

STRIEKAIR

Ground Control Station

USER MANUAL

Striekair engineering GmbH

For CarryAir Electro and Hybrid UAV platforms

1. Home Screen

The Home Screen is the starting point of Striekair. It is divided into three panels:

- Left — Help Center and Service Bulletin shortcuts
- Centre — UAV type selector (Electro / Hybrid)
- Right — FLY button and Pilot Login

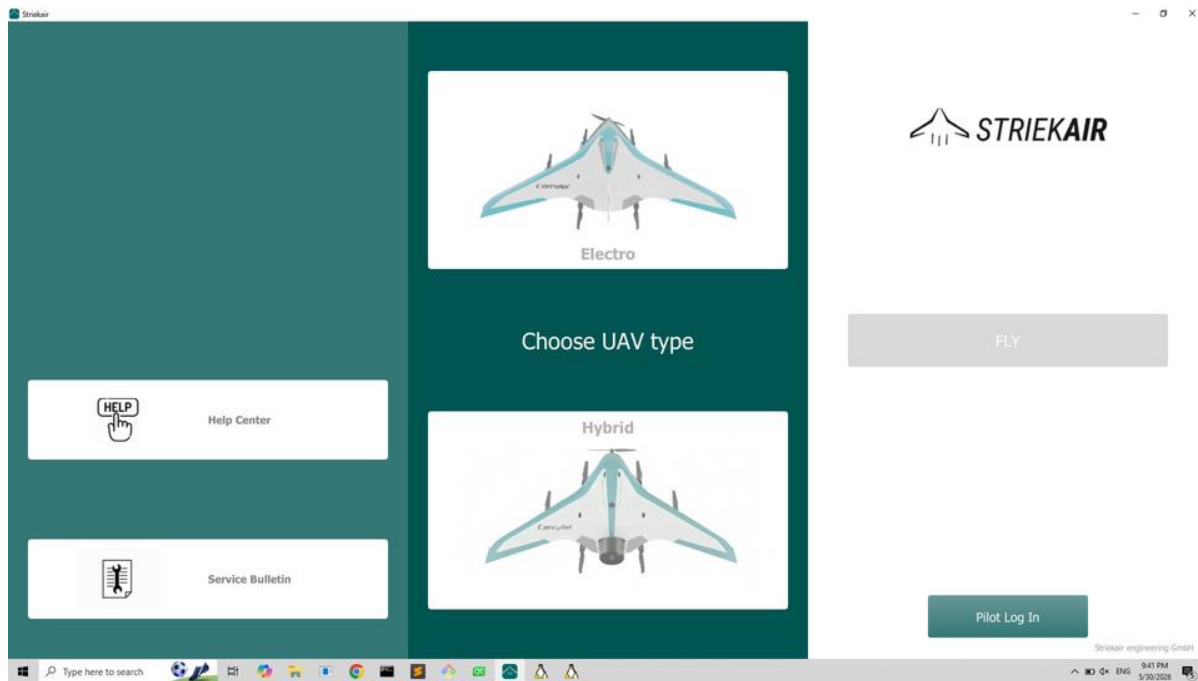


Fig. 1 — Home Screen: no UAV selected. The FLY button is greyed out until a UAV type is chosen.

1.1 Selecting a UAV Type

1. Click the Electro or Hybrid card in the center panel.
2. The selected card becomes highlighted and the FLY button activates (dark olive).

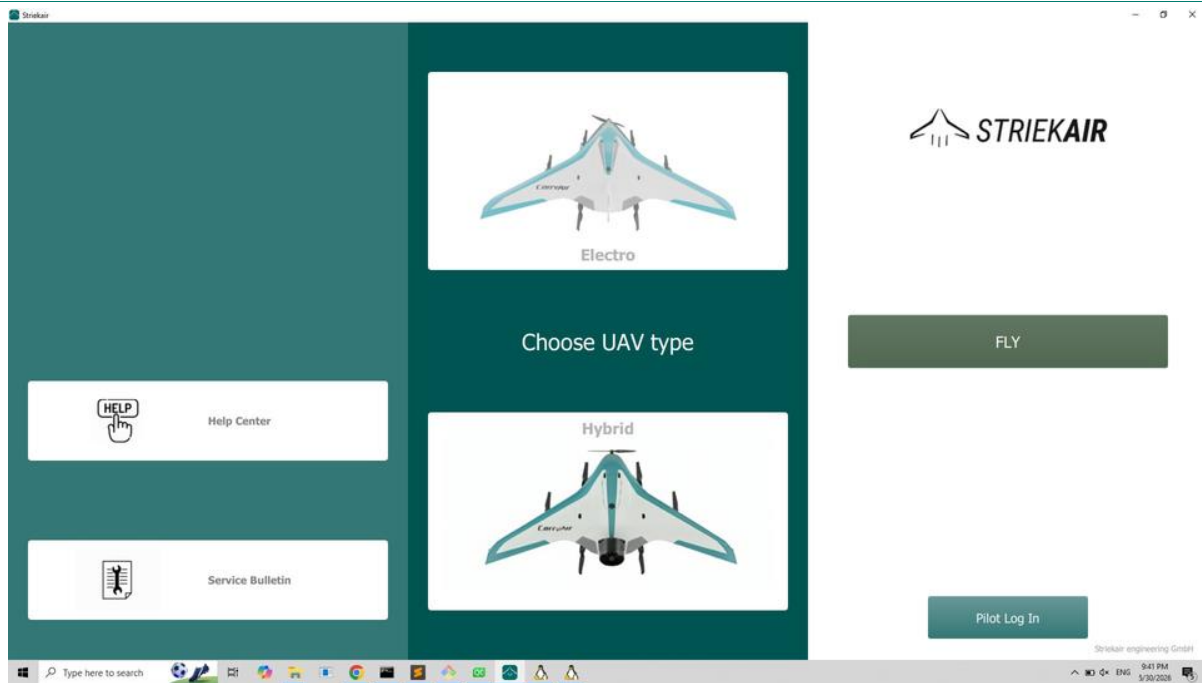


Fig. 2 — Hybrid selected: card highlighted, FLY button active, Pilot Log In button visible.

Note: Always match the UAV type to the physical aircraft before pressing FLY.

2. Pilot Login

Pilot login enables role-based access to vehicle setup. Accounts are stored locally on the ground station.

2.1 Logging In

3. Click Pilot Log In on the Home Screen.
4. Enter your Pilot name and Password.
5. Click Log In.

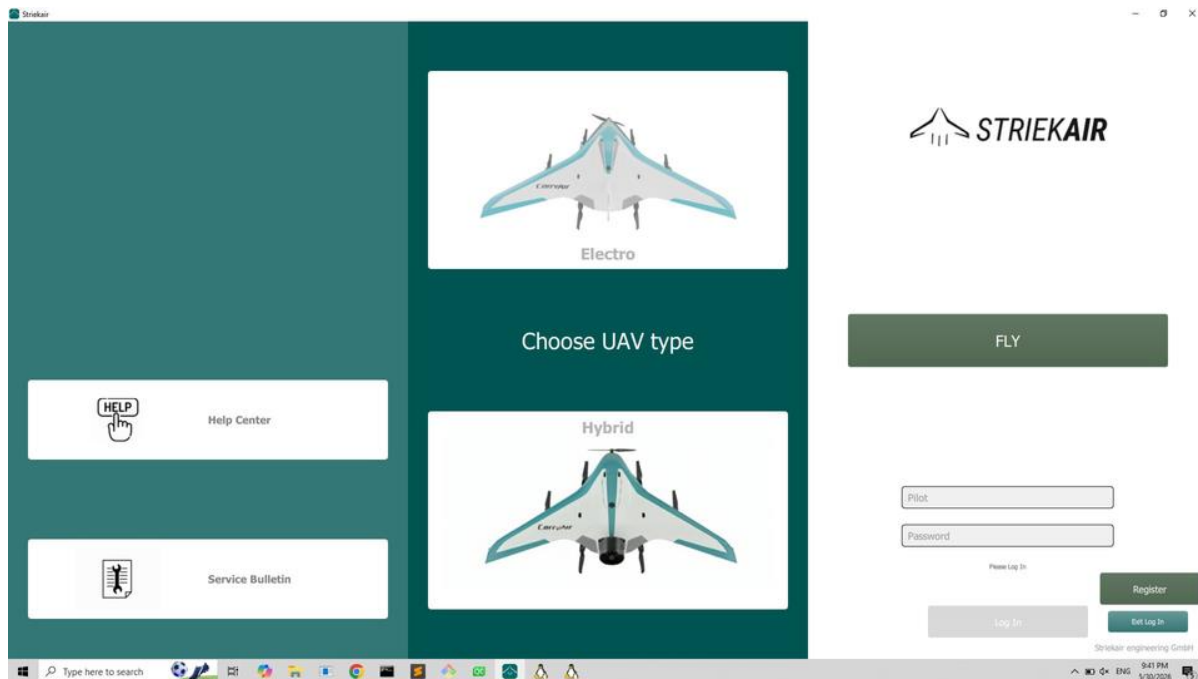


Fig. 3 — Login form expanded. Log In becomes active once credentials are entered; Exit Log In cancels.

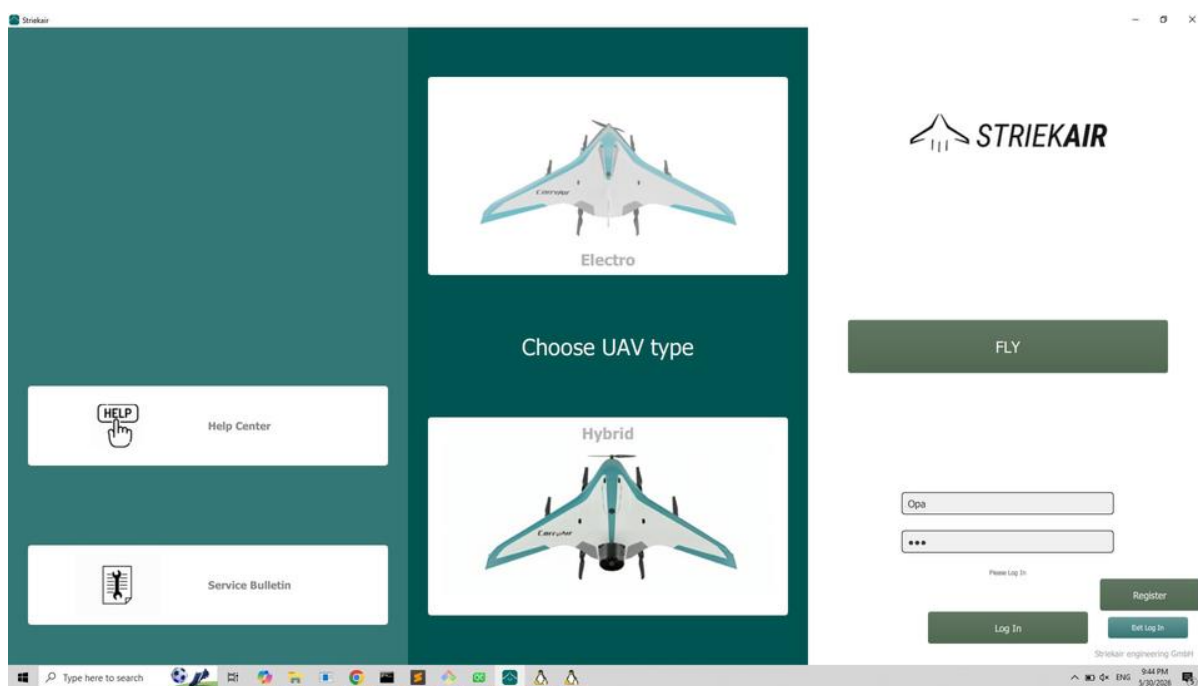


Fig. 4 — Credentials entered (username: Opa). Click Log In to authenticate.

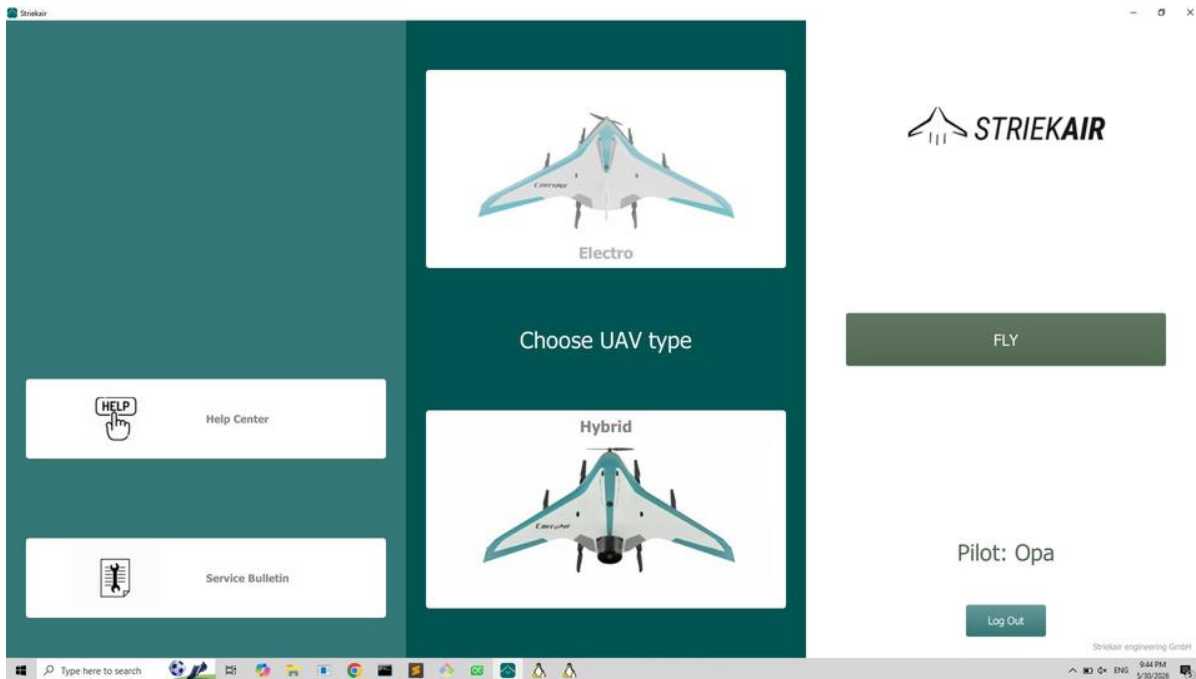


Fig. 5 — Successful login: right panel shows Pilot: Opa and a Log Out button.

2.2 Registering a New Pilot

6. Click Register on the login form.
7. Fill in the Create account dialog: username, password, and role (user or admin).
8. Click Create. A spinner confirms the request is processing.
9. Log in with the new credentials.

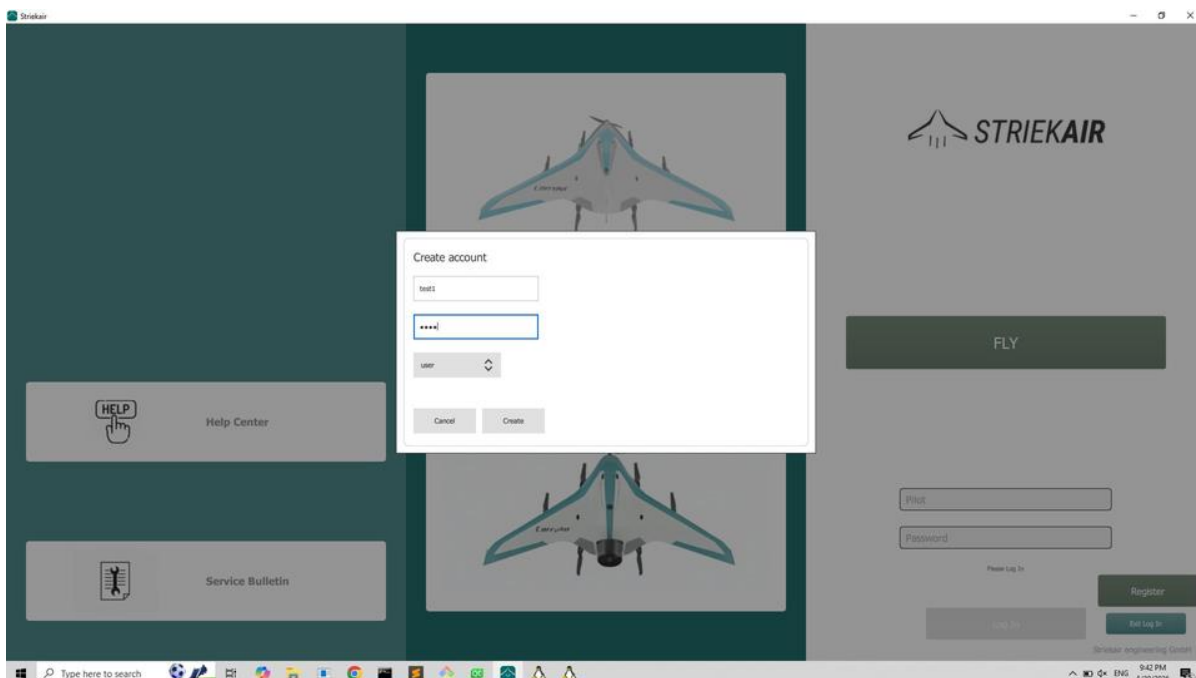


Fig. 6 — Create account dialog with example credentials (user: test1, role: user).

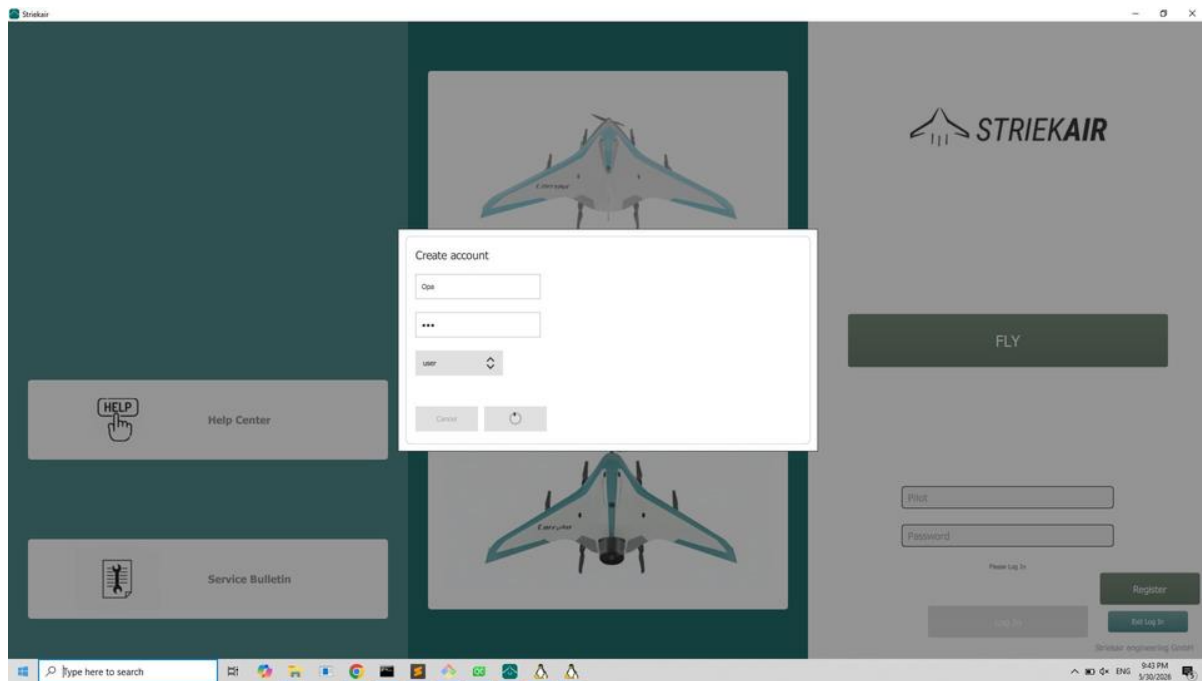


Fig. 7 — Create button shows a spinner while the account is being created.

Warning: Assign the admin role only to authorised maintenance personnel. Admin accounts can access Vehicle Setup and motor testing.

Role	Access
user	Flight operations and map settings
admin	All of the above plus Vehicle Setup (motors, flight modes, camera)

2.3 Logging Out

Click Log Out on the Home Screen. The session ends and the Pilot Log In button is restored.

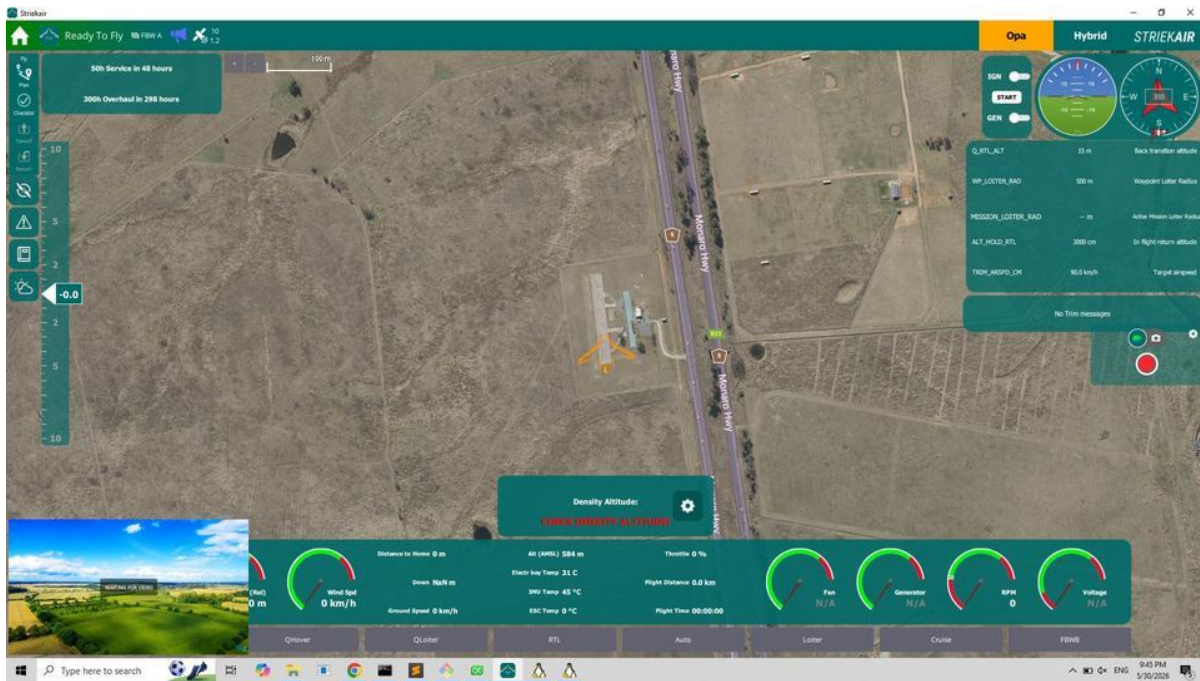


Fig. 8 — Logged-in state: pilot name displayed with Log Out button in the right panel.

3. Fly View

10. Select a UAV type on the Home Screen.
11. (Optional) Log in as a pilot.
12. Click FLY.

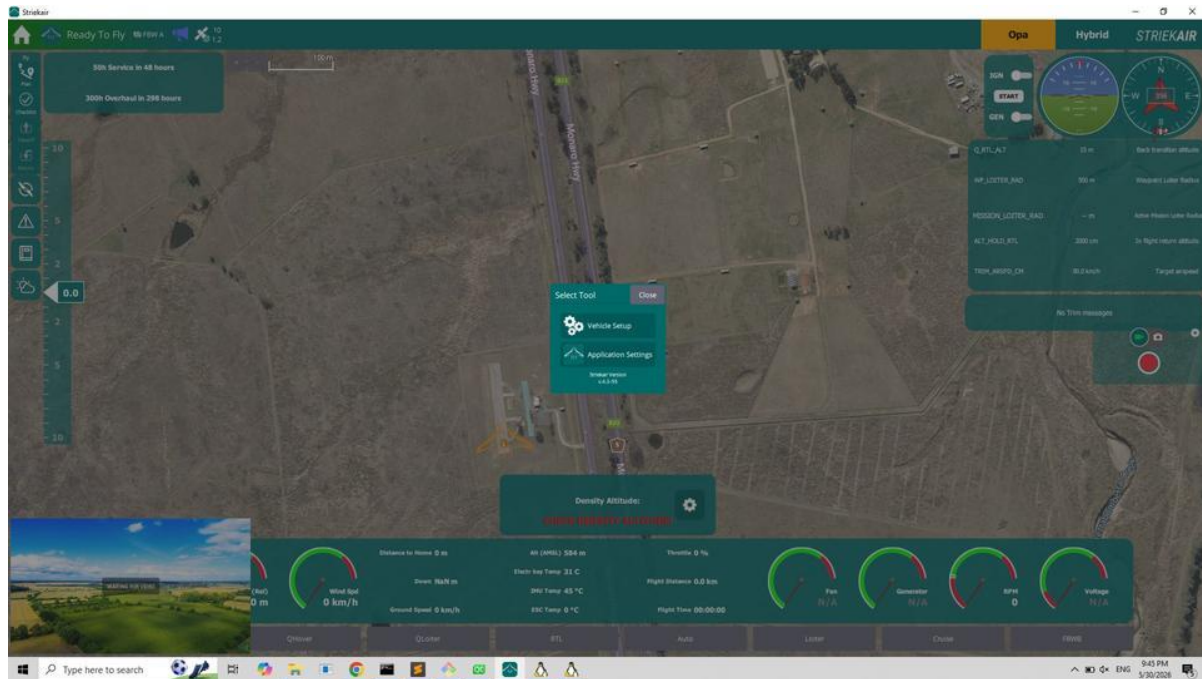


Fig. 9 — Fly View with Select Tool menu open showing Vehicle Setup, Application Settings, and app version.

3.1 Top Bar

Element	Description
Vehicle status	Current state, e.g. Ready To Fly
FBW A badge	Active autopilot flight mode
Link / tool icon	Signal strength; click to open Select Tool menu
Pilot name	Active pilot (e.g. Opa)
UAV type badge	Selected vehicle type (e.g. Hybrid)

3.2 Map & Instruments

- Satellite map shows vehicle position and heading.
- Altitude scale on left; roll indicator on far left.
- Zoom with +/- buttons above the map.
- Compass rose and IGN/GEN/START controls on the right.
- Parameter panel below compass shows Q_RTL_ALT, WP_LOITER_RAD, ALT_HOLD_RTL, TRIM_ARSPD_CM (read-only in flight).

3.3 Density Altitude Warning

A centre panel shows current density altitude. If outside limits it displays CHECK DENSITY ALTITUDE! in red. Click the gear icon to configure thresholds. Do not take off until this warning is resolved.

3.4 Bottom Telemetry Bar

Field	Meaning
Alt (AMSL)	Altitude above mean sea level
Electr Bay / IMU / ESC Temp	Component temperatures (°C)
Ground Speed	Over-ground speed (km/h)
Wind Speed	Estimated wind speed (km/h)
Throttle	Current throttle (%)
Flight Distance / Time	Session totals

3.5 Flight Mode Bar

Click any mode at the bottom of the screen to command that mode:

Mode	Behaviour
QHover	VTOL stabilised hover using lift rotors
QLoiter	VTOL GPS position hold
RTL	Autonomous return to launch and land
Auto	Execute uploaded waypoint mission
Loiter	Fixed-wing circle at current position
Cruise	Fixed-wing cruise at set airspeed/altitude
FBWB	Pilot controls airspeed and bank; autopilot holds altitude

3.6 Service Reminders

Green panels in the upper-left of the map notify you of upcoming maintenance (e.g. 50h Service in 48 hours). Schedule maintenance when these appear.

3.7 Video Feed

Live camera feed appears in the lower-left. WAITING FOR VIDEO is shown when no stream is active. Check camera power and connection if no feed appears.

3.8 Left Navigation Icons

Icon	Function
Home	Return to Home Screen
Fly	Fly View (current screen)
Plan	Mission Plan View
Checklist	Pre-flight checklist
Takeoff / Land	Automated takeoff or landing sequence
Return	Trigger RTL
Warnings (triangle)	Active alerts list
Log (document)	Flight log viewer

3.9 Arming and Taking Off

Before the vehicle can fly, it must be armed. **If possible we always suggest to arm and take off the aircraft with the Hand Controller!**

13. Ensure all pre-flight checks are complete and no warnings are active.
14. A centre prompt appears: Arm the vehicle. Slide or hold spacebar.
15. Slide the on-screen slider or hold the spacebar to arm.
16. Once armed, use the Takeoff icon on the left panel or switch to QHover/Auto mode to initiate flight.

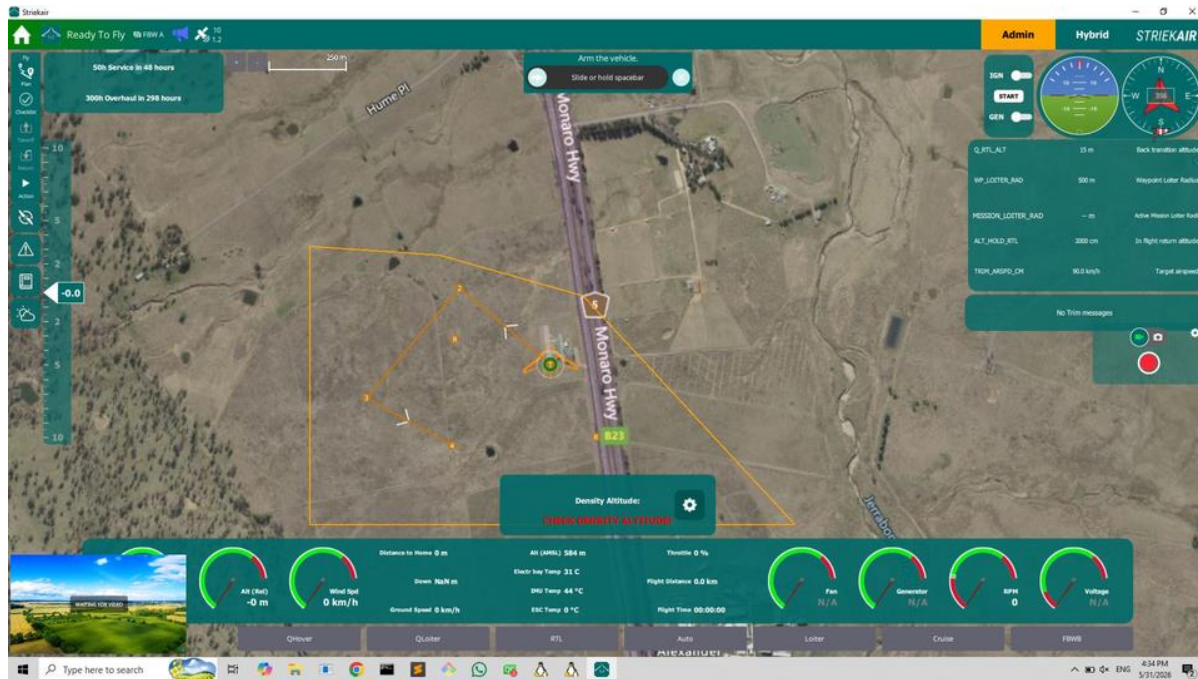


Fig. 9 — Fly View with an active mission loaded (orange waypoints visible) and the Arm the vehicle prompt displayed.

3.10 Flying a Mission (Auto Mode)

Once the vehicle is armed and airborne, switch to Auto mode to execute the uploaded mission.

17. Confirm the mission is uploaded (see Section 4).
18. Arm the vehicle and initiate takeoff (QHover or automated takeoff).
19. Click Auto in the flight mode bar. The vehicle follows the waypoint route.
20. Monitor progress on the map — the vehicle icon tracks along the orange route line.
21. Telemetry bar shows live Airspeed, Alt (Rel), Ground Speed, Throttle, RPM, and Flight Time.
22. To pause the mission, click the Pause icon on the left panel.
23. To abort at any time, click RTL. The vehicle returns to the launch point and lands.

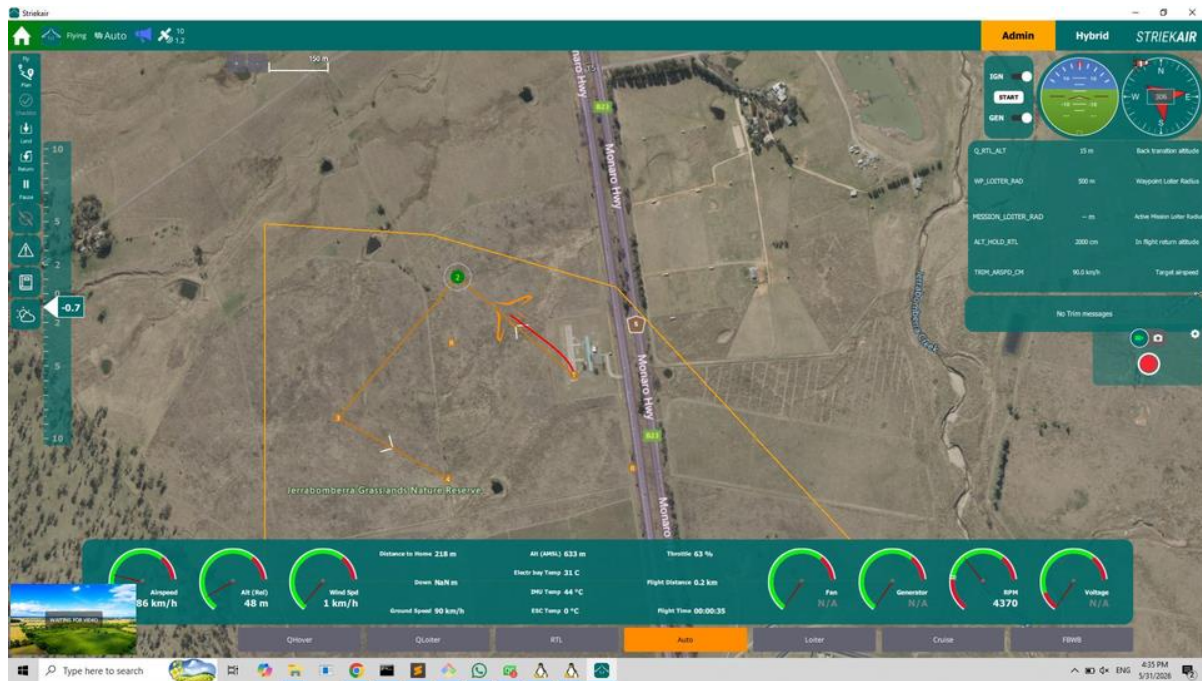


Fig. 10 — Vehicle flying in Auto mode: top bar shows Flying / Auto, throttle at 63%, ground speed 90 km/h, RPM 4370. The red trail shows the path flown.

Note: The Action icon on the left panel provides in-flight commands such as orbit, go-to, and guided waypoint.

4. Plan View — Mission Planning

The Plan View is used to create, edit, and upload autonomous missions before flight. Access it by clicking the Plan icon on the left navigation panel from any screen.

The Plan View has three tabs in the top-right panel: Mission, Fence, and Rally.

4.1 Plan View Layout

Area	Description
Top bar	Waypoint stats (alt diff, azimuth, distance) and total mission distance/time
Upload Required button	Appears when the mission has unsaved changes; click to upload to vehicle
Map	Satellite map where waypoints are placed by clicking
Right panel	Mission item list and selected waypoint properties
Elevation profile	Bottom strip showing altitude profile of the mission

4.2 Creating a Mission

24. Click the Plan icon from Fly View to open Plan View.
25. The Mission tab is selected by default. The right panel shows the mission item list (Mission Start, VTOL takeoff, Waypoints).
26. Click Waypoint in the left toolbar to enter waypoint placement mode.
27. Click on the map to place each waypoint. Numbered markers (2, 3, 4...) appear connected by orange lines.
28. Click a waypoint on the map or in the right panel list to select it and edit its properties (altitude, camera action).
29. The elevation profile at the bottom updates automatically as waypoints are added.

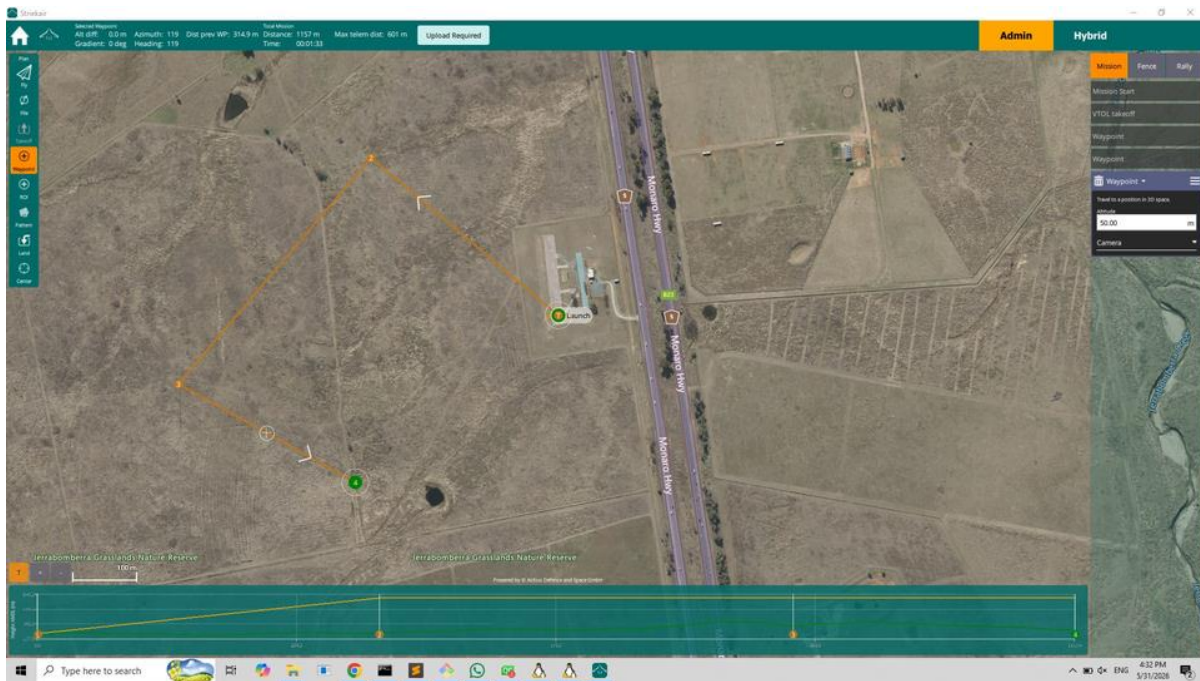


Fig. 11 — Plan View: Mission tab with 4 waypoints placed. Right panel shows waypoint properties (altitude 50 m). Elevation profile visible at bottom.

4.3 Mission Start Settings

Click Mission Start in the right panel list to configure global mission settings:

- All Altitudes — set relative to launch or calculated above ground. We don't suggest AMSL
- Initial Waypoint Alt — default altitude for new waypoints (e.g. 50.0 m).
- Firmware / Vehicle — shows ArduPilot / VTOL (read-only).
- Cruise speed / Hover speed — used to calculate total mission time estimate.
- Launch Position — sets the home/launch point.

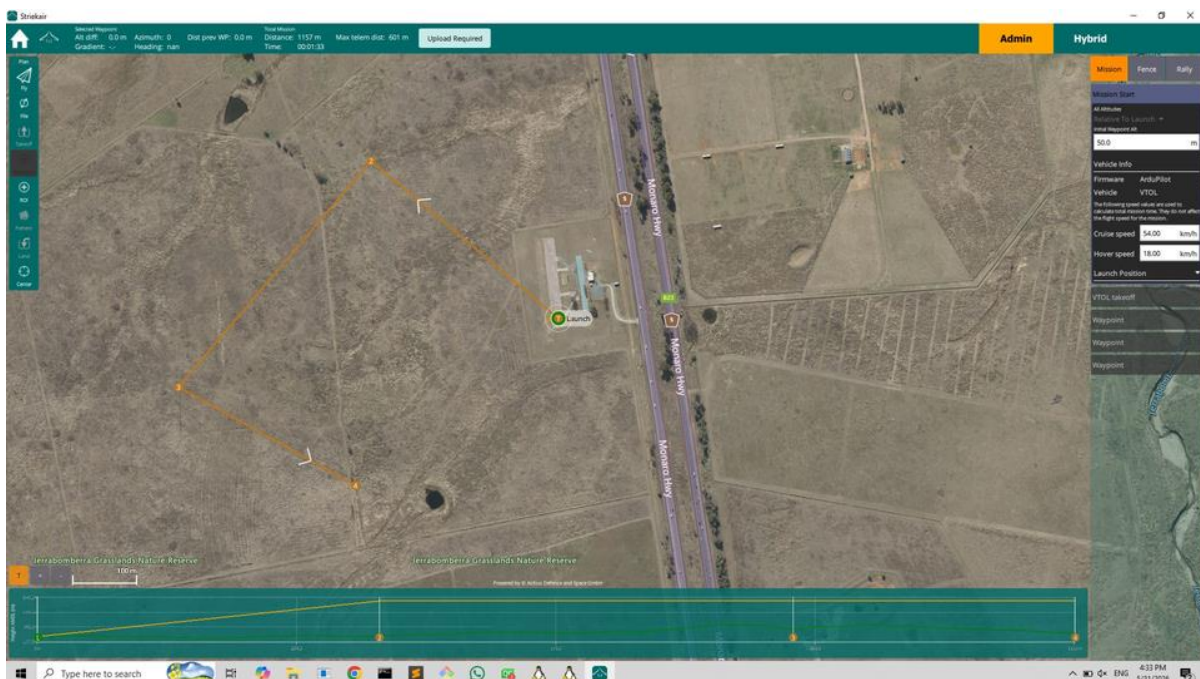


Fig. 12 — Mission Start panel: altitude reference, cruise speed (54 km/h), hover speed (18 km/h), and Launch Position settings.

4.4 Mission Commands

Click the command type dropdown on any waypoint in the right panel to change its behaviour. Available basic commands:

Command	Description
Waypoint	Travel to a position in 3D space
Return To Launch	Send the vehicle back to the launch position
Land (Dont use!) Use VTOL Land	Land at the specified location
Takeoff	Take off and ascend to specified altitude
Spline Waypoint	Travel to position using a smooth spline path
Delay	Pause mission for a set number of seconds

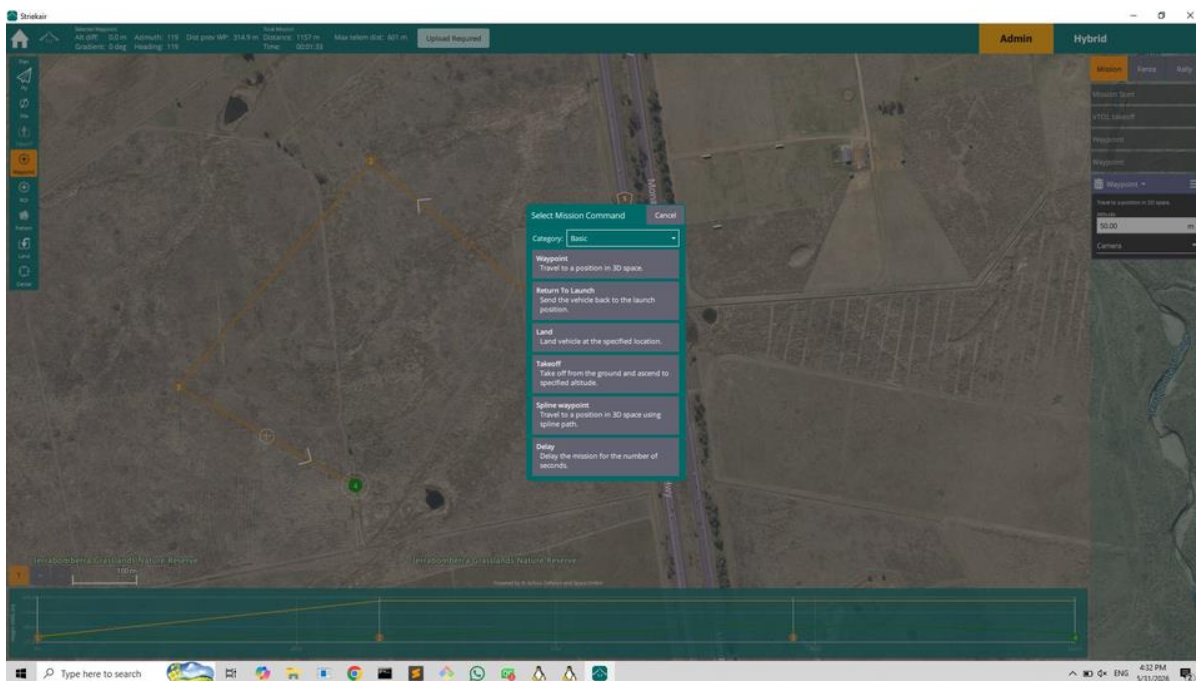


Fig. 13 — Select Mission Command dialog showing available Basic category commands.

4.5 Left Toolbar (Plan View)

Tool	Function
Waypoint	Click map to add a waypoint
ROI	Set a Region Of Interest — camera points here during flight
Pattern	Insert automated survey or scan patterns
Land	Insert a landing sequence item
Center	Re-centre map on the mission

4.6 GeoFence

Click the Fence tab in the top-right panel to define a virtual boundary around the operating area.

30. Click Polygon Fence or Circular Fence to create a new fence.
31. Drag the white circle handles on the map to shape the fence boundary.
32. Use the Inclusion checkbox to set whether the fence keeps the vehicle inside or excludes the zone.
33. Click Add Breach Return Point to set where the vehicle flies if it breaches the fence.
34. Use the Del button to remove the fence.

Note: The fence toolbar at the top of the map (Basic, Circular, Trace, Load KML/SHP, Polygon Tools) provides additional fence creation options.

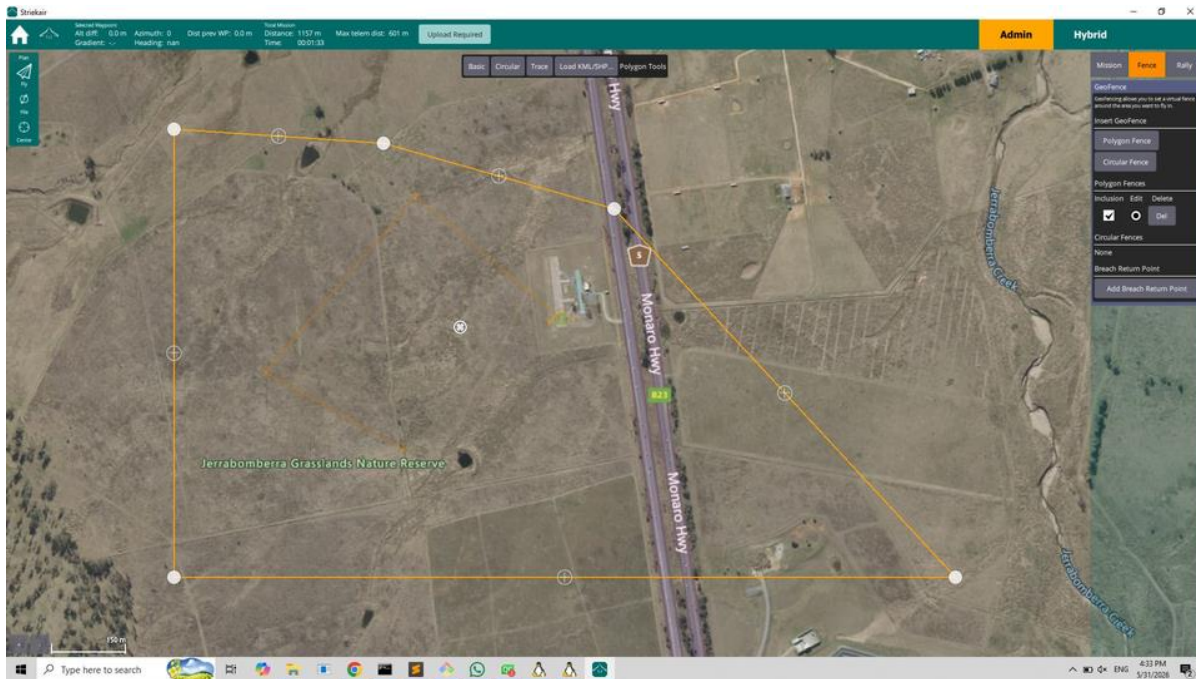


Fig. 14 — Fence tab: polygon inclusion fence drawn around the operating area. Right panel shows Polygon Fences, Circular Fences, and Breach Return Point options.

4.7 Rally Points

Click the Rally tab to add alternate landing/RTL points used when a Return To Launch is triggered away from the main launch site.

Be Careful that the Parameter Settings are set to Fly to the Rally Points. Use STRIEKAIR GCS Simulator to doublecheck Rallypoint behavior

35. Click Rally Point in the left toolbar.
36. Click on the map to place the rally point (shown as a green R marker).
37. Edit the longitude, latitude, and relative altitude in the right panel.

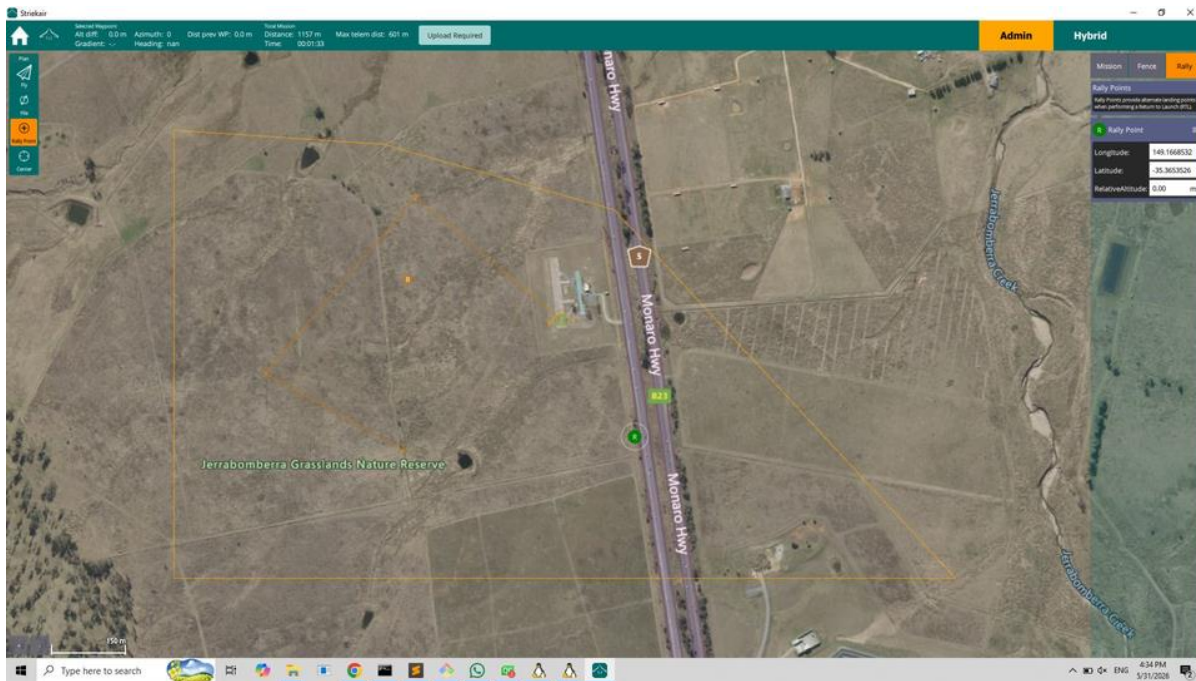


Fig. 15 — Rally tab: a rally point (R) placed near the runway. Right panel shows its coordinates and relative altitude (0.00 m).

4.8 Uploading the Mission

Once the mission, fence, and rally points are ready:

38. Click Upload Required in the top bar. The button turns grey when the upload is complete.
39. Verify the waypoints appear correctly on the Fly View map before arming.

Warning: Always upload and verify the mission before arming the vehicle. Flying with a stale or unuploaded mission can cause unexpected behaviour.

5. Select Tool Menu

In the Fly View, click the tool icon in the top bar to open the Select Tool pop-up.

Option	Description
Vehicle Setup	Configure motors, radio, flight modes, joystick, camera
Application Settings	Manage offline map tile sets
Striekair Version	Displays installed app version (e.g. v4.3-95)

Click Close to dismiss without selecting.

6. Vehicle Setup

Access via Select Tool → Vehicle Setup. Use Back to return to Fly View.

6.1 Joystick

Calibrate a connected USB/Bluetooth joystick. Move all axes and buttons through full range as prompted.

6.2 Radio

Calibrate the RC transmitter. Turn on the transmitter, then move all sticks and switches through their full range when prompted.

6.3 Flight Modes

Map RC channel switch positions to autopilot modes. Ensure RTL and at least one stabilised mode are on recoverable switch positions.

6.4 Motors Setup

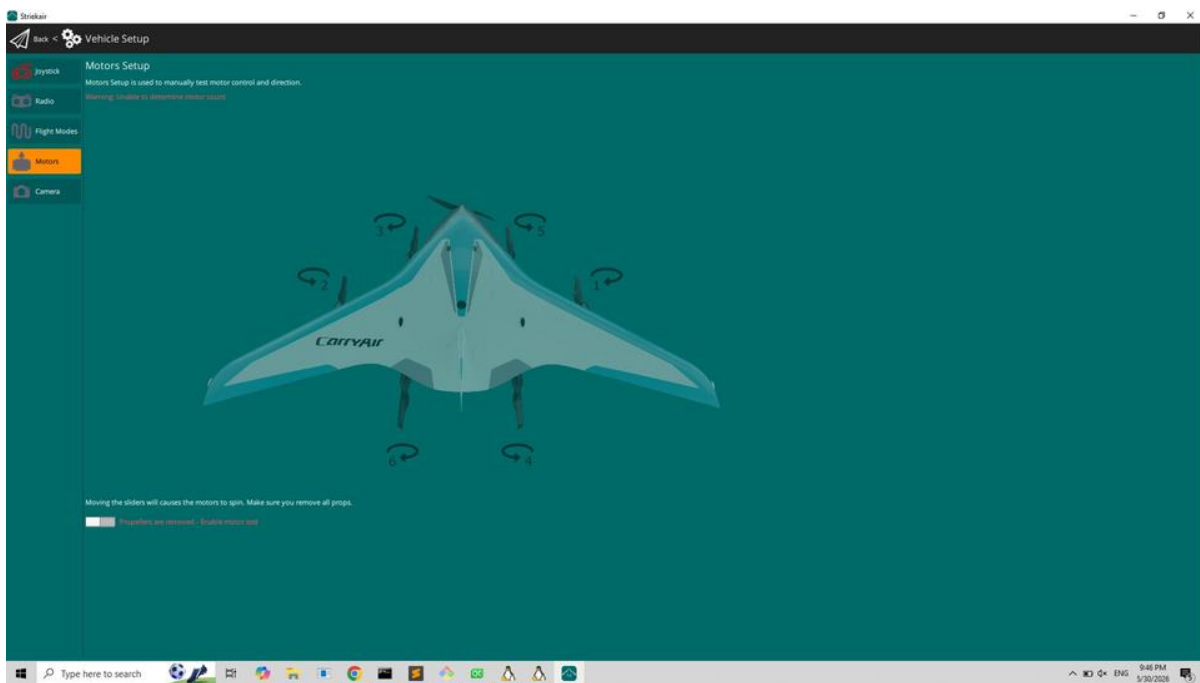


Fig. 10 — Motors Setup screen showing the CarryAir top-down diagram with numbered motor positions (1–6).

Warning: Remove all propellers before enabling motor tests or test the aircraft outside with enough safety distance to the propellers.

40. Toggle Propellers are removed — Enable motor test to ON.
41. Use the individual sliders to spin each motor.
42. Verify rotation direction matches the arrow shown on the diagram.
43. Return all sliders to zero and disable the toggle when done.

6.5 Camera

Configure camera trigger method, overlap, and gimbal parameters. Settings depend on installed hardware.

7. Application Settings — Offline Maps

Access via Select Tool → Application Settings. Offline Maps lets you manage map tile sets for use without internet connectivity.

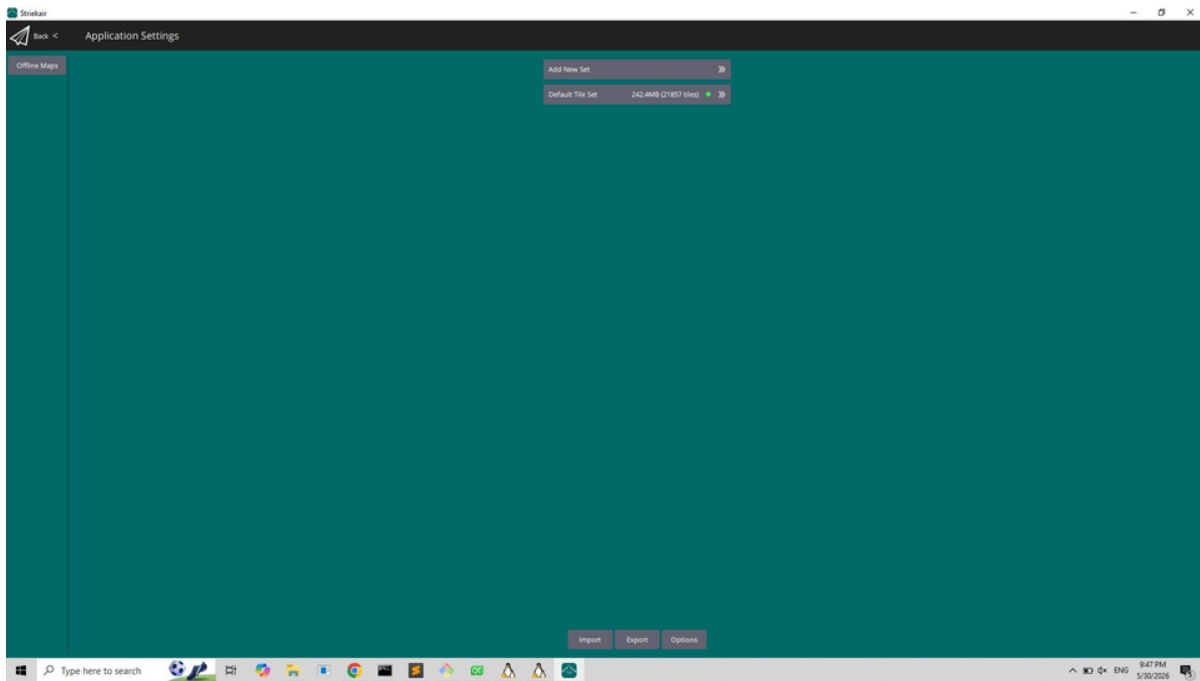


Fig. 11 — Application Settings showing the Default Tile Set (242.4 MB, 21857 tiles, green status indicator).

7.1 Managing Tile Sets

- Add New Set — define area, zoom levels, and source, then download.
- Import — load a tile set file from disk.
- Export — save a tile set file to transfer to another ground station.
- Options — rename, delete, or set a tile set as default.

Note: Export tile sets before deploying to areas with no internet coverage. Transfer the file to the field laptop and import it there.

8. Troubleshooting

Symptom	Action
FLY button greyed out	Select a UAV type (Electro or Hybrid) in the centre panel
CHECK DENSITY ALTITUDE!	Calculate density altitude; delay flight if above limits
WAITING FOR VIDEO	Check camera power and video link; verify camera config in Vehicle Setup
Login fails	Check username/password (case-sensitive); contact admin to reset
Offline map not showing	Add or import a tile set in Application Settings → Offline Maps
Unable to determine motor count	Connect the vehicle via telemetry before entering Motors Setup
No telemetry data in bottom bar	Check MAVLink radio connection and vehicle power

9. Support

- Help Center — click the Help Center card on the Home Screen to open the online support portal.
- Service Bulletin — click the Service Bulletin card to view mandatory maintenance notices. Review before every deployment.
- Version — displayed at the bottom of the Select Tool menu (e.g. Striekair Version v4.3-95). Provide this when contacting support.