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1.6 Radar Tuning and Recording in WinHorizon
Procedure:
1. Once in WinHorizon software, click **MODE** on the right hand column under MAIN and click on **TCP Active** (Fig. 1)
    a. For a view of the entire WinHorizon operation window, see last page of **Remote Radar Set-Up and Operation Protocols**
2. Click **ON** below **MODE** to turn the radar on (Fig.1)
    a. The screen will start counting down from 120, signifying that the radar is warming up and preparing to turn on
3. Once the warm-up is complete, the screen will read **ON STANDBY**
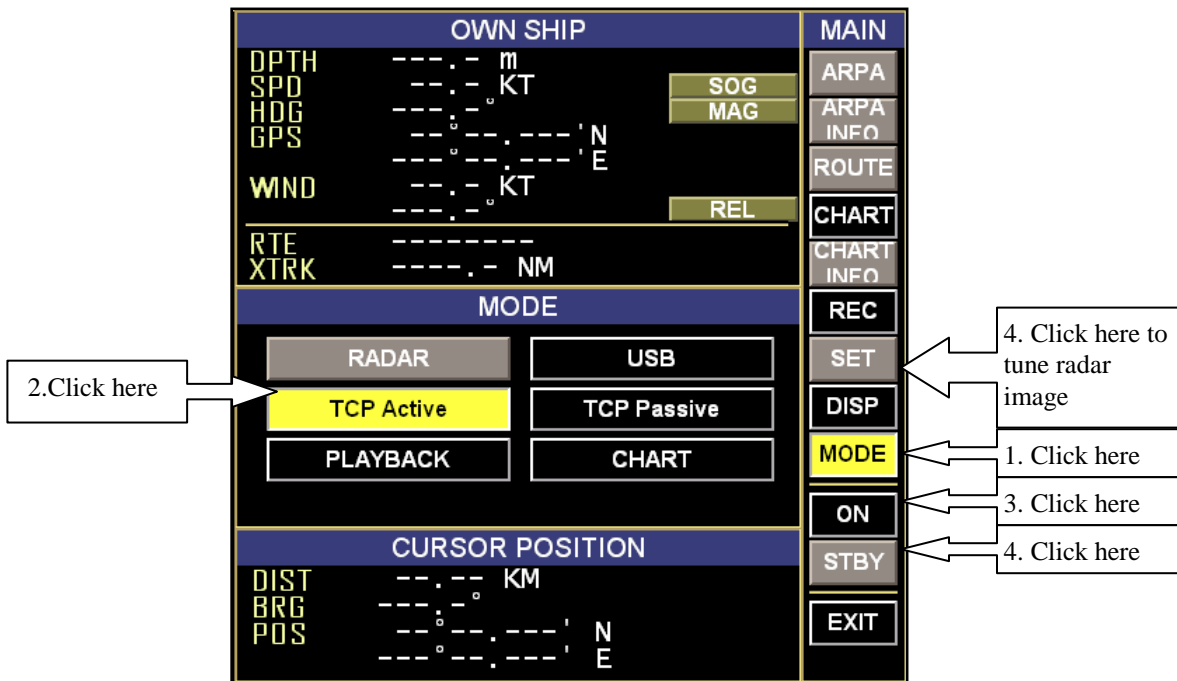   a. Click the **STBY** button below **ON** to start the rotation of the radar

Figure 1. Entering TCP/IP Active mode in WinHorizon.

4. Once the radar is rotating, an image will appear on the screen that needs to be tuned
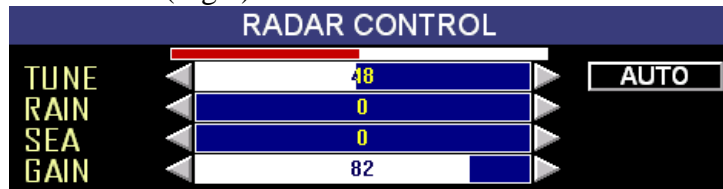   a. At the bottom right hand of the screen there is a section called RADAR CONTROL (Fig 2)

Figure 2. RADAR CONTROL window of WinHorizon Screen.
    i. Set **RAIN** and **SEA** to zero
    ii. Set **GAIN** as high as possible without excessive grain
    iii. Toggle **TUNE** up and down one click at a time like tuning a radio while monitoring red tune bar above

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5. The radar antennae may also need to be adjusted
    a. Click the **SET** tab under MAIN and a screen will show up (Fig. 3)
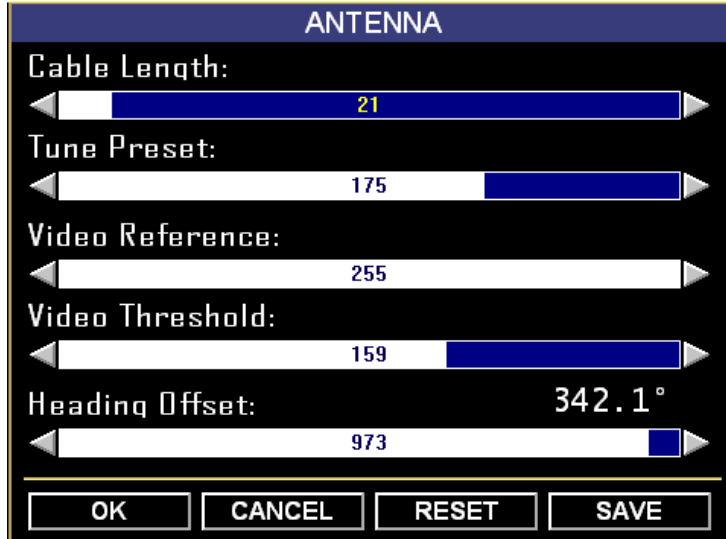
Figure 3. Antennae Settings for Radar Tuning.

a. **Video Reference** is how much each return is amplified
    o To be taken all the way to **255** (end value)
b. **Video Threshold** is the smallest level of return that is going to be picked up
    o Set as low as possible where image just stops being "grainy"
    o You may have to allow for some noise closer in to the radar or else small signals such as swallows will not be picked up
c. **Heading Offset** is the difference between True North and Relative North
    o The heading offset of the radar should have already been corrected for in the WinHorizon Set-Up procedure, but an offset can be used to rotate an image so that it matches the viewer's perspective of the land (Fig 4)
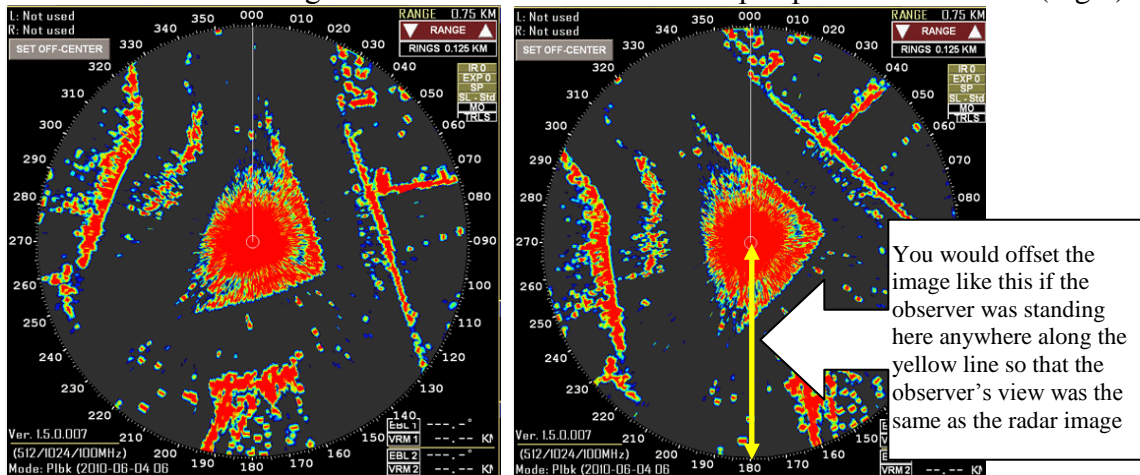

You would offset the image like this if the observer was standing here anywhere along the yellow line so that the observer's view was the same as the radar image

Figure 4. Comparison between a normal image (left) and one that is offset by 30º (right)

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- o Makes it easier to find birds when a track is seen on the radar
- o Will not affect the bearings of the targets because the files will not be recorded with the offset *if* it is set *within* the Settings and *not* the WinHorizon Set-up

d. **Cable Length** is the distance between the signal generator to the transceiver and back
- o Decrease the range to 0.375km in the top right corner of the radar screen
- o Bring cable length up until the donut hole void of colour around the radar is completely filled in with colour
- o Readjust the range to 1.5km

e. Re-Adjust **GAIN** for the best image after Video Reference and Threshold have been adjusted (Fig. 2)

f. Re-Adjust/Check **TUNE** for best deflection readings of the red bar

g. You can bring **RAIN** up to decrease a bit of clutter but proceed with caution as you may be losing real signals

2. Once satisfied with the image, locate the **REC** tab on the right hand side of the screen above **SET** and press "RECORD" (Fig.5)
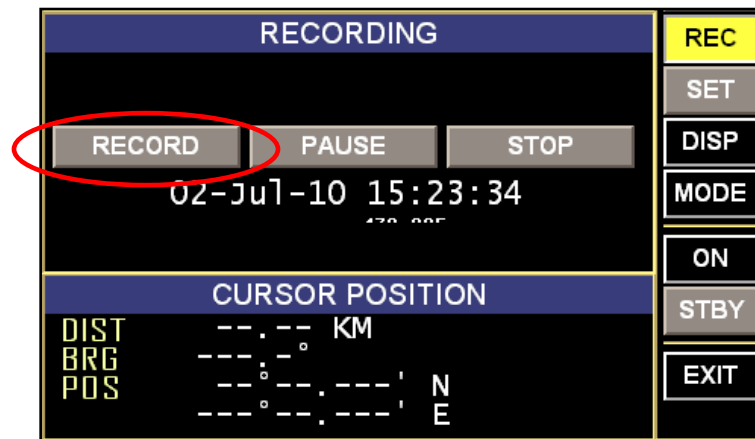
3.

Figure 5. Recording in WinHorizon.

a. See **Remote Radar Field Observation Protocols** to take observations while WinHorizon is recording

4. Once recordings are finished:
- a. Press "STOP" to stop recordings
- b. Click **STNDBY**
- c. Click **ON** and then **YES** when prompted if you want to turn the radar off
- d. Then click **EXIT** and **YES** when asked if you want to leave the WinHorizon software

5. **Make sure to record any problems with the equipment, the setup process, the radar images etc. in your field book and, if possible, take a picture with a digital camera or screen captures.**

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