

Showing Sequatchie Valley “Do Not Land” Areas on Your GPS Map

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Introduction

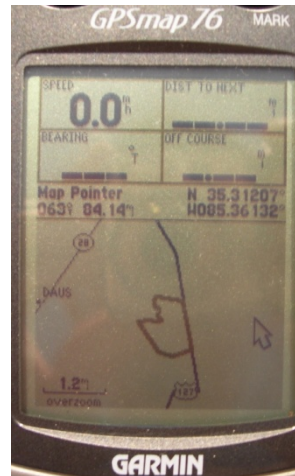
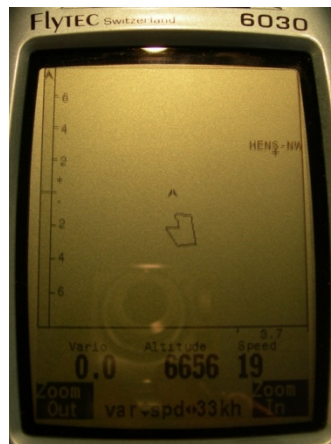
A few “Do Not Land” (DNL) areas exist in or near the Sequatchie valley. These areas are marked with waypoints (e.g., “Centerpoint DNL”) in the Tennessee Tree Toppers’ (TTT) waypoint file (available at www.tennesseetreetoppers.org) and are also drawn on the topographical map on the wall in the TTT clubhouse (at the Henson’s Gap launch). These areas can also be shown on the maps of many modern GPS devices. Follow the appropriate setup instructions below for your particular GPS device/software.

Avoiding DNL areas by simply viewing a map on the wall requires great memory (and the ability to translate a topographical map into the real view of the terrain), and relying on simple waypoints leaves you wondering how far around the point is “off limits”. Seeing the exact DNL area’s shape on the map removes all doubt.

For devices that can use OpenAir airspace files, the approach used is to define each DNL area as a zero-height “airspace” area. Many modern GPS flight devices can use such data to draw the area on the map or warn you when you’re approaching or entering the area. You may not want warnings for DNL areas, but you’d probably at least like to see the areas on the map. With these devices, the DNL area will typically be colored and filled with some sort of pattern.



For devices that can’t use OpenAir airspace files but onto which “tracks” may be loaded, the approach used is to define each DNL area as a closed track. With these devices, the DNL area will typically be a solid perimeter line with no pattern/fill (like a “loop” of road).



Compatible Devices/Software

Any device/program that can use OpenAir-format airspace files can use the OpenAir DNL data file. Here are some devices/software known or expected to support this data:

- Flytec 5030/6020/6030 (and Brauniger equivalents). Note: The 6015 (and Brauniger equivalent) has GPS capabilities but can't use this form of the DNL data (since this instrument has no airspace-related capabilities).
- All GPS-enabled Flymaster instruments (GPS, NAV, LIVE, and B1 NAV)
- LK8000 Tactical Flight Computer (software)
- XCSoar (flight computer software)

Most mapping GPS devices that don't support OpenAir-format airspace files do allow tracks to be loaded on them and thus support displaying DNL areas as tracks.

Note: The Flytec 6015 has a GPS receiver but has no mapping capabilities. Therefore, the 6015 can't display DNL area shapes.

Setup Instructions – Flytec 6020/6030 (or Brauniger equivalent)

The following procedure was written with only a 6030 available, so it's merely assumed that the instructions will also work for the 6020 (or Brauniger equivalent).

1. It is recommended that you install the latest version of FlyChart (available at www.flytec.com). If you do not do so and your instrument firmware version is more recent than your FlyChart software version, then it is possible that FlyChart will not properly read/write configuration settings recently added to the instrument firmware.
2. Download the "TTT_DNLs.fa5" file from the TTT web site.
3. Start the FlyChart program on your computer.
4. With the instrument turned on, press and hold the OK/Menu button. This will take you to the "Main Setup Menu".
5. Connect the instrument to the computer (via USB cable).
6. Click the "Setup flight instrument" button on the toolbar.

- a. If you have trouble, then use “Manage Computer” and “Device Manager” to find the COM port number for the current connection to the instrument. If you use a different USB port on the computer than you used the last time you connected to the instrument, the COM port number will be different. To change COM ports in FlyChart, click the “System Preferences” button on the toolbar. Then change the “Port” setting under “Flight instrument”.
7. In the settings tree on the left, click “Restricted areas”.
8. Click the “Download” button (to see whether there are already airspace areas on the instrument).
9. Click the “Load” button, and find and select “TTT_DNLs.fa5”.
10. Choose the appropriate option for whether to overwrite existing airspace areas on the instrument. The instrument will hold a limited number of airspace areas, so you may be forced to overwrite existing areas.
11. Click the “Upload” button.
12. After the upload finishes, disconnect the instrument from the computer.
13. To confirm that the data was successfully put on the instrument, highlight “Airspaces SUA” in the instrument’s Main Setup Menu, and press the “OK” button. You should see listed on the instrument’s screen all the DNLs listed on the TTT web site. If pressing the “OK” button does nothing, then try the below. Sometimes, for unknown reasons, the “Airspaces SUA” menu isn’t available.
 - a. Turn the instrument off and back on. If this doesn’t make the “Airspaces SUA” menu available, then...
 - b. Using FlyChart, download the airspace areas from the instrument. If the DNL areas appear in FlyChart after the download, then they are on the instrument. If the “Airspaces SUA” menu is unavailable and it isn’t convenient to use FlyChart to verify that the DNL areas are loaded on the instrument, then...
 - c. Put the instrument in simulation mode, and “fly” to one of the DNL areas. If one is there (shown on the map), it is safe to assume that all are there.
14. Verify that audio airspace warnings are on or off as you wish. The airspace upload process has been known on occasion to change this setting. If you don’t want audio warnings for DNL areas, then set this to 0 (No). This can only be done directly at the instrument (i.e., not in FlyChart).
 - a. Highlight “Settings” in the Main Setup Menu, and press the OK/Menu button.
 - b. Highlight “CTR Alarm”. Make the “Ctr acoustic alarm?” setting as you wish (“0” means no airspace alarms).

Setup Instructions – GPS-Enabled Flymaster Instrument

The following procedure was written without access to a Flymaster instrument or Flymaster’s Designer software, so it’s probably lacking detail. If you can provide more detail, please do so using the contact info at the end of this document.

1. Download the “TTT_DNLs.txt” file from the TTT web site.
2. Start the Designer program on your computer.
3. Connect the instrument to the computer.
4. Turn the instrument on.
5. Select “Airspaces” from the “Tools” menu.

6. Select the downloaded DNLs file, and upload it to the instrument.
7. Confirm that the DNL “airspace” areas were successfully put on the instrument.
8. Turn off audio airspace warnings (if you don’t want audio warnings for DNL areas).

Setup Instructions – Garmin (specifically GPSMAP 76)

The following procedure was written with only this particular model available, but it’s likely that the procedure will work with other similar devices.

1. Delete from the device existing tracks by any of the DNL track names? With EasyGPS and the GPSMAP 76, this isn’t necessary. Existing tracks by the same name are overwritten. It’s possible, though, that with other software or devices, this behavior may be different.
2. Download the file named “TTT_DNLs.gpx” from the TTT web site.
3. Open the file in EasyGPS (or another GPS device management program).
4. Upload these tracks (GPX file) to the GPS device. Here’s how with the Garmin GPSMAP 76 using EasyGPS:
 - a. Connect the GPS to the PC (via serial and USB-to-serial cables).
 - b. Turn the GPS on. To conserve power, press “MENU”, and select “Start Simulator”. This turns off the receiver.
 - c. Go to the GPS’ main menu, and select “Setup”.
 - d. On the “Interface” tab, note the current “Serial Data Format” setting, and then change it to “GARMIN”.
 - e. On the “Location” tab, make sure the datum is “WGS 84”.
 - f. Select all DNL area tracks in the lower left sub-window in EasyGPS (click the first; shift-click the last).
 - g. Click the “Send” button in EasyGPS.
 - h. Make sure the box by “Tracks” is checked, and then click “OK”.
 - i. Once complete, disconnect the GPS from the PC, and restore the GPS’ “Serial Data Format” to its earlier setting (e.g., “NMEA” for 4030 Race users).
 - j. It may be necessary to set each track (using the Main Menu) to be visible on the map. (They were automatically made visible with EasyGPS and the GPSMAP 76.)
 - k. Verify that all DNL tracks are on the device. The GPSMAP 76 will only hold 10 tracks, and no error will be given if there aren’t enough open slots available. Some tracks just won’t be added. To work around this, manually delete the unwanted tracks, and repeat the above procedure.

Setup Instructions – LK8000 Tactical Flight Computer

1. Download the “TTT_DNLs.txt” file from the TTT web site.
2. Copy (or move) “TTT_DNLs.txt” to the “_Airspaces” folder in your LK8000 program directory (e.g., “\My Flash Disk\LK8000_Airspaces”).
 - a. Note: Exactly how you do this can vary but will probably involve either connecting the device to the computer with a USB cable or removing the device’s memory card and putting it in a memory card reader attached to the

computer. If the latter, put the card back in the LK8000 device before the next step.

3. Start LK8000.
4. Go to the System Setup configuration menu 1 (“Site”).
5. Tap “Airspace 1” (or “Airspace 2”, your choice).
6. Tap “TTT_DNLs.txt”, and tap “Select”.
7. Tap “Next”.
8. Set “Airspace display” to “All on”. (Other options can work, but if they’re improperly configured, the DNL areas may be invisible at times. “All on” just makes them always visible.)
9. Set “Filling” to “Pattern”. (This is largely personal preference but makes the DNL areas more visible than the other options.)
10. Tap “Warnings”.
11. Set “Warnings” to “OFF”. (You probably don’t want to hear audible warnings while flying an approach to land in a valid field adjacent to a DNL area.)
12. Tap “Close”.

As noted above, some steps aren’t absolutely necessary but are intended to give you the best experience (DNL areas always visible, drawn in high-visibility fashion, and without annoying audio “airspace” warnings).

Document Improvements & Requesting Help

If you have a suggestion for improving this document or need help getting this to work on your device, please e-mail ericcarden72@gmail.com.