



IMPORTANT RULES

FOR THE **CORRECT** USE OF THE VESPATRACKER TRACKING SOLUTION

I. IMPORTANT STEPS BEFORE STARTING

1. **Keep** all VespaTracker equipment **together** in a **dry, sheltered place, protected** from sun, rain and wind. This includes the VespaTweezers or your applicator of choice.
2. Make sure your **smartphone** is charged, Bluetooth is enabled, the **HoornaarSpotter App** is installed, and you have an **account** so you can start a hunt and register any nests you find.
3. Set up a **bait pot with a vertical wick**. A horizontal wick may cause a short circuit if a tagged Asian hornet walks across it.
4. **Capture** several hornets **and mark** them with different colours.
When they leave, observe their **flight direction** and record their **flight time**: in which direction do they fly, and how long does it take them to return to the bait pot? Estimate approximately 100 metres to the nest per minute of flight time.

II. PREPARING FOR A HUNT

5. Handle the VespaTracker equipment only with **clean, dry hands**.
6. Connect the transmitter sheet to the Nano Charger and use a **USB-C cable** to connect it to a power source, such as a laptop, power bank, car charger or wall socket.
-The **red LED** on the Nano Charger lights up when it receives power from the source.
7. Connect the Nano Charger only to the **“Charge Here”** port on the sheet.
-The contacts must be clean and dry. If in doubt, gently wipe them on a clean item of clothing.
-Insert the **“Charge Here”** port only approximately **2 mm** into the Nano Charger.
-You will hear a distinct click and the **green LED** will light up when the Nano Charger is connected correctly.
8. **Charge** the sheet containing the transmitter(s) for **at least 3 hours** before cutting out a transmitter.
The transmitter sheet cannot be overcharged.
9. The transmitter sheet has **very low power consumption**. Some **chargers and power banks** may therefore fail to detect it and switch themselves off. To prevent this, charge another device, such as your smartphone, from the same charger or power bank at the same time.
10. To stop charging, always **disconnect the Nano Charger from the sheet first**.
If you unplug the USB-C cable from the Nano Charger while it is still connected to the sheet, the transmitters will begin to discharge because the Nano Charger uses their power to keep its LEDs lit.
11. After charging for at least **3 hours**, **first capture and immobilise the hornet** before disconnecting the sheet. As soon as the sheet is no longer charging, the transmitters begin to discharge—slowly but steadily.

III. CAPTURING THE HORNET

12. **Capture a marked Asian hornet** whose flight direction and flight time are known. Knowing in which direction and within what radius to search will increase your efficiency.
13. Capture the hornet while it is feeding calmly **at the bait pot**. Approach it from behind with the catcher. Do not let it feed for more than 10 seconds before capture. A hornet that has eaten too much may have difficulty flying with the transmitter.
14. **Immobilise** the hornet in the VespaTweezers or an applicator of your choice.
 - The head and thorax should protrude just far enough from the end of the VespaTweezers for the hornet's narrow **waist** to remain visible.
 - Make sure the **wings and legs are free** before attaching the transmitter. Carefully release them using a firm blade of grass or a toothpick. If the hornet is **injured**, capture another one.
 - Proceed **carefully and safely**, but be aware that the **hornet is using considerable energy** while trying to escape. The longer immobilisation and transmitter attachment take, the more tired and stressed the hornet becomes. It may then have greater difficulty flying away with the transmitter or may first need to rest somewhere.

IV. CUTTING OUT AND ACTIVATING THE TRANSMITTER

15. Use only the provided **ceramic scissors**.
Never use metal scissors, as this will cause a short circuit.
16. You may cut a transmitter from the sheet **while** it is still charging, for example via a power bank.
17. **Two numbered scissor symbols** with dotted lines— **scissors 1 and 2**—indicate where to cut in order to activate the transmitter. Each dotted line ends at a white block.
 - Cut through the centre of the white block and approximately **1 mm beyond it**.
 - Remove as much of the white block as possible to minimise irritation to the hornet, but never cut into the circular section of the hook.
18. **Cut out the transmitter without touching the cutting points** on the circular section, as this could cause a short circuit. Hold the transmitter by the antenna or grasp the battery using the plastic tick-tweezers.
19. As soon as you cut at **scissor symbol 1**, the **transmitter battery is activated** and its **4-hour operating time** begins.
20. Open the HoornaarSpotter App and pay attention to the **Splash Screen**. This pop-up provides news, tips or warnings. Please read it carefully.
21. When using the **Range-Pro**, switch it on by gently pressing the black button for **2 to 3 seconds**.
 - A flashing **green LED** indicates that the Range-Pro is ready to connect to your smartphone via the app. A **red LED** indicates that the **two AA batteries** in the Range-Pro are depleted.
 - Select Range-Pro in the HoornaarSpotter App. It will automatically connect to your smartphone via Bluetooth. Check that Bluetooth is enabled if necessary.
22. Press **"Start Hunt"** to scan for active transmitters.
 - Only press this button after a transmitter has been cut from the sheet and activated. Starting the scan too early may cause a **scan timeout**, after which the transmitter may no longer be displayed. If this happens, briefly close the HoornaarSpotter App and restart the process.

23. The smartphone **automatically** detects the activated transmitter and displays its **unique identification code** in black letters and numbers. You will also hear the **“heartbeat.”**
24. Previously used transmitters remain visible for 6 hours and are displayed in **grey**. Select the transmitter displayed in black.

V. ATTACHING THE TRANSMITTER

25. Hold the transmitter by the short side of the battery using the **plastic tick tweezers**, then hook it around the hornet’s narrow waist. **Never use metal tweezers**, as this will cause a short circuit.
26. Allow the tagged hornet to feed on the wick of the bait pot for **approximately 10 seconds maximum**, so that it can regain some strength and calm down before being released from the VespaTweezers.
27. If the tagged hornet lands on the ground or in the grass after being released, it may have eaten too much. Help it take off again **from an elevated position**.
28. Observe and follow the **flight direction** of the tagged hornet.
29. Keep in mind that the hornet may first rest on a tree branch for several minutes to recover. Be **patient**.

VI. LOCATING THE NEST

30. First ensure that you have a **stable “heartbeat” signal**.
31. Only then use the **blue disc**, which provides an indication of the direction.
Be aware that the underlying algorithm may sometimes respond with a slight delay when adjusting the direction.
32. Always move towards the **strongest signal**, shown as a percentage in the top-right corner of the app.
33. Hold the Range-Pro as **high as possible and straight out in front of you**.
34. The signal may differ depending on whether the Range-Pro antenna is held **vertically or horizontally**.
35. Most nests are located **between 300 and 800 metres** from the bait pot or food source.
A hornet flies approximately **100 metres per minute**. If you lose the signal, move about **300 metres** in one direction. If you still receive no signal, return and try the opposite direction.
You may use a bicycle or car, but always move calmly and safely, and comply with traffic regulations.
36. If the **signal reappears behind you**, the hornet has probably returned to the bait pot to feed. Wait approximately **5 minutes**.
37. Switch the map to **Street View** to identify the most suitable route for following the hornet.
38. If you need to take a **detour**, remember the location and direction of the strongest signal indicated by the best coloured dots, and continue orientating yourself based on it.
39. When orienting or reorienting yourself by slowly sweeping your smartphone or Range-Pro from side to side, remain **calm and move slowly**, as the algorithm continuously recalculates the direction.
40. Turning only **a few degrees to the left or right** can cause a significant change in signal strength.
41. If you become confused or uncertain, press **“Reset”** to restart the measurements from a clean baseline.
42. The Range-Pro provides better results than a smartphone alone, with a range of approximately 500 metres compared with 200 metres. When using smartphones only, it is therefore best to work in a team using **Team Hunting**.
43. In **urban areas**, always orient yourself from the most open location available, for example between buildings. Keep in mind, however, that nests may also be located in gutters, wall openings or other cavities.

44. When the signal strength exceeds **70%**, you are close to the nest. Switch to **Local Scan**.
At the beginning of the season, take extra care from this signal level onwards, as **embryonic and primary nests** may be located close to the ground.
45. In **Local Scan**, the signal is recalibrated and displayed again as a lower percentage. You are then only a few metres away from the transmitter. The Range-Pro antenna can almost be used like a measuring ruler: moving it by even **one centimetre** can affect the signal. Move it very slowly and carefully.

VII. REGISTERING A NEST

46. Once you have found a nest, take a screenshot of the dots displayed in the app, take a photograph of the nest and always press the “**Register**” button.
47. Inform us about the nests you have found by sending the screenshot and photographs to info@vespatracker.com