Using CQ/X in the ARRL International Grid Chase

Introduction: The ARRL International Grid Chase is a year-long event that begins January 1, 2018. The objective is to work stations on *any* band (*except* 60 meters) in as many different Maidenhead grid squares as possible, and then upload log data to ARRL's Logbook of The World (LoTW). To some extent the Grid Chase is like the National Parks on the Air event using grid squares instead of national parks. According to the information available in the Grid Chase announcement, credit for grid contact can be obtained without exchange of grid information as long as the stations include grid information in their LoTW upload of the QSO. So contest operation can contribute to a participant's grid chase score even if the contest does not require exchange of grid squares.

The purpose of this note is to provide an overview of how CQ/X, which was developed for mobile operator use in state QSO parties, can be used as a GPS-enabled logging program for the Grid Chase. The main requirement is that the operator use a GPS receiver with a serial (USB or RS-232) interface to CQ/X and that logging is performed using CQ/X. Functionality has been modified and/or added to CQ/X to support the following two types of Grid Chase operations:

- **Use Case 1:** The mobile operation is the result of participation in a state QSO party in which the exchange does not involve grid squares but for which the operator wishes to include grid square information as part of the log to be uploaded to LoTW in support of the Grid Chase.
- **Use Case 2:** The mobile operation is planned and executed for the sole purpose of handing out grid squares for the Grid Chase and may cover several states. The mobile operator wishes to send a signal report and grid square information as part of the exchange sent to the other station and would like to accept any of the following QTH information from the other station: four character grid square, state postal code, province postal code, or DX.

In each case it is necessary to keep a log showing the grid square and county from which each contact was made and to have an efficient means of preparing the necessary adif files for uploading to LoTW for each county-grid pair location. Since it is assumed that the operator wishes to upload information about the counties worked during the operation it will be necessary to create locations for each county-grid pair included in the logs. Details of how to use CQ/X in support of each of these scenarios is given below.

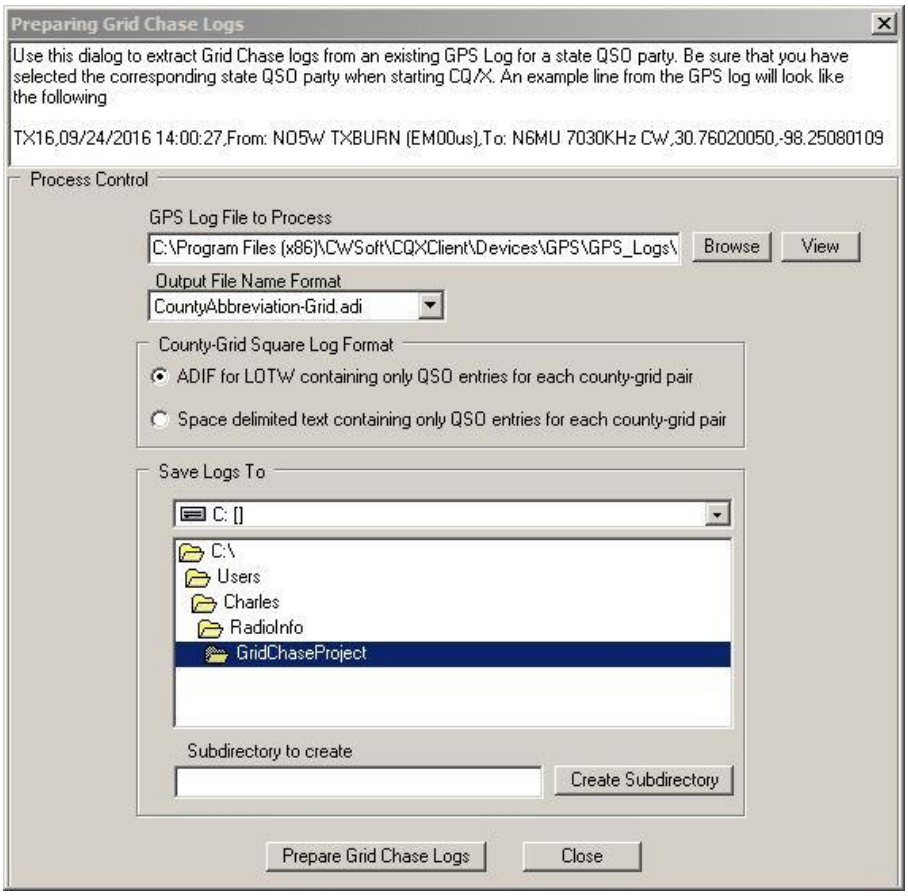
Use Case 1 Overview: As part of its support for state QSO party mobile operation CQ/X keeps, by default, a GPS log in addition to the normal log required by the party. These GPS logs are stored in their own sub-directory with each QSO being recorded as follows:

LA17,11/23/2017 06:03:10,From: NO5W LASLAN (EM30),To: N5HZ 14011KHz CW,30.69039917,-92.08020020

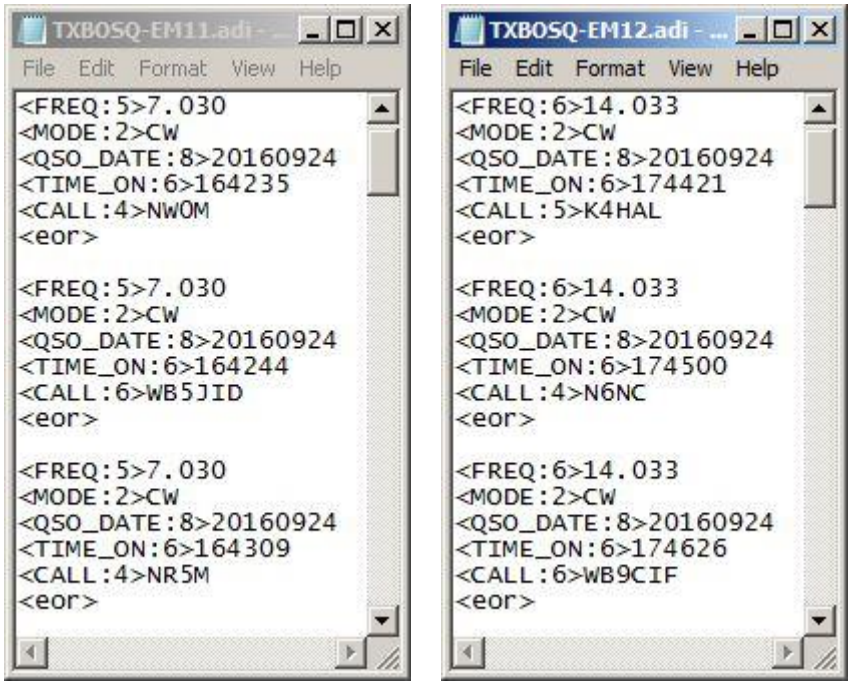
There are entries for the date and time of the QSO, the county abbreviation for the county from which the QSO took place, the four-character grid square from which the QSO took place, the station worked, frequency of the QSO and latitude-longitude coordinates where the QSO took place. The original use of this information was to support the Logs on a Map feature of CQ/X.

So, for Use Case 1 it can be assumed that a GPS log exists having the above format and the main work to be done for developing data for the Grid Chase is to extract the necessary data from the GPS log. Here are the steps involved in this case from start to finish:

- Step 1: Start CQ/X and set it up to work the State QSO Party
- Step 2: Connect a GPS to CQ/X and drive around working the QSO Party and logging with CQ/X
- Step 3: After the party activate QP Tools | After-Party Processing | Prepare Grid Chase Logs
- Step 4: Use the resulting dialog to browse to a GPS log to process
- Step 5: If desired, view the selected GPS log
- Step 6: Select one of the four formats as your preference for the adif file names
- Step 7: If desired, define a new sub-directory where the adif files are to be stored
- Step 8: Select a sub-directory where the resulting adif files are to be stored
- Step 9: Click on the Prepare button



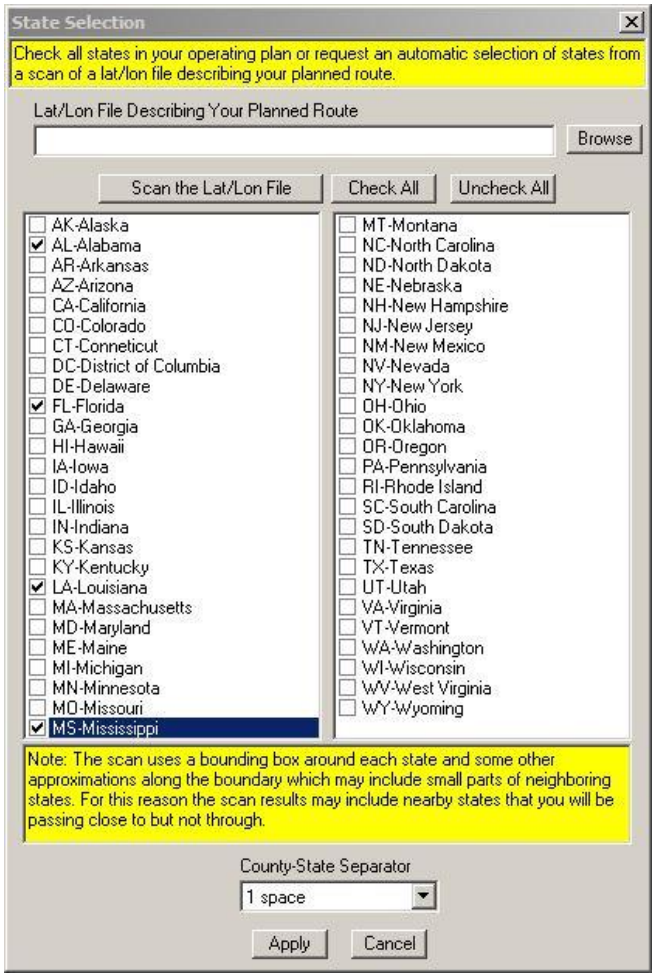
The output from this process will be a set of adif logs whose name indicates the county and grid from which the QSOs were made. As an example in the case of Bosque county in Texas the county is split by two grids (EM11 and EM12) and in the example Texas QSO Party log QSOs were made from both the EM11 and EM12 parts of Bosque. So the set of adif files created for this log will contain two adif files for QSOs made from Bosque as shown in the screen shots below.



Four options are available for naming these files depending on user choice of County-Grid or Grid-County and choice of whether the county abbreviation or full name will be used. Of course once these files are created it is up to the user to create the appropriate LoTW locations using TQSL followed by uploads to LoTW.

Use Case 2 Overview: This use case is somewhat different from the first one in that the primary focus of the operation is to activate grid squares. The trip is not part of a state QSO party and in fact may cover multiple states. However it is still desired to keep a GPS log of the operation, similar in format to the one produced for state QSO party operation. There is no specified exchange info for the Grid Chase but it is assumed here that the mobile operator desires to include a signal report and QTH information in the form of four-character grid square in his exchange message to the other station and will be able to log signal report and QTH information as either a four-character grid square, a US state postal code, a Canadian province postal code, or as DX received from the other station. In CQ/X a GRID-CHASE "contest" has been defined to enable multi-state operation. Here are the main steps involved

- Step 1: Start up CQ/X and choose GRID-CHASE as the contest
- Step 2: Specify the states that your trip will include using the following dialog. This will enable CQ/X to load the county shape files for those states for use in the county detection logic.



Selection of the States in a Multi-state Grid Chase

- Step 3: Setup CQ/X to make QSOs by defining messages, key assignments, etc.
- Step 4: Connect a GPS to CQ/X, also a WinKey if you plan to do CW
- Step 5: Take off on your trip, making QSOs and logging them using CQ/X. The program will detect the county and grid of each QSO and record it in the GPS Log as long as you stay within the states you specified in Step 2. [Note: Addition of states outside of the original set can be performed by restarting CQ/X and continuing with the existing GPS Log but the standard log will need to be saved before starting the new GRID-CHASE.]
- Step 6: Once you are ready to prepare the Grid Chase logs you follow the same process as described in the Use Case 1 Steps 3-9, using menu item **QP Tools | After-Party Processing | Prepare Grid Chase Logs**.

Minimum Requirement: It should be emphasized that the minimum requirement for both of the above use cases is to connect a GPS receiver capable of producing NMEA-0183 sentences over a serial (USB or RS-232) link to CQ/X and to log the QSOs using CQ/X. The program will detect the county and the four-character grid square and will update the GPS log on each QSO.