

ARRL FIELD DAY MADE EASY

A Workshop for ARRL Field Day 2014



THE BASICS

- Purpose of Field Day
- Basic Rules of Field Day
- Station Setup
- Contact Exchange
- Logging Software
- Scoring

FIELD DAY PURPOSE

- Emergency Preparedness
 - Training Ourselves
 - Demonstration of emergency preparedness to the public, government, and served agencies
 - Experimentation with antennas, portable equipment, and unusual power sources
- Social Gathering
 - Eating and Drinking
 - Camaraderie and Friendship
 - Camping
 - Weekend “Getaway”

FIELD DAY PURPOSE

- Chance to try different radios
- Knowledge building and learning new skills
- Recruiting new hams and new club members
- Challenge of operating in abnormal situations and in less than ideal conditions
- Contesting / Competing
- FUN!

FIELD DAY HISTORY

- First Field Day was in 1933
- Stated simple with a few participants, and low scores (by today's standards)
- Annual tradition that grew and grew
- The most popular ham event of the year
- Detailed history available in Dec '99 QST, p. 28

MOTIVATION FOR FIELD DAY

- Many hams profess no interest in operating on Field Day, but in reality, they're often reluctant to participate because of
 - Mic Fright
 - Unfamiliarity with contesting procedures
 - No experience on HF

HOW TO OVERCOME THESE FEARS

- Those of us with experience are here to help you become comfortable with operating in an easy and non-threatening way
- Consider us your “Elmers” (mentors)

ELIGIBILITY TO PARTICIPATE IN FIELD DAY

- All amateurs in the US, Canada, and possessions
- DX Stations may be contacted for credit

OBJECT OF FIELD DAY

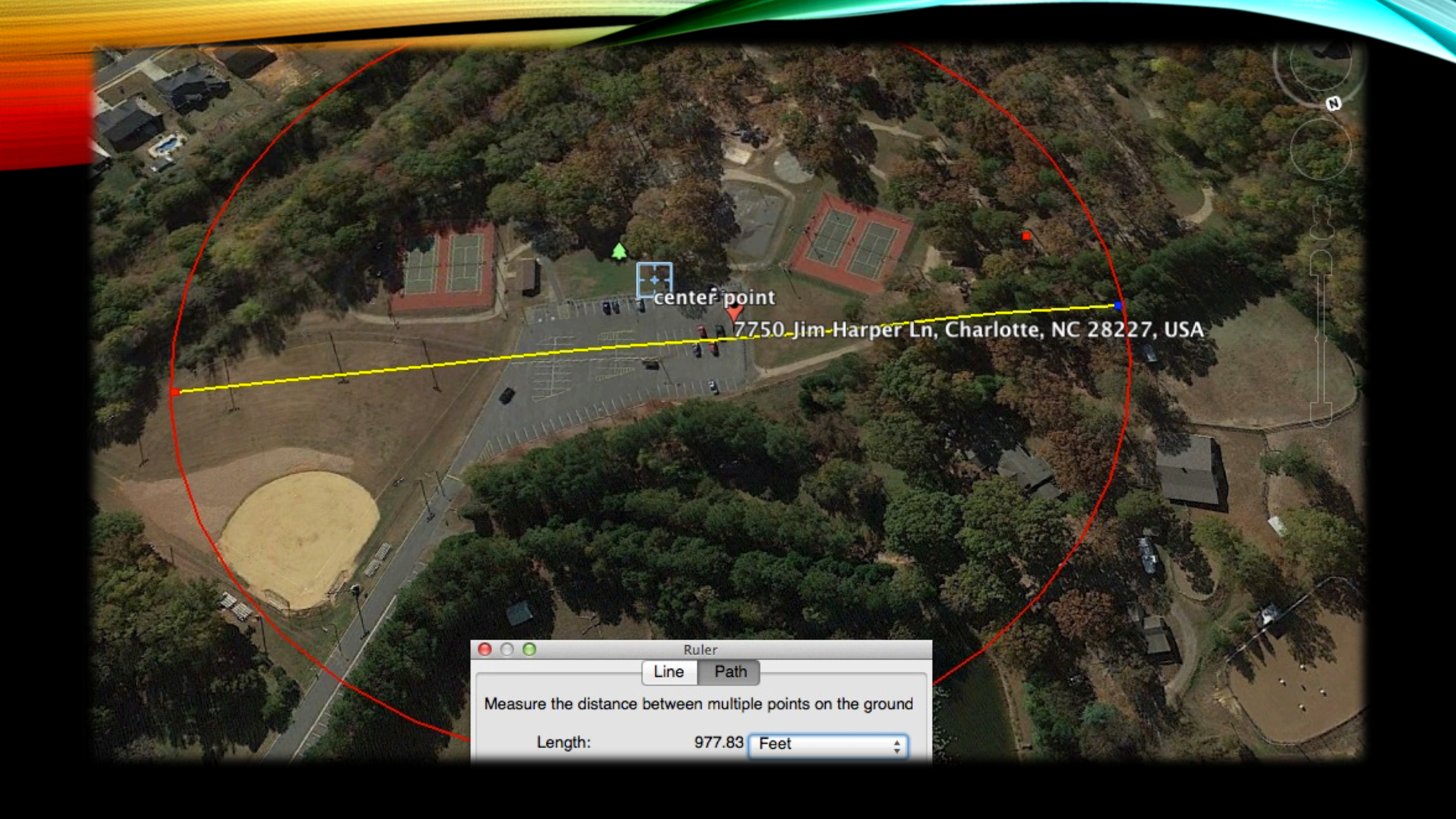
- Contact as many other stations as possible on any and all amateur bands (excluding 60, 30, 17, and 12 meter bands)
- Learn to operate in abnormal situations in less than optimal conditions
- Develop skills to meet the challenges of emergency preparedness
- Acquaint the general public with the capabilities of Amateur Radio

WHEN IS FIELD DAY?

- Always the fourth full weekend in June
 - June 28-29, 2014
- Begins at 1800UTC (2PM EDT) Saturday, June 28, and ends 24 hours later
- EXCEPTION! Class A and B stations that do not begin setting up until 1800 UTC (2PM EDT) may operate 27 hours
- Class A or B stations can not start setup before 0000UTC Friday (8:00PM EDT Thursday). Cumulative set-up time may not exceed a total of 24 hours.

OUR OPERATING LOCATION

- We will be hosting our Field Day at Wilgrove Park
 - 7750 Jim Harper Lane, Mint Hill, NC 28227
- We will start setup on Friday, June 27, 2014, at 1:00PM
 - Water
 - Gloves
 - Hat
 - Sunglasses
- Picnic will be on Saturday, June 28, 2014 at, at 12:00PM
 - See Mary, N4MH, for sign-ups



center point

7750 Jim Harper Ln, Charlotte, NC 28227, USA

Ruler

Line Path

Measure the distance between multiple points on the ground

Length: 977.83 Feet

ENTRY CATEGORIES

- Entry Categories are based on a number of things including:
 - Number of transmitters operating *simultaneously*
 - Class of Operation
 - (Class A) Club / Non-Club Portable
 - (Class A Battery) Club / Non-Club Portable
 - (Class B) One or Two Person Portable
 - (Class B – Battery) One or Two Person Portable
 - (Class C) Mobile
 - (Class D) Home Station
 - (Class E) Home Station – Emergency Power
 - (Class F) Emergency Operations Center / EOC

OUR OPERATING CLASS

- We will be operating as (Class A) Club Portable
 - Club of 3 or more persons set up specifically for Field Day.
 - A single licensee or trustee for the entry is responsible for the group entry
 - All equipment must lie within a circle whose diameter does not exceed 300 meter (1000 feet)
 - All contacts must be made with transmitters operating independent of commercial power mains
 - If you have 2+ Transmitters, you may also operate one additional station, known as the GOTA (Get on the Air) station
 - This station may operate any Field Day band, HF or VHF
 - This station must use a different callsign from the primary Field Day station
 - This station uses the same exchange as it's parent

OUR OPERATING CLASS

- GOTA (Continued)
 - The GOTA station may be operated by any licensed person.
 - Non-licensed persons may operate under the direct supervision of a control operator.
 - A list of operators and participants must be included in your submission to the ARRL
 - A maximum of 500 QSOs may be claimed for credit
- Free VHF Station
 - May also operate one additional transmitter above 50 MHz.
 - This station does not qualify for a 100-point bonus as an additional transmitter
 - All contacts count for QSO credit. Operated using the primary callsign of the Field Day group.

OTHER RULES

- Phone, CW, and Digital are considered separate “Bands” when making contacts
- All Phone contacts (SSB, FM, AM, Satellite) are equivalent – 1 point each
- All Digital Contacts (PSK31, MT63, Packet, Pactor, etc.) are equivalent – 2 points each
- Only one transmitter per band at any time (except the GOTA station)
- No contacts on repeaters or 146.52 Simplex
- All stations (minus GOTA) must use the same call sign
- Can only work each station once per band-mode
 - You can work a station once on 20M Phone, 20M CW, 20M Digital (total of 5 points)
 - You can work the same station on other frequency bands and modes for additional points

OUR OPERATING EQUIPMENT

- We will be operating as a 3A group this year, but we will have 5 stations set up for operation.
 - CW
 - Phone/SSB
 - Digital
 - GOTA
 - VHF

OPERATING STATION 1

- CW Station
 - TS-570S
 - Antenna Tuner
 - A3 Beam
 - Dual-Band Dipole
 - Laptop for Logging

OPERATING STATION 2

- Phone / SSB
 - Jupiter
 - Antenna Tuner
 - A4 Beam
 - Dual Band Dipole
 - Laptop for Logging

OPERATING STATION 3

- Digital Station
 - TS-570D
 - Dipole Antenna
 - Laptop for Logging
 - Laptop for Operating (Potentially another monitor, if needed?)

OPERATING STATION 4

- GOTA Station
 - Pegasus
 - WB2NHQ's Double Zepp Antenna
 - WB2NHQ's Laptop for Logging

OPERATING STATION 5

- VHF Station
 - TS60
 - 6M Beam
 - Paper Logging

BONUS!

- Satellite QSOs
 - Working with Ray Weeks to get an antenna for us to use to try to operate some satellites!

CONTACT “EXCHANGE”

- In order to make a valid contact, the information to be exchanged consists of:
 - Number of Transmitters at your site
 - Class of Operation
 - ARRL Section
- Examples:
 - On CW: “3A NC”
 - On Phone: “Three Alpha, North Carolina” / “Three Alpha, November Charlie”

EXCHANGES

- An example of a good exchange
 - CQ Field Day, CQ Field Day from NC4DP, November Charlie Four Delta Papa
 - NC4DP, Here is Whiskey Four Bravo Foxtrot Bravo
 - W4BFB, Please Copy Four Alpha, North Carolina
 - QSL, Please Copy Three Alpha, North Carolina
 - Thank you, good luck in Field Day. CQ Field Day, CQ Field Day
- Feel free to ask for repeats
 - NC4DP, Please repeat the exchange!

LOGGING SOFTWARE

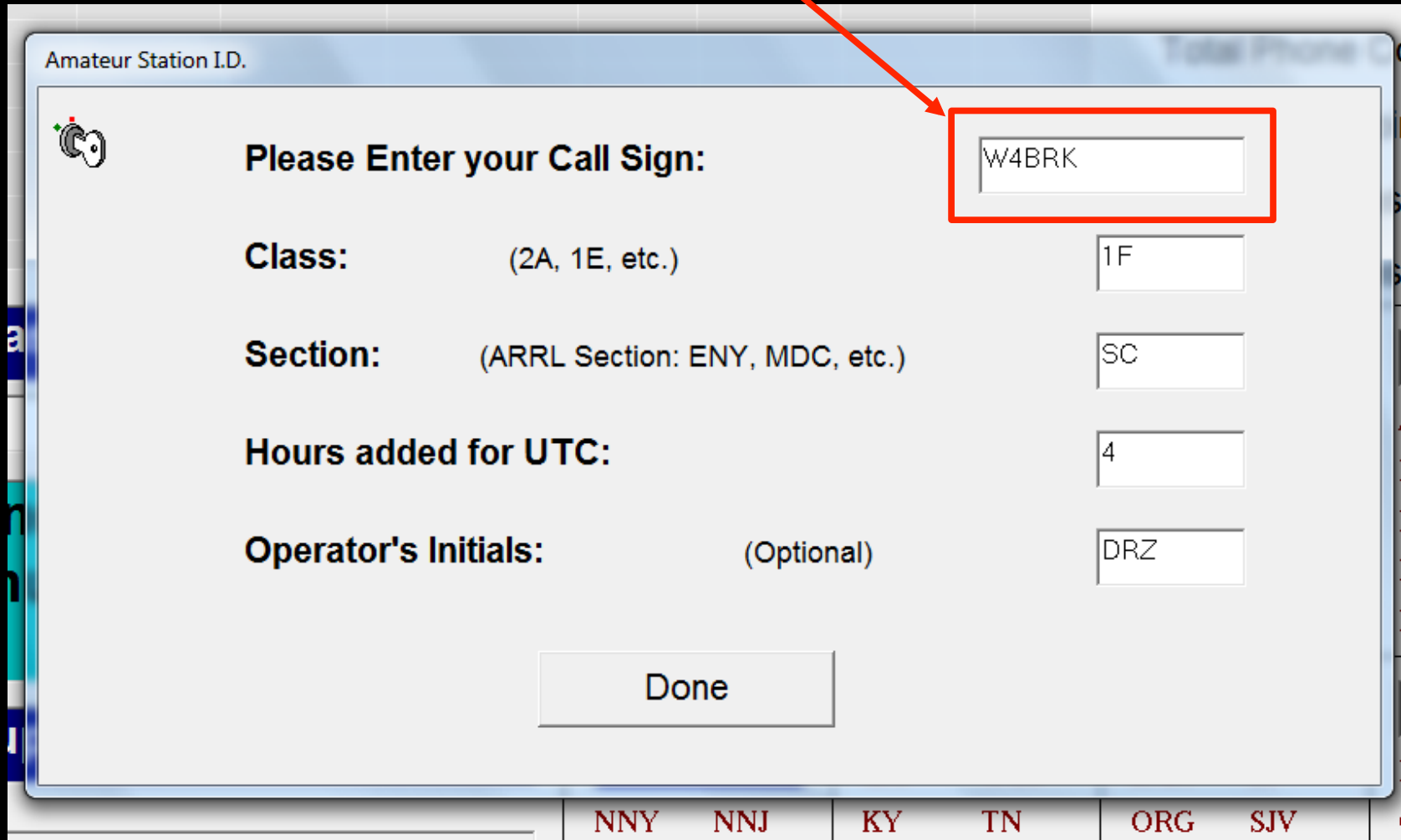
- Log must include date, time, callsign, and exchange
- Duplicates must be notated
- Points need to be added, multiplier applied, bonus points added, etc.
 - There is a lot of room for mistakes to happen if we log on paper
- Computer Logging!

LOGGING SOFTWARE

- Tracks number of QSOs, Q rate, Multipliers worked and needed, and current score across multiple computers in real-time
- Avoids working stations more than once (avoiding duplicates)
- Can format log for digitally submitting


- We will use N3FJP's Field Day Log Software

Ensure that the Field Day Call Sign is correct



The image shows a screenshot of a software dialog box titled "Amateur Station I.D.". The dialog box contains several input fields for station information. A red arrow points from the top text to the "Call Sign" input field, which is also highlighted with a red rectangular border. The call sign entered is "W4BRK". Other fields include "Class" (1F), "Section" (SC), "Hours added for UTC" (4), and "Operator's Initials" (DRZ). A "Done" button is located at the bottom of the dialog box. Below the dialog box, a portion of another window is visible, showing a list of call signs: NNY, NNJ, KY, TN, ORG, SJV.

Amateur Station I.D.

 Please Enter your Call Sign:

Class: (2A, 1E, etc.)

Section: (ARRL Section: ENY, MDC, etc.)


Hours added for UTC:

Operator's Initials: (Optional)

NNY NNJ KY TN ORG SJV

Ensure that Class is correct

Amateur Station I.D.

 Please Enter your Call Sign:

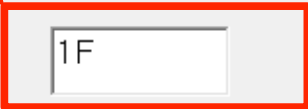
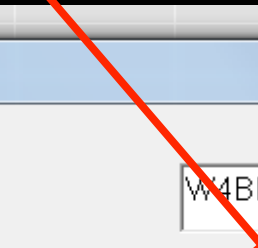
Class: (2A, 1E, etc.)

Section: (ARRL Section: ENY, MDC, etc.)

Hours added for UTC:


Operator's Initials: (Optional)

NNY NNJ KY TN ORG SJV



Ensure that Section is correct

Amateur Station I.D.

 Please Enter your Call Sign:

Class: (2A, 1E, etc.)

Section: (ARRL Section: ENY, MDC, etc.)


Hours added for UTC:

Operator's Initials: (Optional)

NNY NNJ KY TN ORG SJV

Ensure that the offset from UTC is correct

Amateur Station I.D.

 Please Enter your Call Sign:

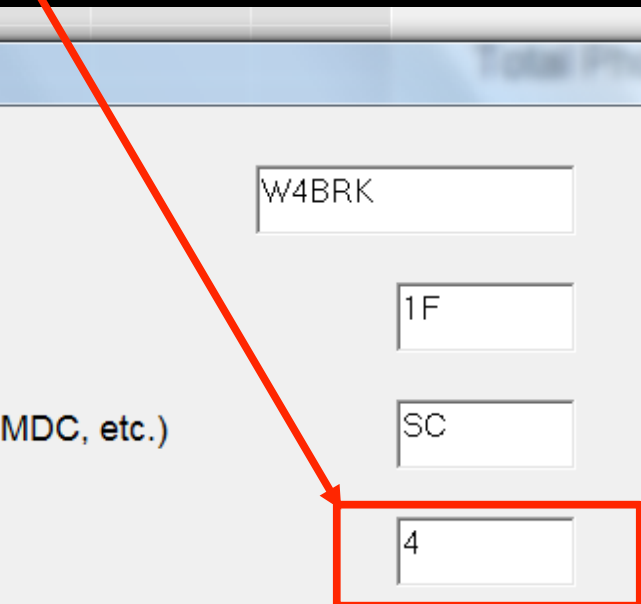
Class: (2A, 1E, etc.)

Section: (ARRL Section: ENY, MDC, etc.)

Hours added for UTC:


Operator's Initials: (Optional)

NNY NNJ KY TN ORG SJV



If you will be operating, enter your initials

Amateur Station I.D.

 Please Enter your Call Sign:

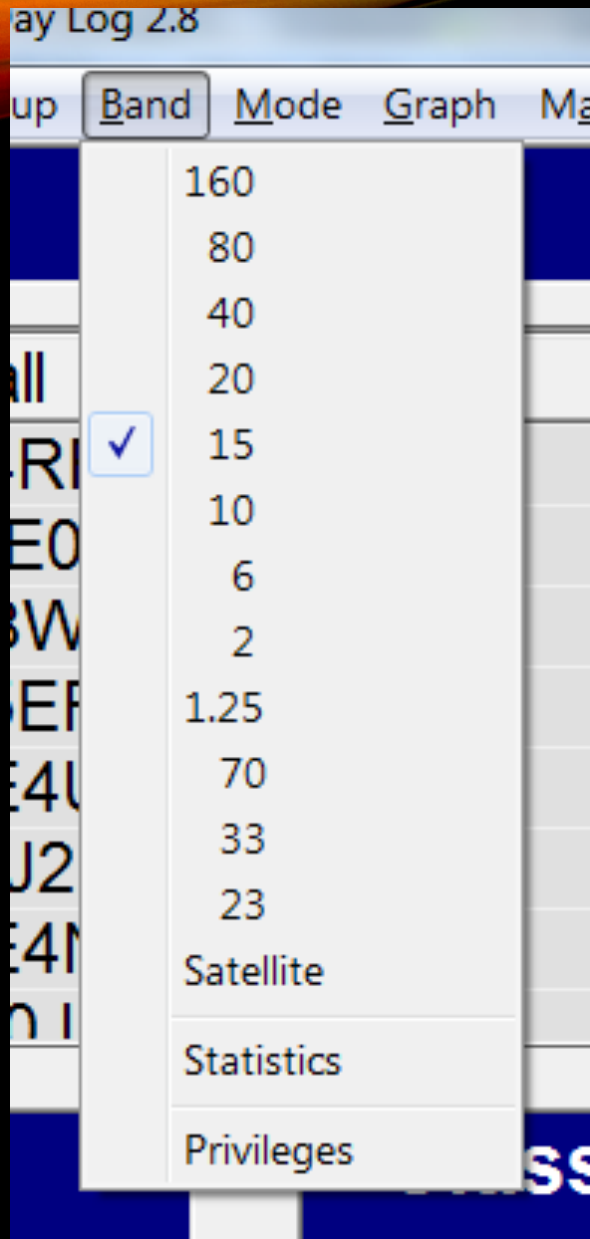
Class: (2A, 1E, etc.)

Section: (ARRL Section: ENY, MDC, etc.)

Hours added for UTC:

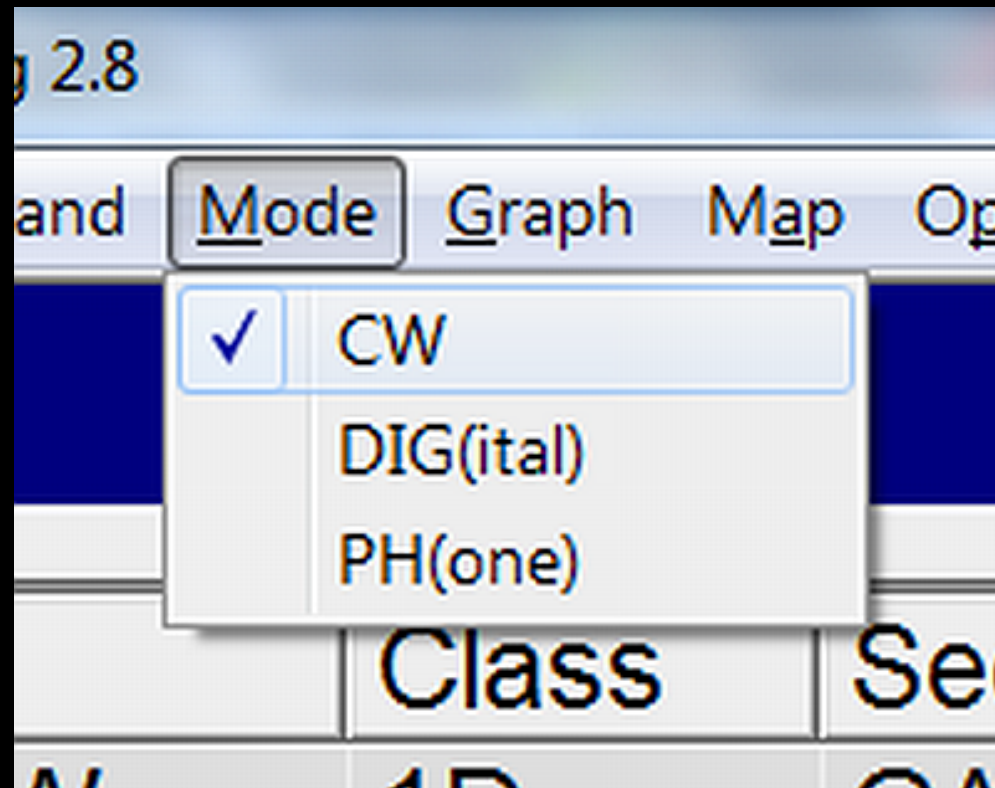
Operator's Initials: (Optional)

NNY NNJ KY TN ORG SJV

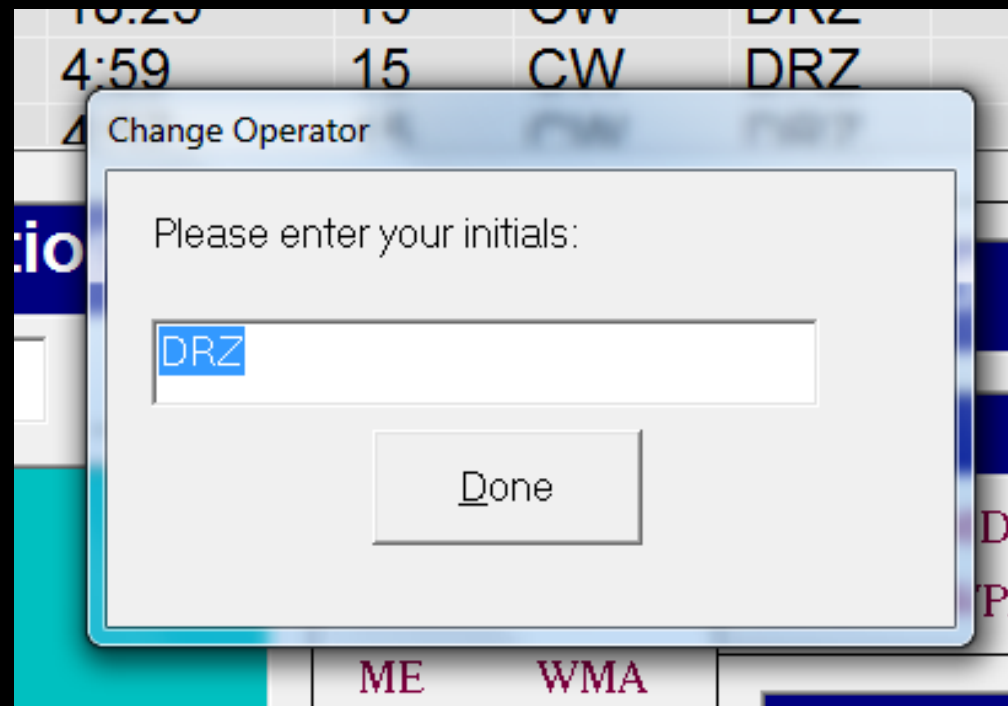


To change the current operating Band, click Band on the menu and select the new Band

To change the current operating Mode, click Mode on the menu and select the new Mode



To change the Operator Initials, click Operator on the menu – Enter the new initials then click Done to save



The image shows a screenshot of a software interface. In the background, there is a table with columns containing text like '10.20', '4:59', '15', 'CW', 'DRZ', 'ME', and 'WMA'. Overlaid on this is a dialog box titled 'Change Operator'. Inside the dialog box, the text 'Please enter your initials:' is followed by a text input field containing 'DRZ'. Below the input field is a button labeled 'Done'.

10.20	15	CW	DRZ
4:59	15	CW	DRZ
ME	WMA		

Change Operator

Please enter your initials:

DRZ

Done

N3FJP's Field Day Log 2.8 www.n3fjp.com

File Options Setup Band Mode Graph Map Operator Help

Recent Contacts

Find Last 20

Rec#	Call	Class	Sec	Date	Time	Bnd	Mode	Opr
12	WE0ASC	1F	CO	4/09	3:52	15	CW	DRZ
11	N8WIO	1D	OH	4/09	3:51	15	CW	DRZ
10	K5ERT	2A	NTX	4/09	3:50	15	CW	DRZ
9	VE4UIE	1A	QC	4/09	3:50	15	CW	DRZ
8	WJ2REI	1D	ORG	2/29	18:25	15	CW	DRZ
7	KE4NVB	1A	PR	2/09	4:59	15	CW	DRZ
6	W0ILL	3A	EPA	2/09	4:57	15	CW	DRZ
5	KW3IER	2A	WTX	2/09	4:57	15	CW	DRZ

Click record to edit or delete.

Score Statistics

Total CW Contacts.....	12
Total Digital Contacts...	0
Total Phone Contacts...	0
Total QSO Points.....	24
QSOs / Hr (last 20 min)	0
QSOs / Hr (last 60 min)	0

Call Class Section

Select a band and mode from the menu bar!

Sections Worked

1	3	5	7	0
CT RI	DE MDC	AR NTX	AZ OR	CO MO
MA VT	EPA WPA	LA OK	EWA UT	IA NE
ME WMA		MS STX	ID WWA	KS ND
NH		NM WTX	MT WY	MN SD
	4	6		Canada
2	AL SFL	EB SDG	8	NL SK
NNY NNJ	GA WCF	LAX SF	MI WV	MAR AB
ENY SNJ	KY TN	ORG SJV	OH	QC BC
NLI WNY	NC VA	SB SV	9	ON NT
	NFL PR	SCV PAC	IL WI	MB
	SC VI		IN	

Possible Duplicates On

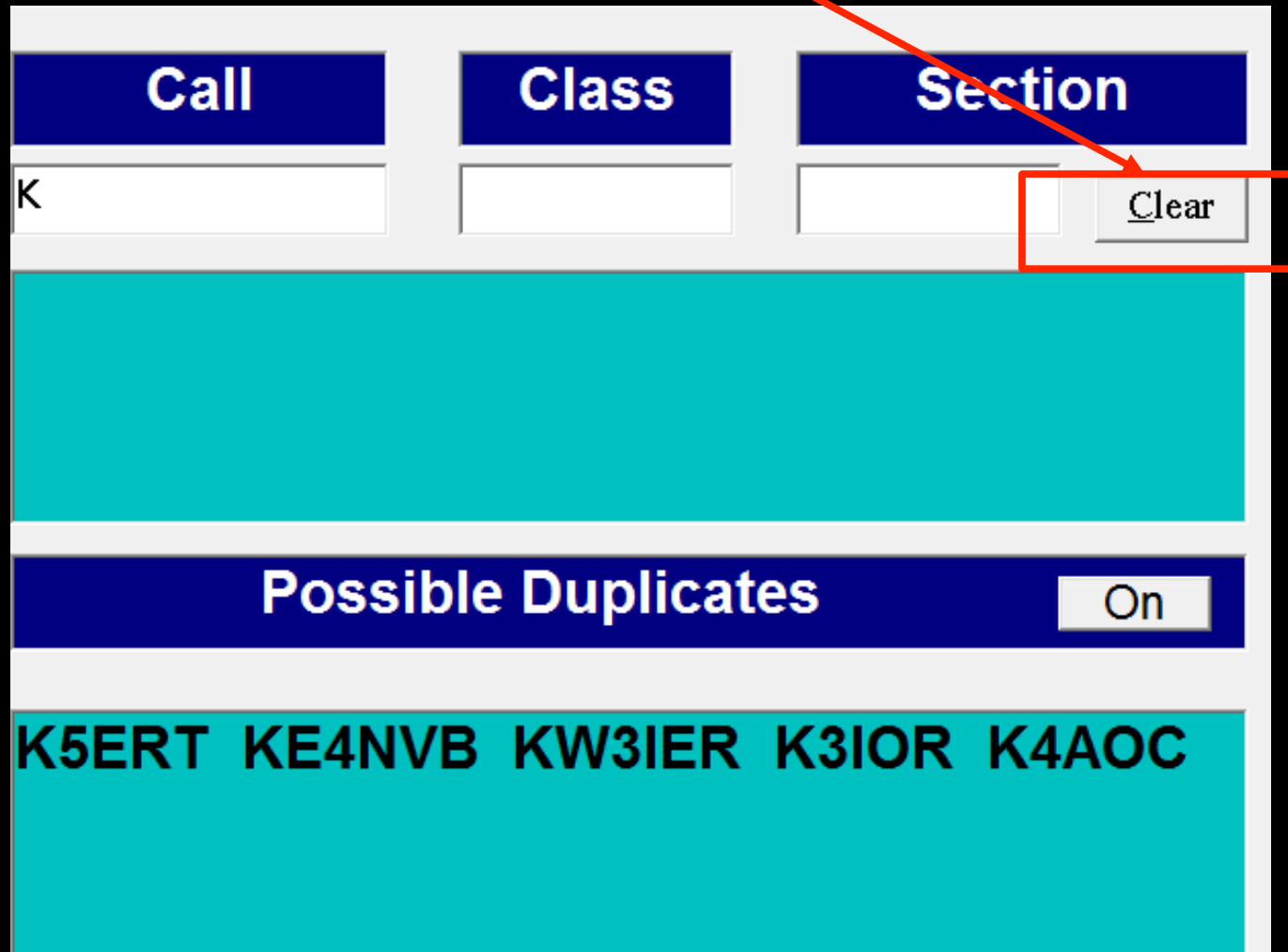
Band **15** Mode **CW** **W4BRK** **1F** **SC** 4:16:28 PM 20:16:28 UTC

Move from one field to the next by pressing space bar, tab, or simply type the exchange and the software will tab automatically! Try it!

Call	Class	Section	
K			<input type="button" value="Clear"/>
Possible Duplicates <input type="button" value="On"/>			
K5ERT KE4NVB KW3IER K3IOR K4AOC			

As you enter a call, a list of possible duplicates will be displayed below

If you determine that the call you are entering is a duplicate, click on clear or press Esc to erase all fields



The screenshot shows a software interface for entering call information. It features three input fields labeled 'Call', 'Class', and 'Section'. The 'Call' field contains the letter 'K'. To the right of these fields is a 'Clear' button, which is highlighted with a red rectangular box. A red arrow points from the text above to this button. Below the input fields is a large cyan-colored area. At the bottom of the interface, there is a blue bar with the text 'Possible Duplicates' and a toggle switch set to 'On'. Below this bar, a list of call signs is displayed: K5ERT KE4NVB KW3IER K3IOR K4AOC.

Call	Class	Section
K		

Possible Duplicates On

K5ERT KE4NVB KW3IER K3IOR K4AOC

When you have a valid Call Sign entered, press the space bar, tab key or simply start typing the class to move to the Class entry field.

Click record to edit or delete.

Call	Class	Section
K4RFW		

TAB

Possible Duplicates On

Enter the Class then press the space bar, tab key or just start typing the section to move to the Section entry field. The software will tab automatically!

The screenshot shows a software interface with three input fields: 'Call', 'Class', and 'Section'. The 'Call' field contains the text 'K4RFW'. The 'Class' field contains the text '1D'. The 'Section' field is currently empty. A red arrow originates from the 'Class' field and points to the 'Section' field, with the word 'TAB' written in black text below the arrow. To the right of the 'Section' field is a 'Clear' button. Below the input fields is a large cyan rectangular area. At the bottom of the interface is a dark blue bar with the text 'Possible Duplicates' and a toggle switch set to 'On'.

If you enter an invalid Section designator an Error window will appear – Click on Yes to correct the entry

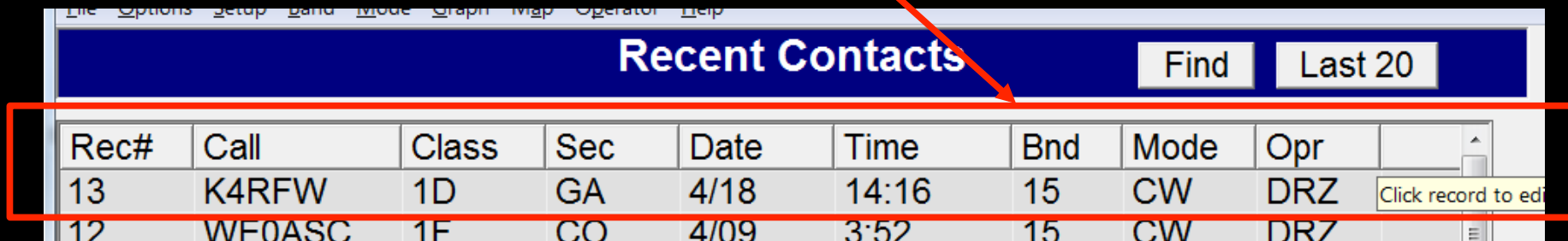
The screenshot shows a software interface with three input fields: 'Call' containing 'K4RFW', 'Class' containing '1D', and 'Section' containing 'GF'. A red arrow points from the text above to the 'Section' field. An error dialog box titled 'Invalid section!' is overlaid on the 'Section' field. The dialog contains the text 'GF is not a valid section. Do you want to edit the section?' and two buttons: 'Yes' and 'No'. Below the input fields, a large cyan banner reads 'Invalid Section'. At the bottom, a blue bar contains the text 'Possible Duplicates' and a button labeled 'On'. To the right, there is a table with state abbreviations and counts.

ME	WI	4
NH		
		2
AL	SFL	
GA	WCF	

When you have a valid entry, press the *Enter* key to save

Call	Class	Section	
K4RFW	1D	GA	Clear
Possible Duplicates			On

Your entry will appear at the top of the Recent Contacts list – The *Date, Time, Band, Mode* and *Operator Initials* will be automatically filled-in




The screenshot shows a software window titled "Recent Contacts" with a menu bar (File, Options, Setup, Band, Mode, Graph, Map, Operator, Help) and buttons for "Find" and "Last 20". Below the title bar is a table with the following columns: Rec#, Call, Class, Sec, Date, Time, Bnd, Mode, Opr, and an empty column with an up arrow. The table contains two rows of data. A red arrow points from the text above to the "Date" column of the first row. A red box highlights the entire table area.


Rec#	Call	Class	Sec	Date	Time	Bnd	Mode	Opr	
13	K4RFW	1D	GA	4/18	14:16	15	CW	DRZ	Click record to edit
12	WF0ASC	1F	CO	4/09	3:52	15	CW	DRZ	

To Edit or Delete a contact entry, scroll to the contact, click on the entry and two boxes appear

Rec#	Call	Class	Sec	Date	Time	Bnd	Mode	Opr	
13	K4RFW	1D	CA	7/23	14:16	15	CW	DRZ	
12	WE0ASC	1F	CO	7/23	3:52	15	CW	DRZ	
11	N8WIO	1D	OH	7/23	3:51	15	CW	DRZ	
10	K5ERT	2A	NTX	7/23	3:50	15	CW	DRZ	
9	VE4UIE	1A	QC	7/23	3:50	15	CW	DRZ	
8	WJ2REI	1D	ORG	7/23	3:50	15	CW	DRZ	
7	KE4NVB	1A	PR	7/23	3:50	15	CW	DRZ	
6	W0 III	3A	FPA	7/23	3:50	15	CW	DRZ	


Click record to edit or delete.

 Edit

 Delete

ip
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/2
/2
/2
/2

Edit Contact Entry - Field Day



Edit Contact:

Callsign

Class

Section

Date

Time

Band

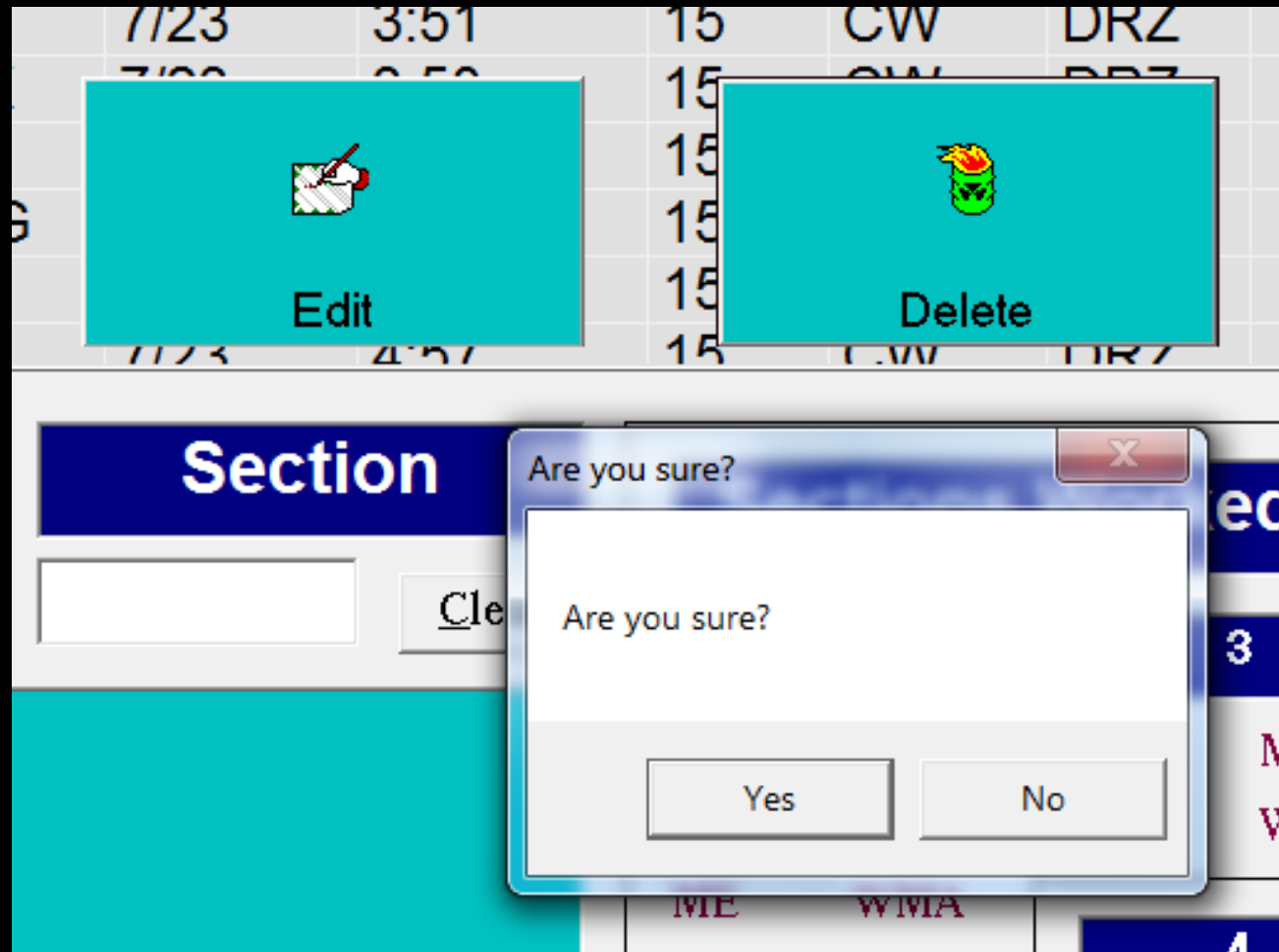
Mode

Initials

NET WNT NPL TR SC

If you click on *Edit*, an edit window appears – Edit any entry fields then click on *Cancel* to not save the changes or *Done* to save your changes

If you click on *Delete*, a confirmation window appears
– Click on *No* to leave the entry in the log or click *Yes* to permanently delete the entry



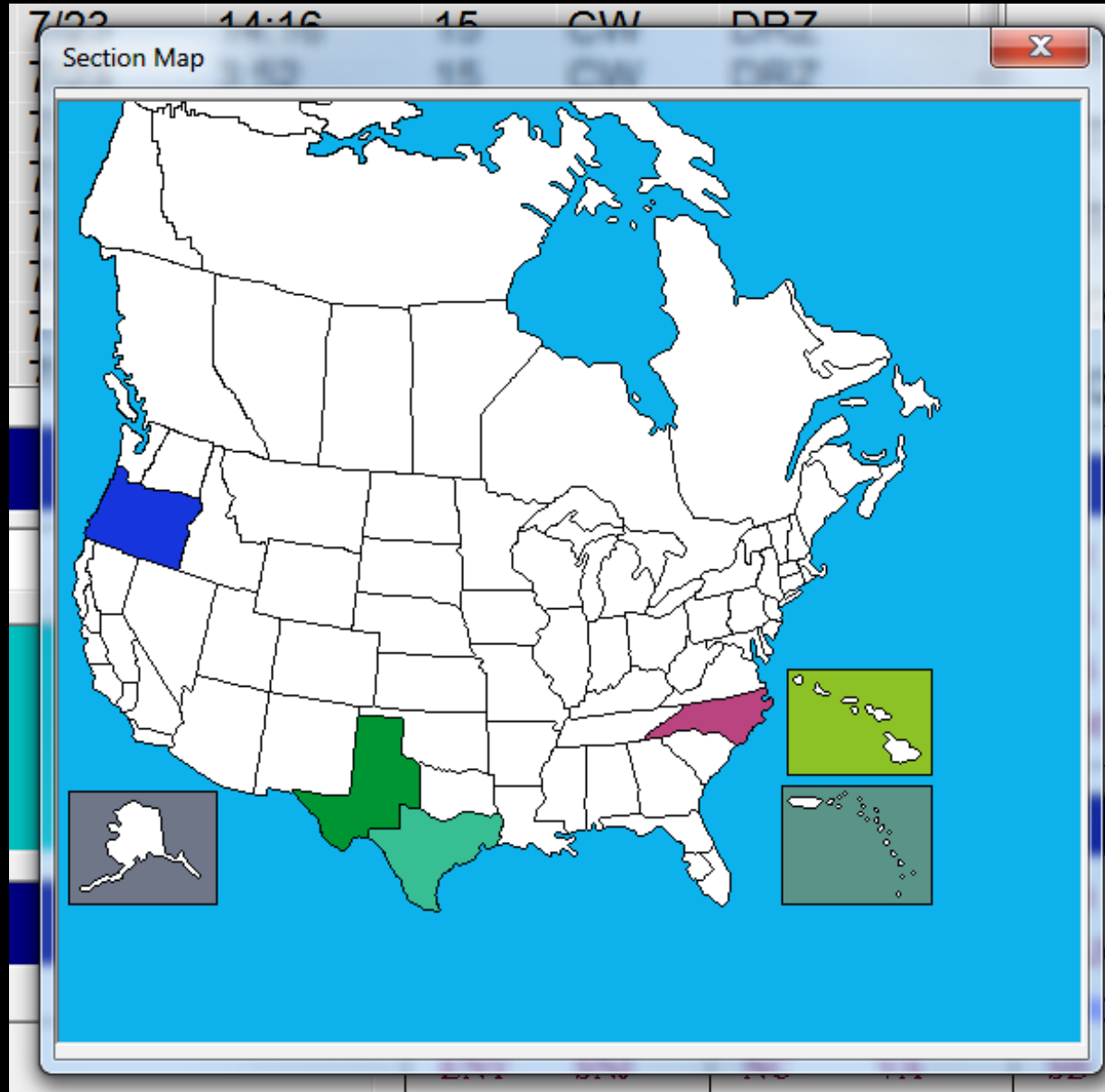
When a Section is worked for the first time, the abbreviation is highlighted in Blue

Sections Worked									
1		3		5		7		0	
CT	RI	DE	MDC	AR	NTX	AZ	OR	CO	MO
EMA	VT	EPA	WPA	LA	OK	EWA	UT	IA	NE
ME	WMA			MS	STX	ID	WWA	KS	ND
NH				NM	WTX	MT	WY	MN	SD
		4		6		8		Canada	
2		AL	SFL	EB	SDG	MI	WV	NL	SK
NNY	NNJ	GA	WCF	LAX	SF	OH		MAR	AB
ENY	SNJ	KY	TN	ORG	SJV			QC	BC
NLI	WNY	NC	VA	SB	SV	9		ON	NT
		NFL	PR	SCV	PAC	IL	WI	MB	
		SC	VI			IN			

As Contacts are added, statistics are continually updated

Score Statistics	
Total CW Contacts.....	13
Total Digital Contacts...	0
Total Phone Contacts...	0
Total QSO Points.....	26
QSOs / Hr (last 20 min)	3
QSOs / Hr (last 60 min)	1

Clicking *Map* on the menu bar produces a graphical representation of sections worked



Recent Contacts

Rec#	Call	Class	Sec	Date	Time	Bnd	Mode	Opr
2	KA8PCP	1F	OH	5/14	1:39	15	CW	ELP
1	N8WL	1A	OH	5/14	1:39	15	CW	ELP

Score Statistics

Total CW Contacts.....	2
Total Digital Contacts...	0
Total Phone Contacts...	0
Total QSO Points.....	4
QSOs / Hr (last 20 min)	0
QSOs / Hr (last 60 min)	0

Call	Class	Section
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="button" value="Clear"/>		

**Dupe: N8WL 1A OH 2007/05/14
 01:39:02 ON 15 CW Rec# 1**

Possible Duplicates

Sections Worked

1	3	5
CT RI EMA VT ME WMA NH	DE MDC EPA WPA	AR NTX LA OK MS STX NM WTX
2	4	6
NNY NNJ ENY SNJ NLI WNY	AL SFL GA WCF KY TN NC VA NFL PR SC VI	EB SDG LAX SF ORG SJV SB SV SCV PAC
		7
		AZ OR EWA UT ID WWA MT WY NV AK
		8
		MI WV OH
		9
		IL WI IN
		0
		CO MO IA NE KS ND MN SD
		Canada
		NL SK MAR AB QC BC ON NT MB



NETWORKING

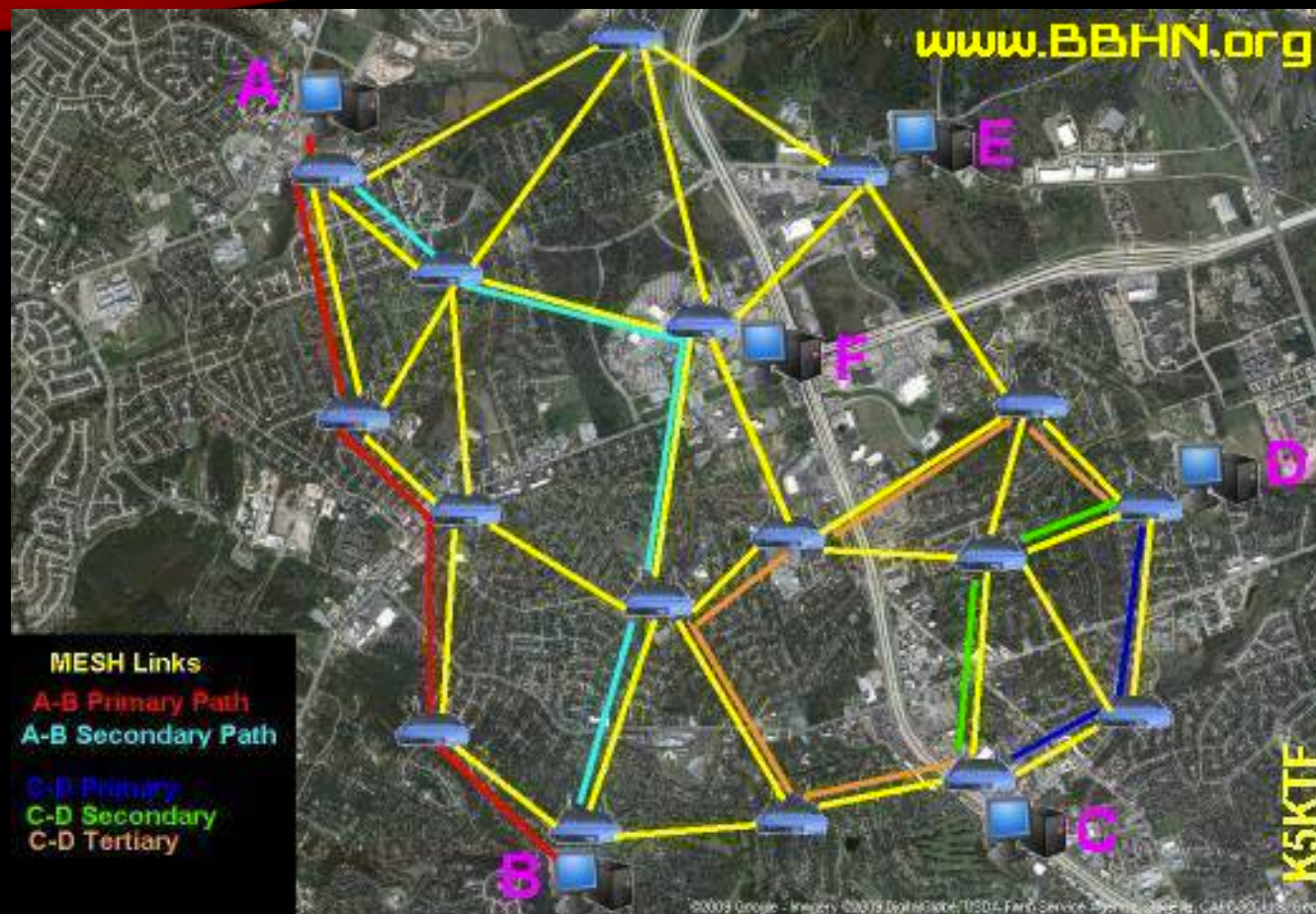
- Broadband-Hamnet™ (formerly called HSMM-Mesh™) is a high speed, self discovering, self configuring, fault tolerant, wireless computer network that can run for days from a fully charged car battery, or indefinitely with the addition of a modest solar array or other supplemental power source. The focus is on emergency communications.
- In its current form it is built using the Linksys WRT54G/GL/GS wireless routers and operates on channels 1-6 of the 2.4GHz ISM band, which overlaps with the upper portion of the 13cm amateur radio band.
- Optimized Link State Routing Protocol is used for auto linking of the mesh node radios.
- OpenWRT firmware tools are used for firmware development.
- Broadband-Hamnet™ is currently being designed, developed and deployed as an amateur radio broadband communications system. It originated in Austin, Texas but has spread all across the USA and many other countries around the world.

Here is visual representations of HSMM-MESH™ Networks.

As long as one node can see another, devices on the network can talk to other devices on the network. Each node can relay traffic between nodes. You can see that between any 2 computers or devices, you can have multiple paths, giving redundancy in case one node goes down. Paths of different quality are automatically considered. If one path is worse than another, it gets less traffic.

If a node that is in use goes down, the surrounding nodes will automatically figure out an alternate route to pass traffic. Using OLSR, the best route is automatically determined and used.

Items connected to nodes can be any network-enabled device, such as Computers, IP webcams, IP telephones, web, email, or file servers, RMS winlink nodes, network-attached-storage, etc. Anything that can communicate over a standard TCP/IP network will work over HSMM-MESH™.



SCORING

- You receive 1 point for each voice contact
- You receive 2 points for each CW or Digital contact
- You Receive a Power Multiplier
 - QRP (Very Low Power) Without Gas Generator or Commercial Power – 5x
 - QRP With Gas Generator or Commercial Power – 2x
 - Low Power (Less than 150w) – 2x
 - High Power (More than 150w) – 1x
- Bonus Points

BONUS POINTS

- 100% Emergency Power – 100 Points per transmitter classification, up to 20.
- Media Publicity – 100 points
- Public Location – 100 points
- Public Information Table – 100 Points
- NTS Message to ARRL Section Manager – 100 points
- Message Handling – 10 points per message, up to 100 points
- Satellite QSO – 100 points for at least 1 QSO
- Alternate Power – 100 Points
- W1AW Bulletin – 100 Points
- Educational Activity – 100 Points
- Site Visitation by an Elected Government Official – 100 Points
- Site Visitation by a Representative of an Agency – 100 Points
- GOTA Station – 20 points per 20 QSOs for a single operator, up to 100 Points. 500 Points max.
- Web Submission – 50 points
- Youth Participation – 20 points for each participant 18 or younger that completes 1 QSO, 100 Points Max.



Over 2,000
potential
points!

2013 RESULTS

#	Call	Score	Category	QSOs	Power Mult	GOTA Call	Section	Participants	Club
1	K4FQU	11,798	3A	3,717	2		NC	7	Carolina Contest Consortium
2	W4YK	5,932	3A	1,345	2		NC	56	Blue Ridge ARC
3	W4BFB	3,452	3A	1,020	2		NC	36	
4	NC4ML	2,892	3A	845	2	KR4W	NC	35	Moore Co ARS
5	KW4P	2,776	3A	988	2		NC	12	Haywood Co ARC
6	KM4C	2,526	3A	663	2		NC	17	Shelby ARC / ARES of Clev Co
7	N4GAS	2,258	3A	444	2	K4GNC	NC	33	Gaston Co ARS
8	NC4LC	2,188	3A	419	2		NC	39	
9	K4WO	1,828	3A	534	2		NC	38	Albemarle ARS
10	WA4TRS	1,390	3A	317	2	K2JB	NC	15	The Road Show ARC

10 WA4TRS 1,390 3A 317 2 K2JB NC 15 The Road Show ARC

Q&A

- Questions?