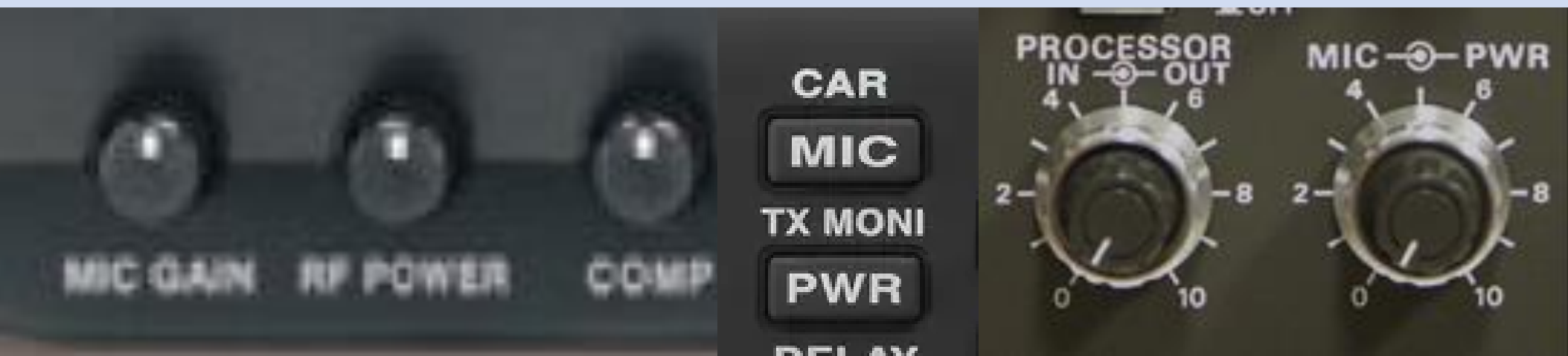
Don't be the problem - Minimize your spurious emission

Q. What happens to any amplifier when you crank it up beyond its max power?

A. Distortion: Amplifiers in Transmitters are the same way, the distortion is identified as spurious emissions.

Never run your transmitter or amplifier at 100%. During tuning, run it up to full power and the back it off just a hair.

Make sure your voice peaks stay at or just below the ALC's red line with regardless of the compressor status.



Things that can help in Multi-Station Operations

Antenna Tuners

$\frac{1}{4}$ and $\frac{1}{2}$ Wave Coax Notch Filters

Band Pass Filters

Triplexer

Antenna Tuners.

Using an external antenna tuner at the input of the Radio can actually improve the rejection of out of band emissions on both the Transmit side as well as on the receive side.

The actual level of improvement is dependent on a number of factors such as impedance at the insertion point, as well as the antenna tuning at that point.

Coaxial Notch Filters

Useful 1/4 and 1/2-l Filter Stubs

Stub Type	Passes	Nulls
1/4-l 160m shorted	160	80,40,20,15,10
1/4-l 80m shorted	80	40,20,15,10
1/4-l 80m open	40,20	80
1/4-l 40m shorted	40,15	20,10
1/4-l 40m open	20,10	40,15
1/4-l 20m shorted	20	10
1/4-l 20m open	10	20

Good resource to build your own Stubs

<https://www.youtube.com/watch?v=mjfdTJIY6To>

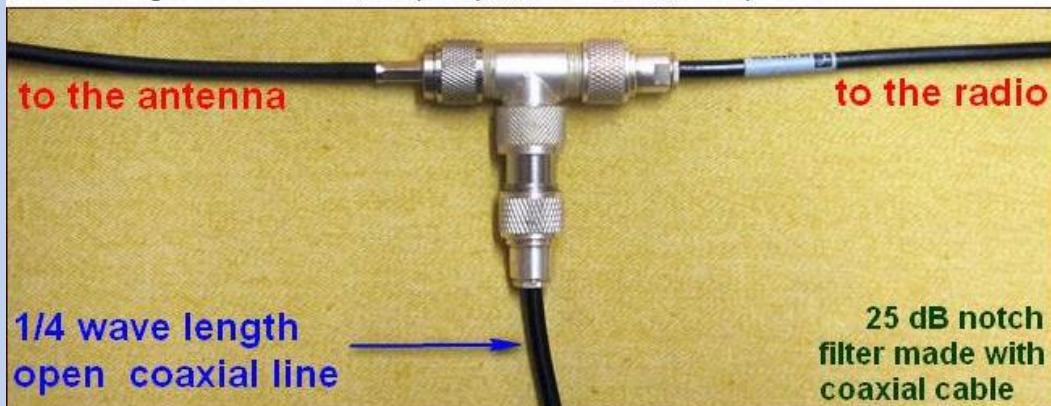
<http://www.hb9amo.net/hfcoaxialfilter.php>

<https://www.onallbands.com/simple-filters-from-transmission-line-stubs/>

<https://dh1tw.de/coax-stubs-for-20m-and-40m/>

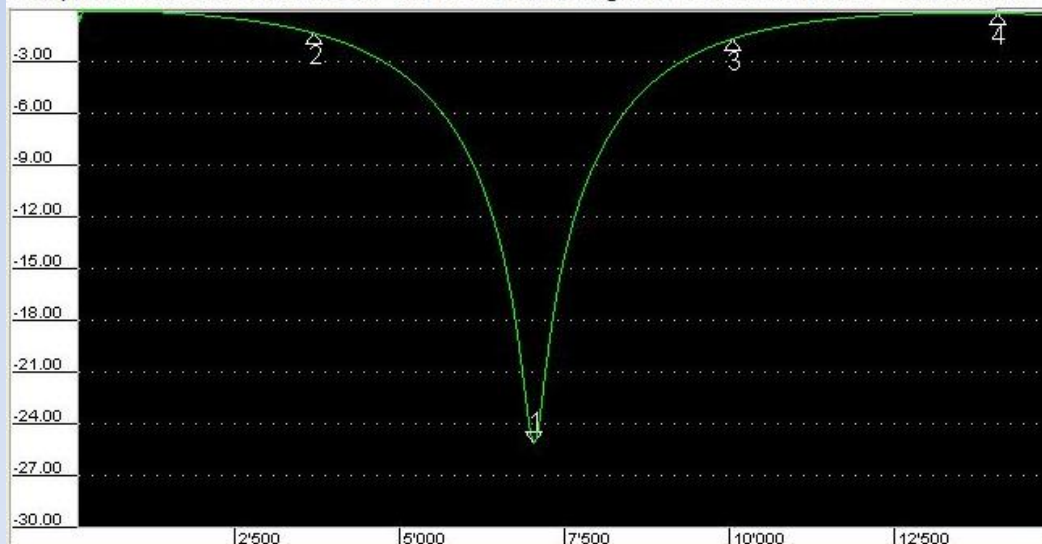
Notch filter made with coaxial cable.

A simple and cheap HF notch filter could be made with a 'T' coaxial connector inserted in your antenna line with a 1/4 wave length open line connected to the vertical part of the 'T'.
The cable length in meters = $75 / \text{Frequency_in_MHz} \times \text{Cable_velocity_factor}$.

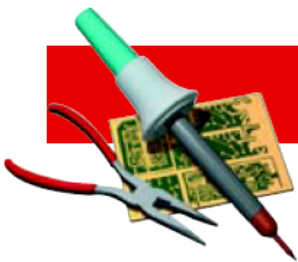


Measurement: The cable going to the antenna and the cable going to the radio have been connected to the 'DUT' and 'DET' miniVNapro ports. The DL2SBA vna/J software used in 'transmission' mode display the following graph.

Example for 40 meters band notch. The RG-58 cable length is: $75 / 7.080 \times 0.66 = 6.99$ meters



	Frequency	RL	RP	TL	TP	Z	Rs	Xs	SWR
1	7'080.000	0.00	0.00	-25.10	40 meters	0.0	0.0	0.0	0.00:1
2	3'713.000	0.00	0.00	-1.30	80 meters	0.0	0.0	0.0	0.00:1
3	10'123.000	0.00	0.00	-1.62	30 meters	0.0	0.0	0.0	0.00:1
4	14'182.000	0.00	0.00	-0.15	20 meters	0.0	0.0	0.0	0.00:1



HANDS-ON RADIO

From November 2004 QST © ARRL

Experiment #22—Stubs

H. Ward Silver, NØAX

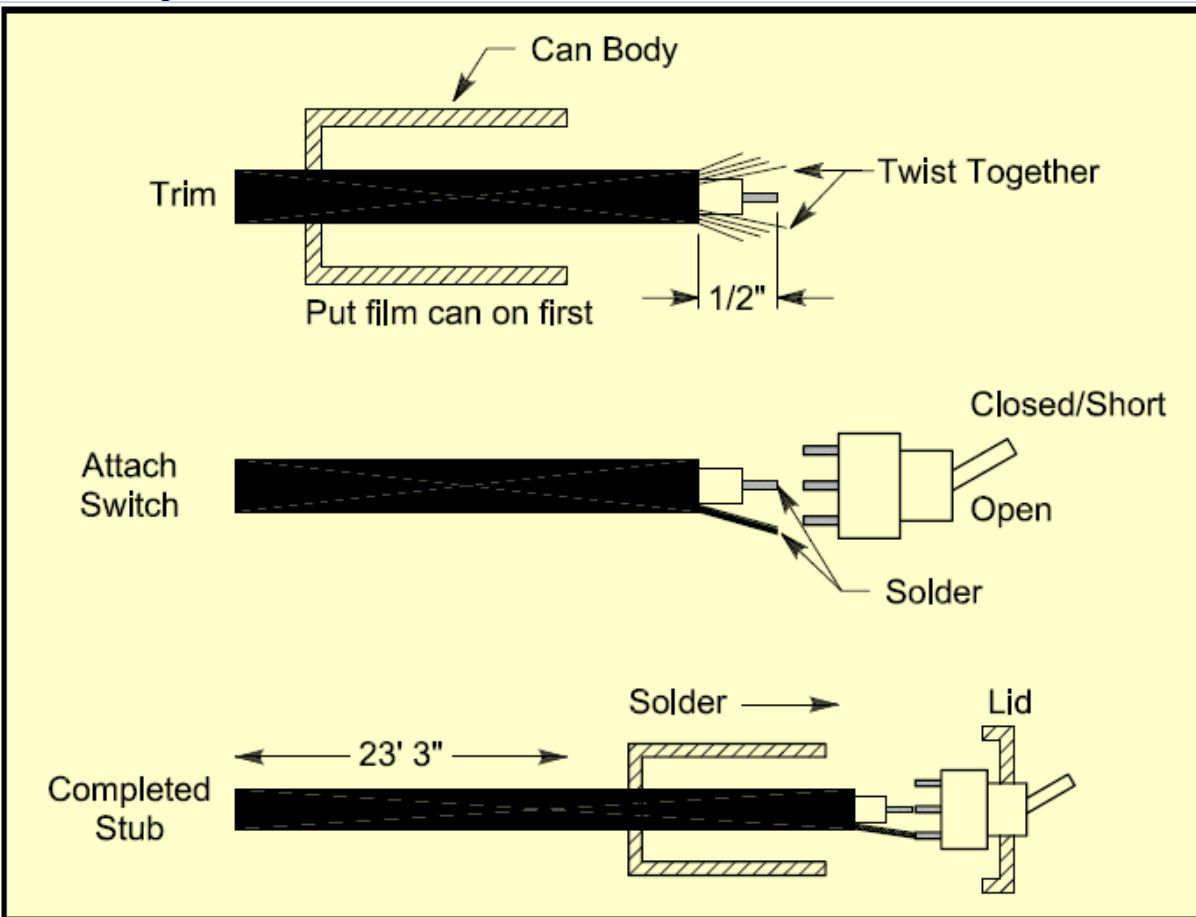


Figure 2—The switched-stub can pass or null energy on 40, 20, 15 and 10 meters.

$1/4\text{-}\lambda$ 80-m shorted	80	40,20,15,10
$1/4\text{-}\lambda$ 80-m open	40,20	80
$1/4\text{-}\lambda$ 40-m shorted	40,15	20,10
$1/4\text{-}\lambda$ 40-m open	20,10	40,15

Table 1

Useful $1/4$ and $1/2$ λ Stubs for Filtering

Stub Type	Passes	Nulls
$1/4\text{-}\lambda$ 160-m shorted	160	80,40,20,15,10
$1/4\text{-}\lambda$ 80-m shorted	80	40,20,15,10
$1/4\text{-}\lambda$ 80-m open	40,20	80
$1/4\text{-}\lambda$ 40-m shorted	40,15	20,10
$1/4\text{-}\lambda$ 40-m open	20,10	40,15
$1/4\text{-}\lambda$ 20-m shorted	20	10
$1/4\text{-}\lambda$ 20-m open	10	20

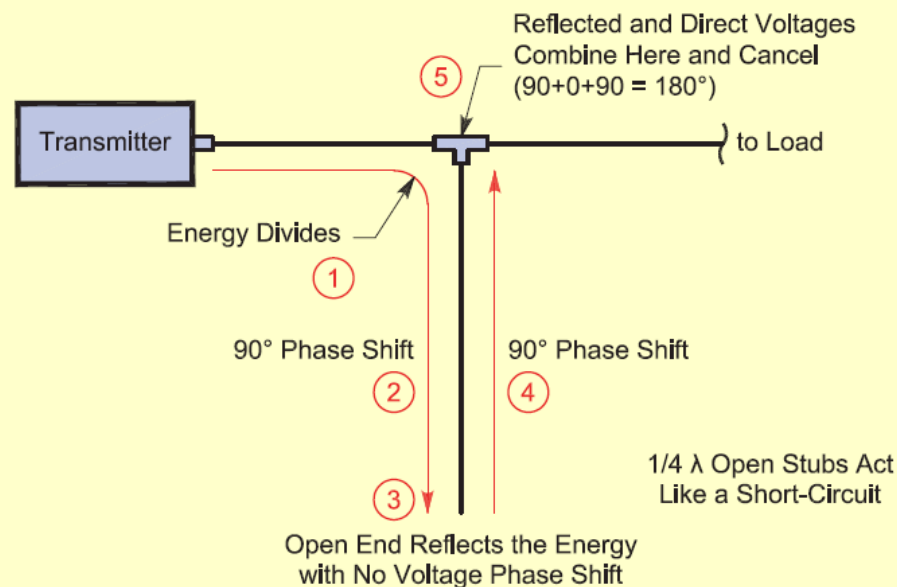


Figure 1—A $1/4$ λ stub uses reflections to cancel energy at its free end.

> 20 -30dB rejection is common

Transmit Band Pass Filters

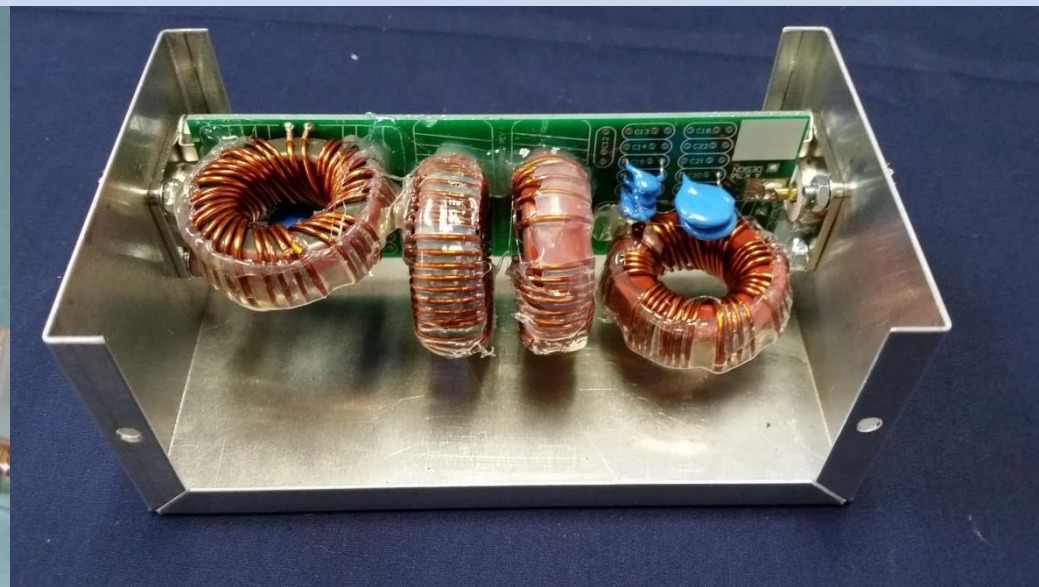
40 to 60dB rejection is Common.

Transmit on **ONLY** One Band.

May be polarized – TX vs Ant end.

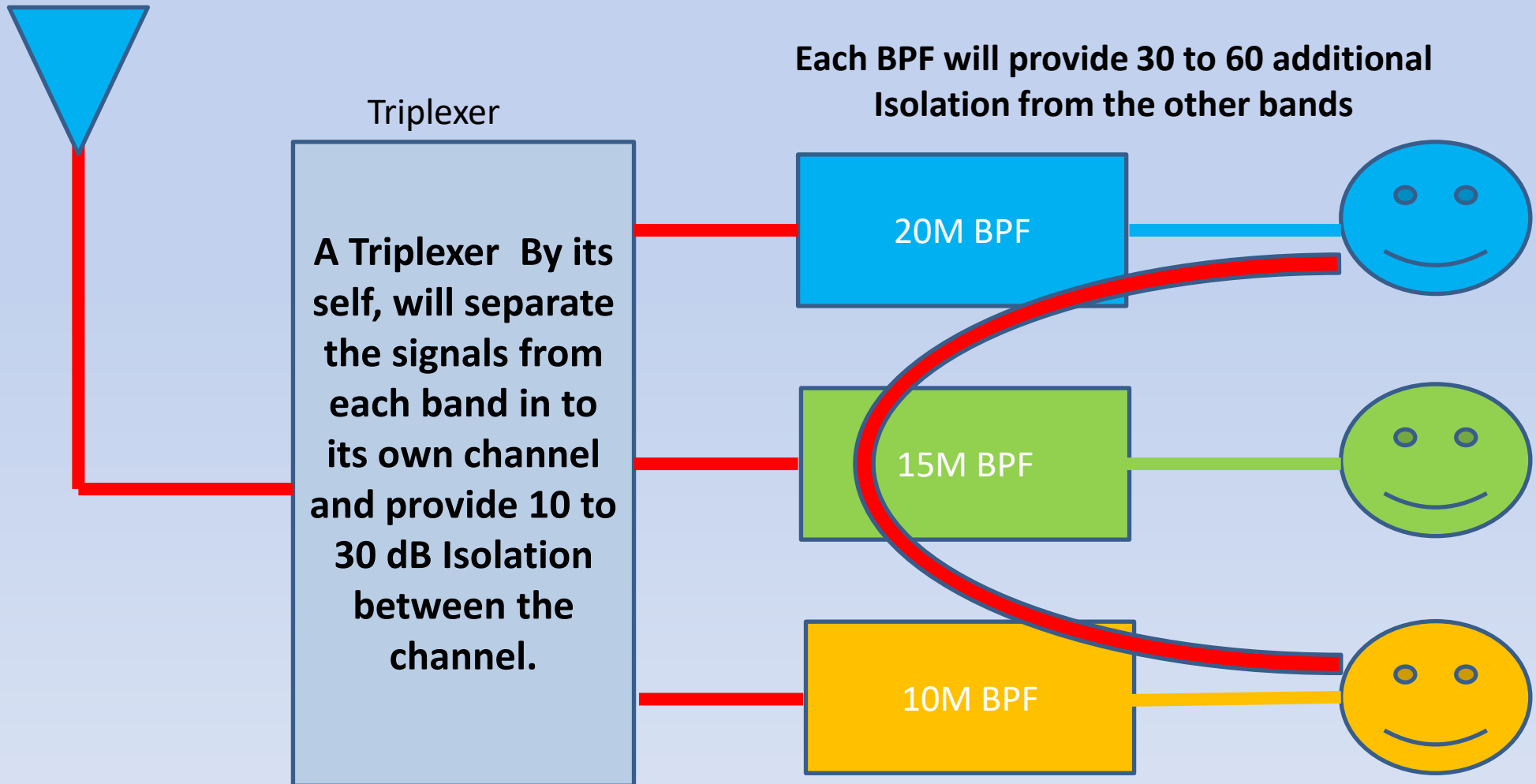
Only works with resonant antennas.

Must observe Max power ratings.



HF Triplexer

Mainly used with a Tri Band Beam



Isolation between bands can be 90 to 150dB

Used to isolate the transmitter on one band from the receivers on the other bands.

Basic Do's at Field Day

- **Do have fun.**
- **Do make lots of contacts.**
- **Do log every contact.**
- **Do share the radios antenna and bands.**
- **Do encourage others to participate.**
- **Do take the time to help others learn.**
- **Do operate an unused station.**
- **Do ask for help anytime.**
- **Do stay in your operating privileges**
- **Do Ask someone with higher privileges to sit with you if you want to do more then your license allows.**

Basic Don'ts at Field Day

- **Don't operate on the 60, 30, 17 or 12 Bands.**
- **Do not use more than 100 Watts.**
- **Do not operate outside the band/sub-band.**
- **Do not operate AM or out of mode sub-band.**
- **Do not climb towers or supports**
- **Do not add a transmitter without removing another one first.**
- **Do not transmit with out first confirming the Band, mode, antenna and filter are correct.**

Do think Safety in every thing you do!

Trip and Fall Safety

Electrical Safety

Antenna Support and Mounting Safety

Radio Exposure Safety

Heat Exposure Safety

Sun Exposure Safety

Snake and Critter Safety

Safety is for everyone, plan ahead to prevent them or warn of them!

Multi-Station Field Day layout Planning

**Space might be the final frontier,
but its critically important in a multi station Field day site.**

Operators might stay socially separated

but

Keep your stations anti socially separated

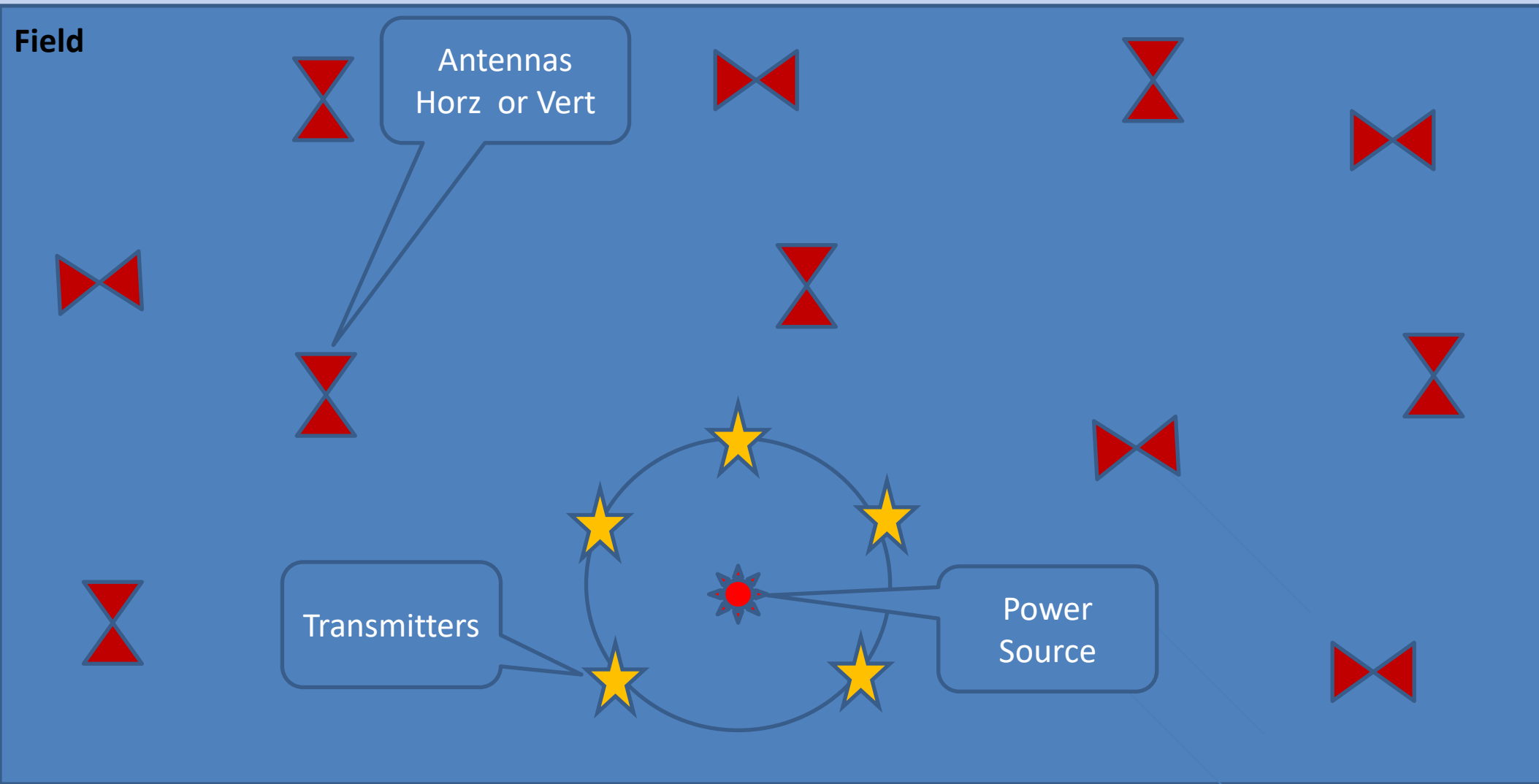
and

Keep your antennas even further apart!

No perfect multi station layouts, but some are better than others.

Multi-Station field day layouts depend on many different factors such as physical access, nearness to buildings and antenna structures like trees.

The wheel and spoke station layout – 1000 foot field, 200 foot wheel (stations) and 800 foot spokes (antennas)



Planning our Field Day Event



GARDEN HOUSE

1000'

ASBURY CHURCH

Planning our Field Day Event



Operating from Home

Do not use the WW20K Call

Use your own call sign

**Operate using your own operating
privileges**

**During the log file submission you can
give your contacts to the club using the
club name**

BA-USS BATFISH ARCS

Things to bring for field day stations

Radio, Power cord, mic, data cables

Power supply's, Power cords

Antenna Tuners, SWR Meter, Coax jumpers

Antennas, Mast, LONG runs of coax

Logging computer, and Radio Data Cable

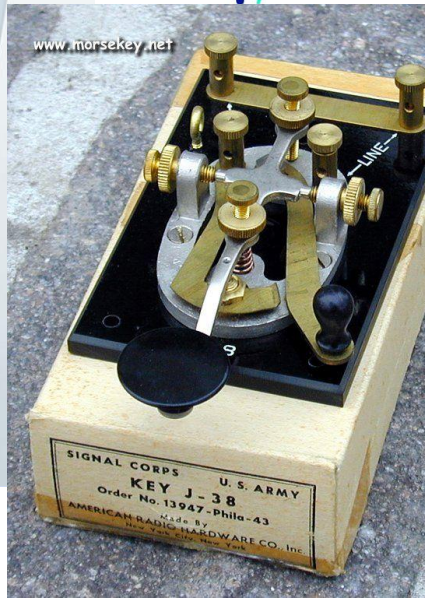
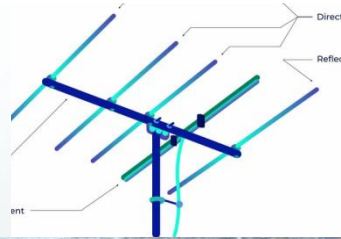
Tables, Chairs, Light, long extension cords

Ice Chest, Water, Ice, drinks and Snacks

Adapters for power, Audio, antennas

Rope, heavy twine, Tarps to cover equipment!

Field day Equipment



New Rules for Field Day 2022

Maximum PEP output for a transmitter used by anyone submitting a Field Day log will be 100 Watts which is now the low-power category limit for all ARRL and IARU HF Contests, effective January 1, 2022

Media Publicity; to get the 100 bonus points for Field Day participants, stations will now be required to obtain publicity, not just try to do so.

Class D (Home) stations will continue to be able to earn points for contacts with other Class D stations.

Club aggregate scoring will become part of the permanent rules. In the aggregate scoring plan, the scores of individual stations are combined under the score of a single club.

ARRL / RAC Section Abbreviation List

<u>1</u>	Connecticut Eastern Massachusetts Maine New Hampshire	CT EMA ME NH	Rhode Island Vermont Western Massachusetts	RI VT WMA
<u>2</u>	Eastern New York NYC / Long Island Northern New Jersey	ENY NLI NNJ	Northern New York Southern New Jersey Western New York	NNY SNJ WNY
<u>3</u>	Delaware Eastern Pennsylvania	DE EPA	Maryland – DC Western Pennsylvania	MDC WPA
<u>4</u>	Alabama Georgia Kentucky North Carolina Northern Florida South Carolina	AL GA KY NC NFL SC	Southern Florida Tennessee Virginia West Central Florida Puerto Rico US Virgin Islands	SFL TN VA WCF PR VI
<u>5</u>	Arkansas Louisiana Mississippi New Mexico	AR LA MS NM	North Texas Oklahoma South Texas West Texas	NTX OK STX WTX
<u>6</u>	East Bay Los Angeles Orange Santa Barbara Santa Clara Valley	EB LAX ORG SB SCV	San Diego San Francisco San Joaquin Valley Sacramento Valley Pacific	SDG SF SJV SV PAC
<u>7</u>	Alaska Arizona Eastern Washington Idaho Montana	AK AZ EWA ID MT	Nevada Oregon Utah Western Washington Wyoming	NV OR UT WWA WY
<u>8</u>	Michigan Ohio	MI OH	West Virginia	WV
<u>9</u>	Illinois Indiana	IL IN	Wisconsin	WI
<u>0</u>	Colorado Iowa Kansas Minnesota	CO IA KS MN	Missouri Nebraska North Dakota South Dakota	MO NE ND SD
<u>Canada</u>	Maritime Newfoundland/Labrador Quebec Ontario East Ontario North Ontario South Prince Edward Island	MAR NL QC ONE ONN ONS PE	Saskatchewan Alberta British Columbia Manitoba Northern Territories Greater Toronto Area	SK AB BC MB NT GTA

Non US / Canadian stations should be logged as DX



FIELD DAY 2022

ARRL/RAC Section Checklist

UNITED STATES

- ALABAMA . AL
- ALASKA . AK
- ARIZONA . AZ
- ARKANSAS . AR
- CALIFORNIA**
- EAST BAY CA . EB
- LOS ANGELES CA . LAX
- ORANGE CA . ORG
- SACRAMENTO VLY CA . SV
- SAN DIEGO CA .SDG
- SAN FRANCISCO CA . SF
- SAN JOAQUIN VLY CA . SJV
- SANTA BARBARA CA . SB
- SANTA CLARA VLY CA . SCV

- COLORADO . CO
- CONNECTICUT . CT
- DELAWARE . DE

FLORIDA

- SOUTHERN FL . SFL
- NORTHERN FL . NFL
- WEST CENTRAL FL . WCF

- GEORGIA . GA
- HAWAII/PACIFIC . PAC
- IDAHO . ID
- ILLINOIS . IL
- INDIANA . IN
- IOWA . IA
- KANSAS . KS
- KENTUCKY . KY
- LOUISIANA . LA
- MAINE . ME
- MARYLAND/DC . MDC

MASSACHUSETTS

- EASTERN MA . EMA
- WESTERN MA . WMA
- MICHIGAN . MI
- MINNESOTA . MN
- MISSISSIPPI . MS
- MISSOURI . MO
- MONTANA . MT
- NEBRASKA . NE
- NEVADA . NV
- NEW HAMPSHIRE . NH

NEW JERSEY

- NORTHERN NJ . NNJ
- SOUTHERN NJ . SNJ

- NEW MEXICO . NM

NEW YORK

- EASTERN NY . ENY
- NORTHERN NY . NNY
- WESTERN NY . WNY
- NYC/LONG ISLAND . NLI

- NORTH CAROLINA . NC
- NORTH DAKOTA . ND
- OHIO . OH
- OKLAHOMA . OK
- OREGON . OR

PENNSYLVANIA

- EASTERN PA . EPA
- WESTERN PA . WPA

- PUERTO RICO . PR
- RHODE ISLAND . RI
- SOUTH CAROLINA . SC
- SOUTH DAKOTA . SD
- TENNESSEE . TN

TEXAS

- NORTH TX . NTX
- SOUTH TX . STX
- WEST TX . WTX
- US VIRGIN ISLANDS . VI
- UTAH . UT
- VERMONT . VT
- VIRGINIA . VA

WASHINGTON

- EASTERN WA . EWA
- WESTERN WA . WWA

- WEST VIRGINIA . WV
- WISCONSIN . WI
- WYOMING . WY

CANADA

- ALBERTA . AB
- BRITISH COLUMBIA . BC
- GREATER TORONTO AREA . GTA
- MANITOBA . MB
- MARITIME . MAR
- NEWFOUNDLAND/LABRADOR . NL
- NORTHERN TERRITORIES . NT
- ONTARIO EAST . ONE
- ONTARIO NORTH . ONN
- ONTARIO SOUTH . ONS
- PRINCE EDWARD ISLAND . PE
- QUEBEC . QC
- SASKATCHEWAN . SK

ITU-2

ARRL WAS Map

Worked All States

Dashed lines mark
ITU zone boundaries.

ITU-9

ITU-6

ITU-3

ITU-4

6

7

0

8

2

1

5

4

ITU-10

ITU-7

ITU-8

ITU-11

AK:
KL7

ITU-61
(PAC)

HI and Pacific: KH6

PR: KP4 VI: KP2



ARRL The national association for
AMATEUR RADIO

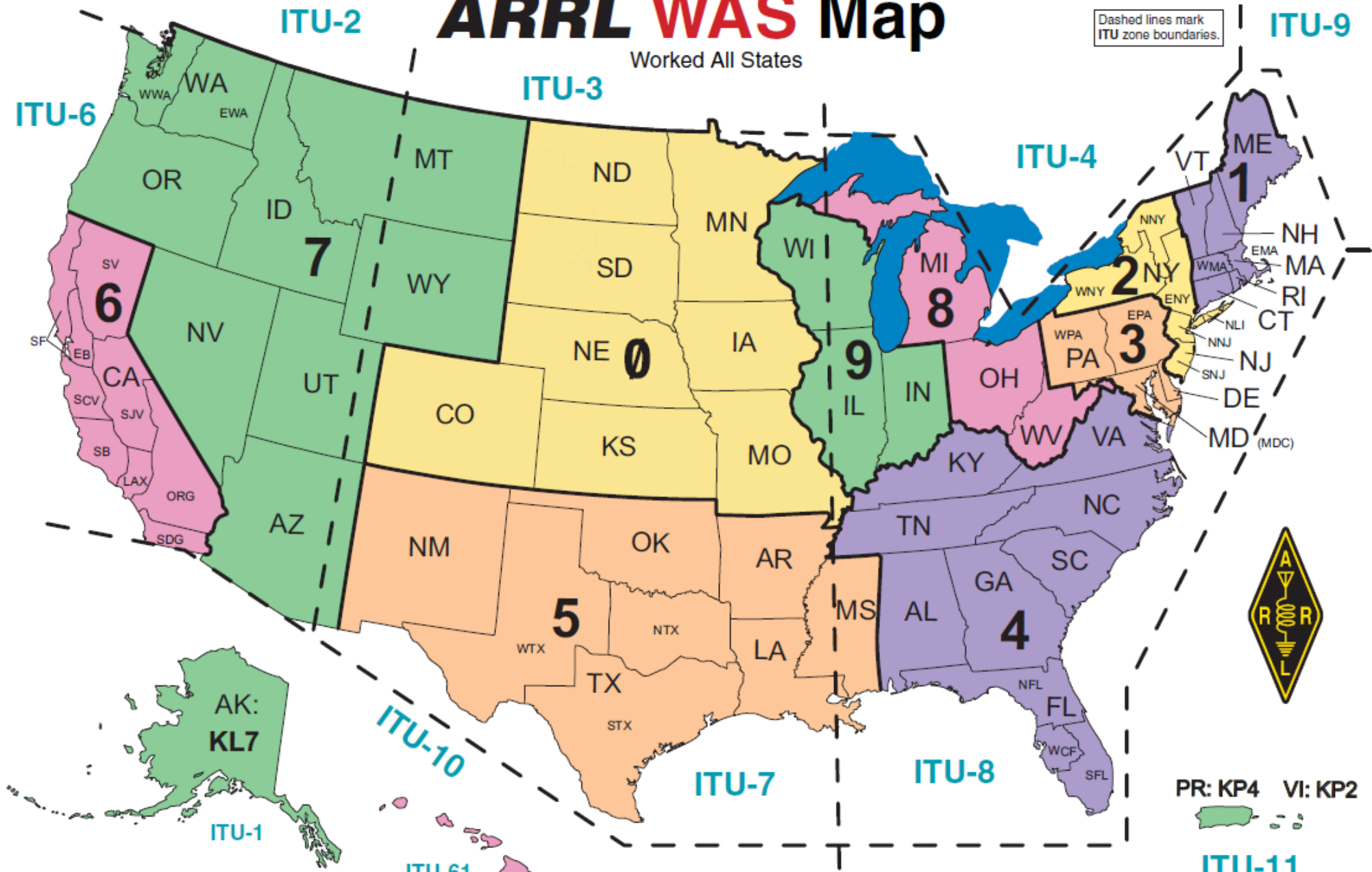
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2022 W1AW FIELD DAY BULLETIN SCHEDULE

Day	Mode	Pacific	Mountain	Central	Eastern	UTC
FRIDAY	CW	5:00 PM	6:00 PM	7:00 PM	8:00 PM	0000 (Sat)
	Digital	6:00 PM	7:00 PM	8:00 PM	9:00 PM	0100
	Phone	6:45 PM	7:45 PM	8:45 PM	9:45 PM	0145
	CW	8:00 PM	9:00 PM	10:00 PM	11:00 PM	0300
SATURDAY	CW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	1400
	Phone	8:00 AM	9:00 AM	10:00 AM	11:00 AM	1500
	CW	5:00 PM	6:00 PM	7:00 PM	8:00 PM	0000 (Sun)
	Digital	6:00 PM	7:00 PM	8:00 PM	9:00 PM	0100
SATURDAY	Phone	6:45 PM	7:45 PM	8:45 PM	9:45 PM	0145
	CW	7:00 AM	8:00 AM	9:00 AM	10:00 AM	1400
SUNDAY	Phone	8:00 AM	9:00 AM	10:00 AM	11:00 AM	1500
	Digital	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1600
	CW	7:30 AM	8:30 AM	9:30 AM	10:30 AM	1430
SATURDAY	CW	7:30 AM	8:30 AM	9:30 AM	10:30 AM	1430
	CW	5:30 PM	6:30 PM	7:30 PM	8:30 PM	0030 (Sun)
	Digital	6:30 PM	7:30 PM	8:30 PM	9:30 PM	0130
SUNDAY	CW	7:30 AM	8:30 AM	9:30 AM	10:30 AM	1430
	Digital	9:30 AM	10:30 AM	11:30 AM	12:30 PM	1630

K6KPH Field Day Bulletin Schedule

W1AW will operate on the regularly published frequencies.

CW frequencies are 1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675, 50.350 and 147.555 MHz.

Digital frequencies are 3597.5, 7.095, 14.095, 18.1025, 21.095, 28.095, 50.350 and 147.555 MHz. (Note: W1AW will transmit the Field Day Bulletin using 45.45 baud baudot, PSK31 {BPSK Mode}, and MFSK16 in this mode order).

Phone frequencies are 1.855, 3.990, 7.290, 14.290, 18.160, 21.390, 28.590, 50.350 and 147.555 MHz.

The Maritime Radio Historical Society's station K6KPH will transmit the "W1AW" Field Day message for the benefit of West Coast stations on 3.5815, 7.0475, 14.0475, 18.0975 and 21.0675 MHz. The frequencies for K6KPH Teleprinter (RTTY, PSK31 and MFSK16) will be 7.095 and 14.095 MHz (in this mode order).

At the time of publishing this packet but be sure to check the ARRL Main News page (www.arrl.org) if case of any last-minute changes.