

Introduction to Computer Logging Programs

For

Flinthills Amateur Radio Club

By Brad Wick W0CO

Introduction:

Field Day is the first Amateur Radio Event that many Hams participate. Whether it is setting up in the field, operating, logging, cooking, moral support, bonus points activities or social visiting, there is an activity for everyone at Field Day.

This has been true for myself. My current interest in Amateur Radio has changed or evolved through my 52+ years in the hobby and my activity at Field Day has also changed. Operating, QRO, QRP, Antenna design, Contesting whatever my current interest, that has driven my activities or assignments at Field Day.

Twenty-two years ago, I moved to central Colorado and was invited to Field Day by a local group of Hams. It was fun, we scored about the same a previous years and some expressed a desire to do better. I looked at the paper logging, the manual dupe sheets and the hours someone was going to spend in figuring out our score and getting it submitted to the ARRL and I decided to introduce the group to computer logging the following year. That could be my part next year.

Field Day Logging:

The entry data requirements for Field Day are:

- Number of Participants
- Power Sources
- [Transmit Power Multiplier](#)
- Number of Transmitters and Entry Class
- Bonus Point Documentation
- [Total QSOs by mode](#)
- [Logged QSO count by Band and Mode and Transmit Power](#)
(With duplicate QSOs removed.)

The Power Multiplier and Total QSO by Mode are determined from the last item in the list, which is the most difficult item to prepare by hand written logs. This is best done by computer logging software.

Computer Logging Software

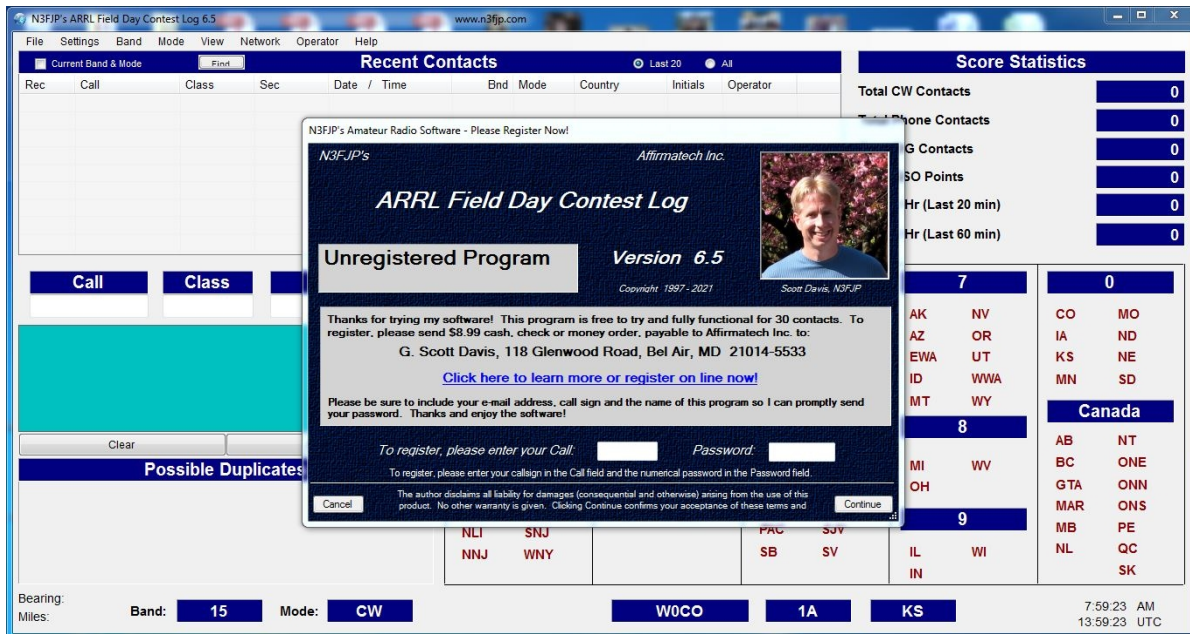
Various versions have been around for 30+ years. Today Ham Radio Deluxe, Log4OM 2, N3FJP, Writelog and N1MM+ are just a few that can be used. Each has their strengths and weaknesses. We are going to look at N3FJP's Field Day Logging software in more detail because it is easy to install, configure and a nice way to be introduced to computer logging.

How to Get Started with N3FJP Field Day Software.

- Visit the N3FJP website through any web browser www.N3FJP.com (Explorer, Firefox, Chrome, Edge...any browser will work fine.)
- Open the [Contest Logs >> ARRL Contest Logs >> Field Day Tab](#).



- Select “**Download ARRL Field Day Contest Log Now!**” and save the file when the small window appears.
- Move the file “**FIELD DAY.exe**” from your downloads folder to the desktop, right mouse click on file and select ‘**Run as Administrator**’. This will install the program and place a shortcut on the desktop to start the program.
- Start the program from the desktop shortcut and the following window will open.



Using the “Unregistered Program” will allow all the features to be functional and is limited to only 30 QSO entries. You start the “Unregistered Program” by left mouse clicking on the “**Continue**” button.

If you decide to register the program, it will request payment of \$8.99 for the Field Day contest program or \$49 for all the N3FJP programs. You will be sent a password by email, that when entered on this screen will release the QSO limitation and remove the “Unregistered Notification Window”.

“Logging Software” is referenced in this document and it refers to the N3FJP Field Day Logging Software.

Starting with the Settings.

- The first time you run the program, it will require you filling out some station information. You can access it again in the [Settings >> Setup Tab](#). You will need to enter your Field Day Class and ARRL Section. This can be changed later before the event.
- Do enter the Operator call or name and Initials. **This will be important (required) when operating this software in a network.**

Setup (Ctrl S)

Common Fields

Call: W0CO

Country: USA

Continent: NA

Latitude: 41.1

Longitude: West is negative -96.4

CQ Zone: 4

ITU Zone: 7

Required for Field Day

Class: 1A

ARRL Section: CO

Optional

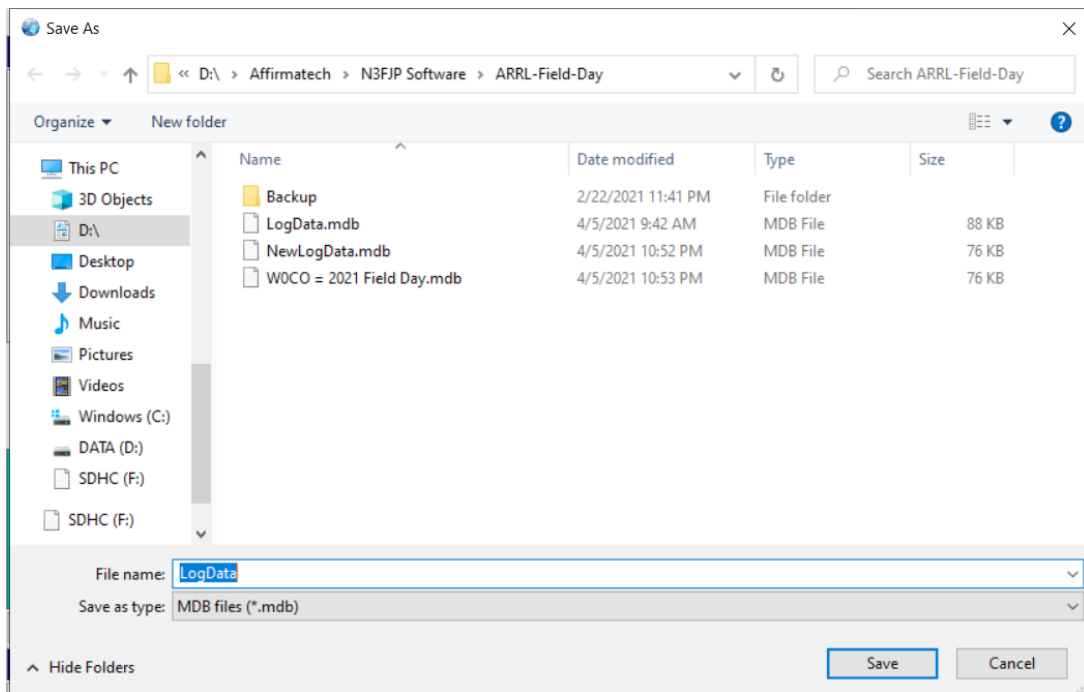
Operator: W0CO

Initials: BJW

Always display this form on startup (you can display it from the Settings menu at any time).

Help Done

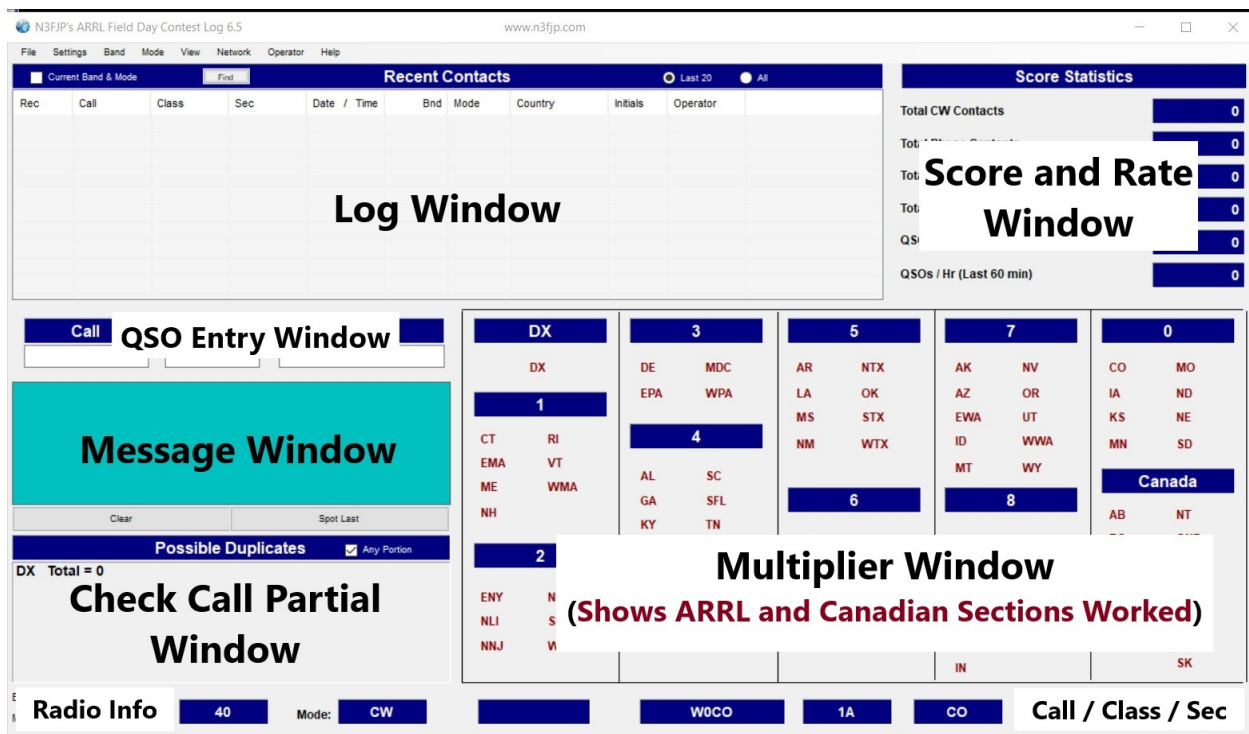
- Now create your Field Day Database file. Go to **File >> New >> Start New Contest with a New Database File Tab**. This is where the log QSO entry data will be stored. LogData.mdb is a default database that was made when the program was installed. The following shows where these files are stored and how you are free to make more specific names.



The Main Screen Windows.

There are eight windows in the Main Screen of the N3FJP Field Day Logging Program. They are:

1. **QSO Entry Window** – Where the station's call and the Field Day exchange information are entered.
2. **Log Window** – Shows the log entries with the station's call and the information entered. Such as QSO #, Call, Class, Section, Date/Time, Band, Mode, Country, Operator Initials and Operator call.
3. **Message Window** – Information messages from the software usually regarding the QSO Entry information.
4. **Score and Rate Window** – Information showing the QSO totals, current score and QSO rates.
5. **Multiplier Window** – This window shows the ARRL and Canadian Sections which have been worked. For Field Day there is only one multiplier in calculating the score and that is transmit power. In Field Day this is just showing the Sections you have worked.
6. **Check Call Partial Window** – Window that displays possible calls for a partial call entered in the Call window. ([More information on this later.](#))
7. **Radio Information Window** – Shows the current band, mode and frequency of the radio interfaced to the Logging Software.
8. **Station Call / Class / Section** – Shows the Call of the station for which the logging is preformed, Field Day Class and ARRL Section entered in the [Setup Tab](#).



Now for QSO Logging.

- From the **Band and Mode Tabs** enter the frequency band and operating mode of the radio where the QSOs will be done.
- QSOs are then logged by filling in the QSO Entry Window, using the space key or tab key to move between Call / Class / Section windows. When all the windows are correctly filled, press the Enter key on the computer keyboard.
- When a QSO is entered, it will appear in the Log Window. The Score and Rate Window will be updated and the Multiplier Window will indicate of a new Section was logged by a change of color.
- When you change frequency band or mode on the radio, you must change the band and mode in the Logging Software. If you don't use the radio interface into the Logging Software, this is where a major problem can occur. You change bands or modes and don't tell the Logging Software, then QSO entries with wrong band and mode information will be entered into the log. (**More information in Radio Interface section.**)
- If there is an error in the logging, the QSO can be highlighted in the Log Window and an **"Edit"** and **"Delete"** button with open. Select the **"Edit"** button, make your corrections and select the **"Done"** button. If you make a band change within an Edit, then you need to select the **"More"** button and edit the frequency recorded within the log entry.

- Other Windows on the Main Screen will reflect other information the Logging Software knows about the station entered. More information is recorded with each QSO entry than shown on the Main Screen. Editing a QSO and then selecting the “**More**” button will reveal this additional information.

Edit Contact

Call	Class	Section	Date	Time On	Band	Mode (tst)	Initials
AI6V	1A	LAX	2021/04/06	04:54:55	40	CW	RKM

Less Cancel Done

Age	ARCI	Contest ID	Country	County Rec	County Sent	CQ Zone	Category	Check
		ARRL-FIELD-DA	USA			03		

Continent	DXCC ADIF #	Fists	Frequency	Grid Rec	Grid Sent	IARU Zone	IOTA	ITU Zone
NA	291		7.02833					06

Lighthouse	Mode	Name Rec	Name Sent	Operator	Other 1	Other 2	Other 3	Other 4
	CW			K0EU				

Other 5	Other 6	Other 7	Other 8	PC Name	Precedence	Prefix	Points	Prop Mode
				QCC_Laptop		AI6	0	

Power	Rec Conf By	Sent Conf By	QTH Group	RST Rec	RST Sent	Sat Name	Serial Rec	Serial Sent

State	State Pr Cont	State Pr Cnt #	Station	10 - 10	Time Off	Trans ID #
CA		LAX	W0CO			0

QSL Rec

QSL Sent

Comments

Less Cancel Done

Information Recorded (Logged) with Each QSO Entry

Calculating the Score.

I personally log duplicated QSOs and don't score them or have them removed after the contest is completed. For the N3FJP Field Day Logging Software, the duplicate QSOs must be removed for the software to calculate the correct score and QSO count. Duped QSOs are removed by accessing the [File >> Remove Duplicates Tab..](#) **Before you submit the Field Day Entry, be sure to remove the duplicate QSO entries from the log.**

Bonus Points are an important part of Field Day. They can be a significant portion of the final score. You need to look at how many QSOs does it take to offset the Bonus Points that are not claimed. For a Low Power Entry (Multiplier = 2), 1050 bonus points is like 525 phone QSOs in value.

Interfacing the Radio Control into the Logging Software.

A major advantage of Logging Software is the ability to integrate the radio control and other information into the log seamlessly. These are the two information items the Logging Software reads from the radio.

- VFO Frequency
- Operating Mode

This information is recorded into the log entry with every QSO entered. The problem of not changing bands or modes in the Logging Software is now solved.

The [Settings >> Rig Interface Tab](#) is used to setup the radio interface. Most radio control (CAT for Yaesu and C-IV for Icom) is preformed using RS-232 serial interfaces. These can be true physical RS-232 connections or by virtual USB RS-232 emulations.

The [Rig Interface Setup Window](#) is where parameters are set to achieve this communication. Select the **View the Rig Interface Help** button and an Internet Browser will open leading you to a site to help configure the Logging Software to your radio.

Review the information and then scroll down and find your rig in the "Successful Rig Settings" area. Here is an example of configuration data that you will find there.

Yaesu 991

Rig Name = Yaesu Newer 2
Read Frequency Command = FA;
Read Mode Command = MD0;
Convert To Hex = False
Baud Rate = 9600
Parity = None
Stop Bits = 2
Data Bits = 8
Power Option = RTS



Aspects like Baud Rate and Parity must be provisioned the same between the Logging Software and the Radio setup. Enter the information for your radio into the screen.

Pressing the “**Test**” button will have the Logging Software poll the radio and retrieve frequency and mode information. In the lower right hand side of the screen a frequency and or mode change can be sent to the radio. Leave the software polling and press the “**Done**” button.

Logging Software Short-Cut Keys

From the Main Screen, the use of the following keyboard key combinations will change Logging Software options or open setup windows.

ESC Clear entry fields or stop CW transmission

Up and Down Arrow keys change CW speed

Alt + C Clear entry fields

Alt + N Net Manager Form (AC Log Only)

Alt + O LoTW Form (AC Log Only)

Alt + P Spot Last

Alt + Q eQSL Form (AC Log Only)

Alt + R Reloads all fields from last entry

Alt + S Search (AC Log Only)

Ctrl + B Backup Options

Ctrl + D DX Spotting Setup

Ctrl + E Band Map

Ctrl + F Frequency Change

Ctrl + H Notes List (with a call in the Call field)

Ctrl + I Frequency Privileges

Ctrl + K CW Keyboard Buffer

Ctrl + L Country List

Ctrl + M Net Manager (AC Log Only)

Ctrl + N Network Status Display

Ctrl + O Shortcut List

Ctrl + P Phone Setup

Ctrl + Q Edit Contact

Ctrl + R Rig Interface Setup

Ctrl + S Setup

Ctrl + T Statistics

Ctrl + W CW Setup Form

Ctrl + X Quickly toggle between three rigs (configured on rig, CW & phone forms)

Ctrl + Z Set Focus to DX Spots List

Ctrl + Shift + A Toggles rig from transmit to receive

Ctrl + Shift + C Display Bearing as compass heading

Ctrl + Shift + D Display large, floating DX Spots list form

Ctrl + Shift + E Auto advance to the next DX spot on enter

Ctrl + Shift + F Displays frequency column in QSO list(contesting programs only)

Ctrl + Shift + G CW Tab Sends Message(TSM)

Ctrl + Shift + L Audio Alert of unconfirmed DX Spots, who are LoTW users(AC Log Only)

Ctrl + Shift + M Mode Override (contest software only)

Ctrl + Shift + P Hides passwords for LoTW, Club Log and eQSL(AC Log only)

Ctrl + Shift + R Disable rig interface band and mode updates

Ctrl + Shift + S Read next serial number(for blind hams)

Ctrl + Shift + T Spot DX on entry(contest software only).

Ctrl + Shift + W CW Strings mini form.

Ctrl + Shift + X Clear a DX Spot (the call you want to clear in the call field).

Ctrl + Shift + Z Advance to the next DX Spot(rig interface must be enabled).

Band Map - Click on a blue area or title bar of the band map to use these:

Ctrl + Shift + H Hide the Horizontal / Vertical button

Ctrl + Shift + L Disables display of LoTW users as Red spots(AC Log only)

Ctrl + Shift + N Disables display new multipliers as italic

F Band map will follow rig's frequency.

Shift + C Clears band map

Rig Keyboard Fine Tuning(with rig interface enabled):

SSB:

Ctrl + Left / Right(large jump) : +-500 Hz

Ctrl + Shift + Left / Right(medium jump) : +-150 Hz

Ctrl + Up / Down(small jump) : +-50 Hz

Ctrl + Shift + Up / Down(tiny jump) : +-10 Hz

CW / DIG:

Ctrl + Left / Right(large jump) : +-250 Hz

Ctrl + Shift + Left / Right(medium jump) : +-80 Hz

Ctrl + Up / Down(small jump) : +-20 Hz

Ctrl + Shift + Up / Down(tiny jump) : +-5 Hz

Using Contest History Files.

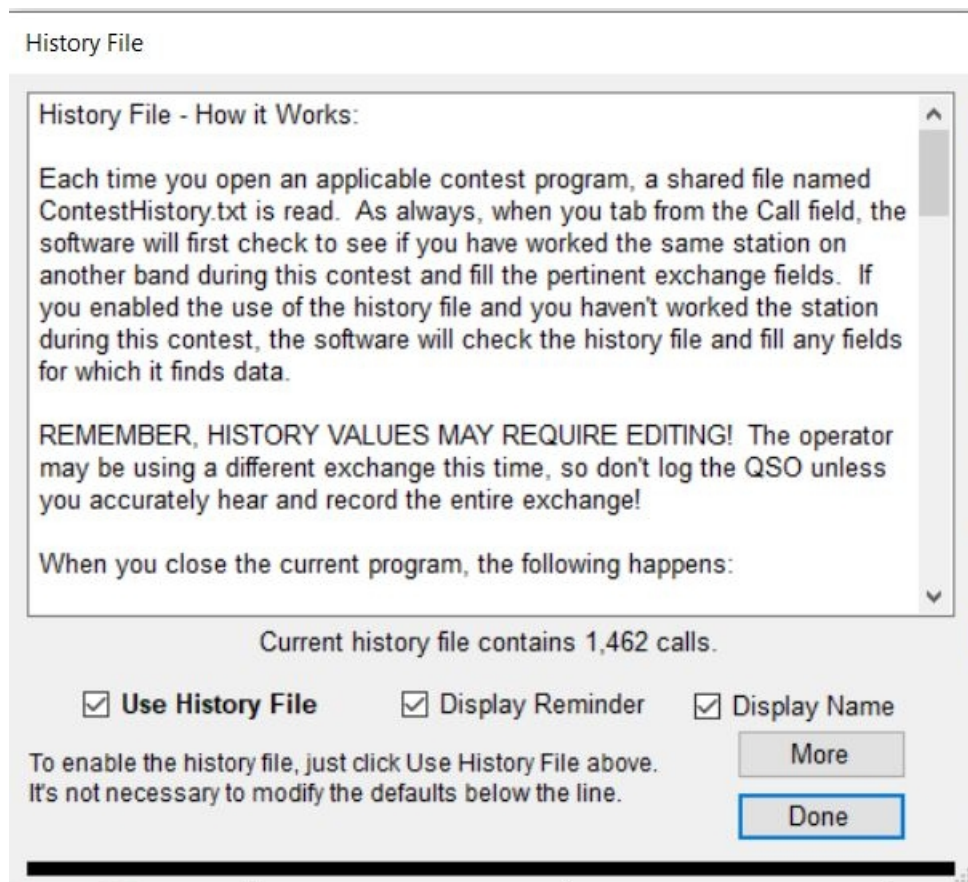
Contest History Files are used to pre-fill Class and Section information in the [QSO Window](#). This saves typing of that information and provides a point of reference when copying the QSO information.

Always verify the Class and Section for the History File can be WRONG!

Here are some rules about using Contest History Files that I have found to be helpful.

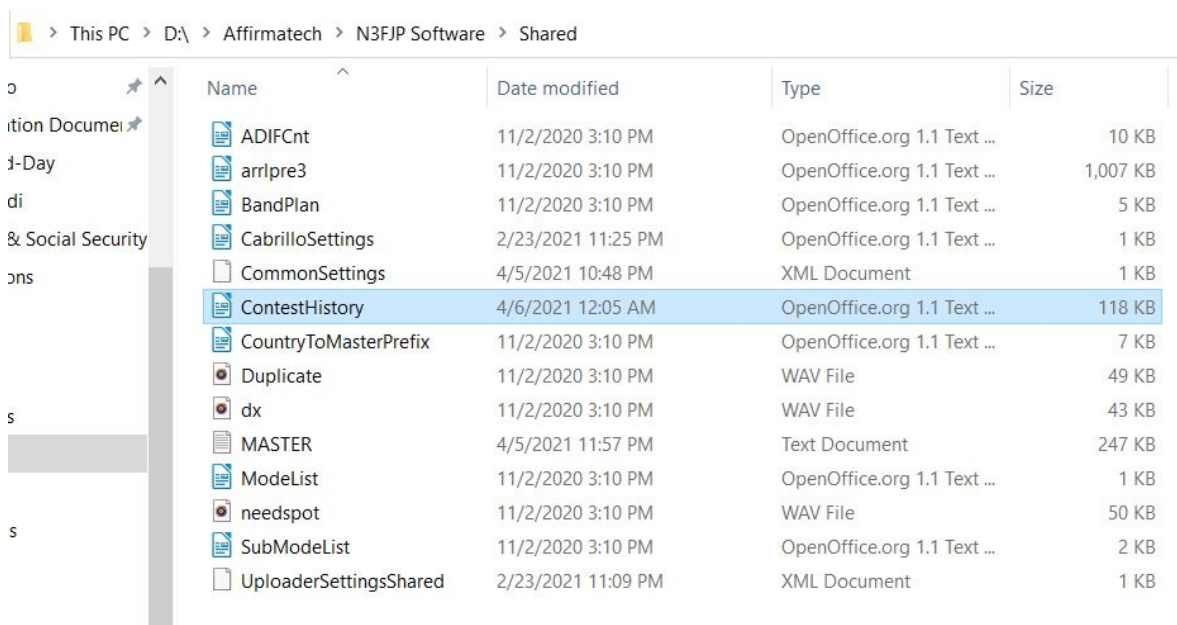
- Make contest specific History Files and don't combine a complete year of all contests into one file. Some stations, particularly for Field Day, will operate from a different location than their normal station. (N3FJP makes one big Contest History File of all contests.)
- Do not use contest history that is more than one year old. History Information that is more than one year old will likely have information that is not currently correct.

Go to the [Settings >> History File Tab](#) and the following window will open.



The Contest History File is stored in a directory which is created when you install N3FJP software. It is located in your Documents directory on your computer ([D:\](#) is my Documents Directory) and here is a listing of that directory on my computer.

[D:\Affirmatech\N3FJP Software\Shared](#)



Name	Date modified	Type	Size
ADIFCnt	11/2/2020 3:10 PM	OpenOffice.org 1.1 Text ...	10 KB
arrlpre3	11/2/2020 3:10 PM	OpenOffice.org 1.1 Text ...	1,007 KB
BandPlan	11/2/2020 3:10 PM	OpenOffice.org 1.1 Text ...	5 KB
CabrilloSettings	2/23/2021 11:25 PM	OpenOffice.org 1.1 Text ...	1 KB
CommonSettings	4/5/2021 10:48 PM	XML Document	1 KB
ContestHistory	4/6/2021 12:05 AM	OpenOffice.org 1.1 Text ...	118 KB
CountryToMasterPrefix	11/2/2020 3:10 PM	OpenOffice.org 1.1 Text ...	7 KB
Duplicate	11/2/2020 3:10 PM	WAV File	49 KB
dx	11/2/2020 3:10 PM	WAV File	43 KB
MASTER	4/5/2021 11:57 PM	Text Document	247 KB
ModeList	11/2/2020 3:10 PM	OpenOffice.org 1.1 Text ...	1 KB
needsport	11/2/2020 3:10 PM	WAV File	50 KB
SubModeList	11/2/2020 3:10 PM	OpenOffice.org 1.1 Text ...	2 KB
UploaderSettingsShared	2/23/2021 11:09 PM	XML Document	1 KB

I have prepared a Contest History file for you to use from the WØCO Field Day log in 2020. It contains more than 1400 Call signs and the Class and Section information each station used last year. Here is the procedure to update your Contest History file with this information:

1. Copy the [ContestHistory - WØCO 2020 Field Day](#) file from the email you received to your computer's [Desktop](#).
2. In the Logging Software open the [Settings >> History File Tab](#) and select the **“More”** button. The resulting window is shown below.
3. Click on the **“Delete and Clear”** button. The current history file should show 0 calls.
4. Click on the **“Merge History Files”** button and then select the [ContestHistory - WØCO 2020 Field Day](#), file previously placed on your computer's [Desktop](#).
5. The window should show The Current history files contains 1,464 calls.

History File

History File - How it Works:

Each time you open an applicable contest program, a shared file named ContestHistory.txt is read. As always, when you tab from the Call field, the software will first check to see if you have worked the same station on another band during this contest and fill the pertinent exchange fields. If you enabled the use of the history file and you haven't worked the station during this contest, the software will check the history file and fill any fields for which it finds data.

REMEMBER, HISTORY VALUES MAY REQUIRE EDITING! The operator may be using a different exchange this time, so don't log the QSO unless you accurately hear and record the entire exchange!

When you close the current program, the following happens:

Current history file contains 0 calls.

Use History File Display Reminder Display Name

To enable the history file, just click Use History File above. It's not necessary to modify the defaults below the line.

Enable History File Processing (runs automatically when program is opened and closed so that your history file is always kept up to date).

<input type="button" value="View Raw Data"/>	Displays contents of history file.
<input type="button" value="Update File Now"/>	Update File Now duplicates the action that occurs when you close the program. Quicker for building
<input type="button" value="Delete & Clear"/>	Deletes the history file and clears history data from RAM.
<input type="button" value="Merge History Files"/>	Click to select another ContestHistory.txt file to merge into this file.

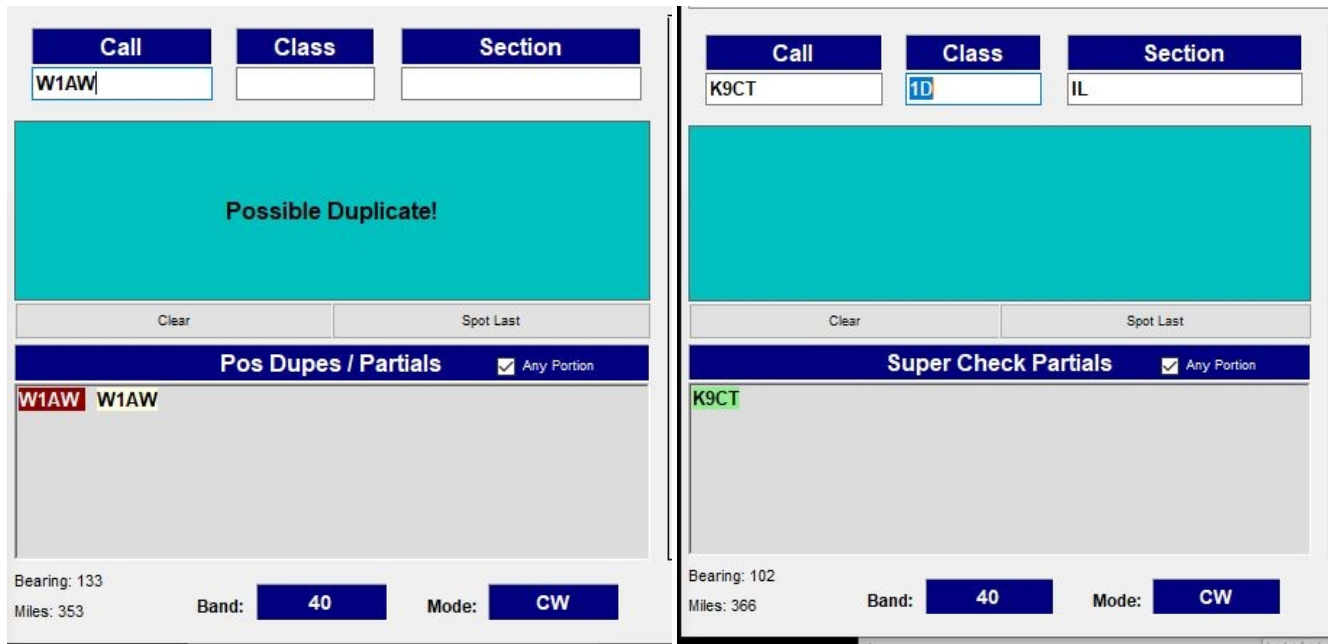
File Path:

Check Call Partial Window.

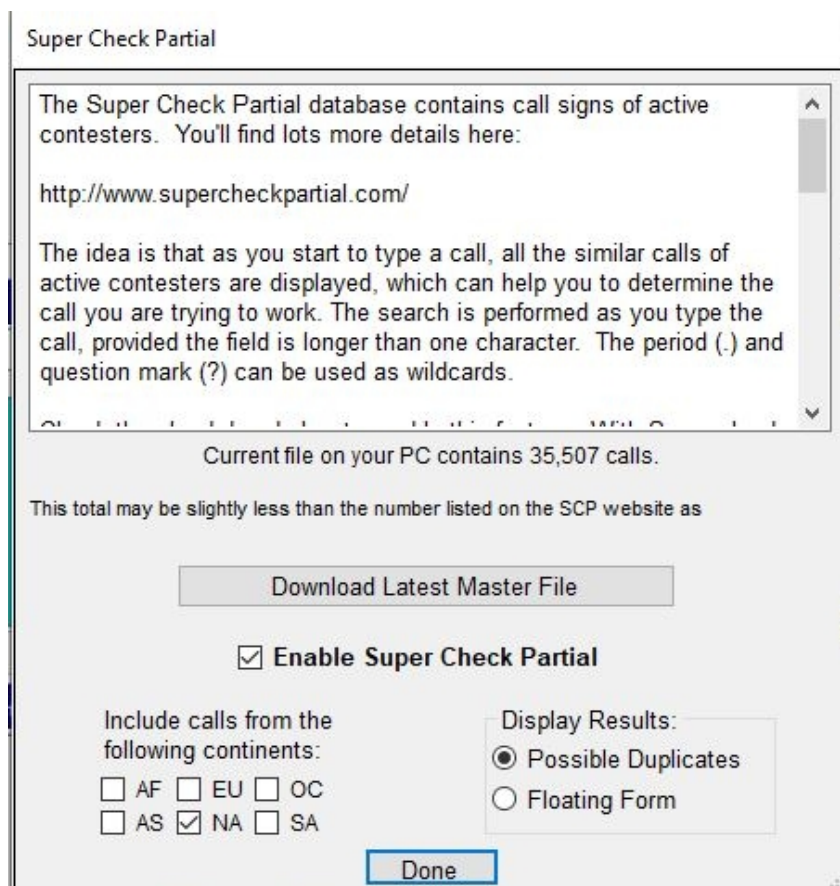
To assist in entering Call information, there has been developed a master list of Call Signs that represent stations that regularly participate and operate in contests. This list is accessed by various Logging Software, including N3FJP, to complete possible partial call signs.

As the Call is entered in the [QSO Window](#), possible calls are suggested from this master list and displayed in the [Check Call Partial Window](#).

- A Call shown in **RED** would be a duplicate QSO if logged.
- A Call shown in **GREEN** is a new QSO for the current Band and Mode.



To start this logging feature, open [Settings >> Super Check Partial Tab](#). Download the Latest Master File; this requires Internet Access and will take a few seconds, maybe a minute. Now select the continental area (North America NA for Field Day), select "Possible Duplicates" and then click on "**Done**" button.



Merging Logs Together.

The Logging Software can exchange logs using Amateur Data Interchange Format (ADIF) file. Logs can be added to each other creating a common log. This is done by accessing the [Files >> Import Tab](#) in the software.

I have provided two logs in ADIF for you to merge together as a test. They are:

- [W0CO = 2020 Field Day Log](#)
- [W0CO = 2021 Field Day Test Log](#)
- First create a new Log by selecting [Files >> New >> Start a New Contest..... Tab](#) in the software.
- Select [Files >> Import ADIF Tab](#). Then select the `W0CO = 2020 Field Day Log` ADIF file. It will populate the new Logging Software with 1786 QSO records. Examine the Log entries.
- Now add a second log by selection the [Files >> Import ADIF Tab](#) and importing the [W0CO = 2021 Field Day Test Log](#) ADIF file. Now there are 1797 QSO records.

There is now a combined log of both ADIF files.

Exporting logs is done simply by accessing the [Files >> Export ADIF Tab](#) and entering a file name for the new ADIF file.

With this combined log of almost 1800 QSO entries, examine individual Sections in the Multiplier Window. This will display the total number of QSOs to that specific Section, number per Band and Mode.

Networking Multiple Sets of the Logging Software.

Multiple stations, all using the Logging Software, may be networked together. Each station making QSO contributions to a combined log file. There are some network requirements that need to be known and established to implement use this feature.

1. All stations must be using the same Logging Software and the same version number.
2. One station, or a network server, must maintain the Logging Software database file where the QSO entry information is stored.
3. All stations then run the Logging Software and send their QSO entries via the network to the Logging Software database file.
4. All stations must be in a common Local Area Network (LAN) or a Virtual Local Area Network (VLAN) sometimes referred to as Virtual Private Network (VPN).
5. Editing of logging errors is done "Post Contest or Post Event" and not during the contest or event.

The virtual local area network can be implemented in a couple of ways. Each has their strengths and weaknesses.

1. Hardware VPN = A router or other stand alone device performs the VPN function. Remote computers run a piece of client software that then accesses the VPN hardware remotely from the Internet (Wide Area Network side) of the router and "tunnels" to the LAN side of the router.

This approach is more expensive up front, takes some setting up, encryption is optional but information or data transport is very fast with lower latency.

2. Software VPN = Service is purchased from a company that provides VPN services. The computer still runs a piece of client software and a group of computers are formed into a LAN at the VPN server.

This approach is less expensive up front, but fees go on forever. There is more delay because additional routers are involved at the VPN server and all clients are two internet routes from each other.

The VPN is the key to networking the Logging Software and achieving multiple station logging of an Event Station. Whether Microsoft Windows OS File Sharing is used or TCP/IP communications protocol is used is just a matter of choice and how reliable the VPN server processes information.