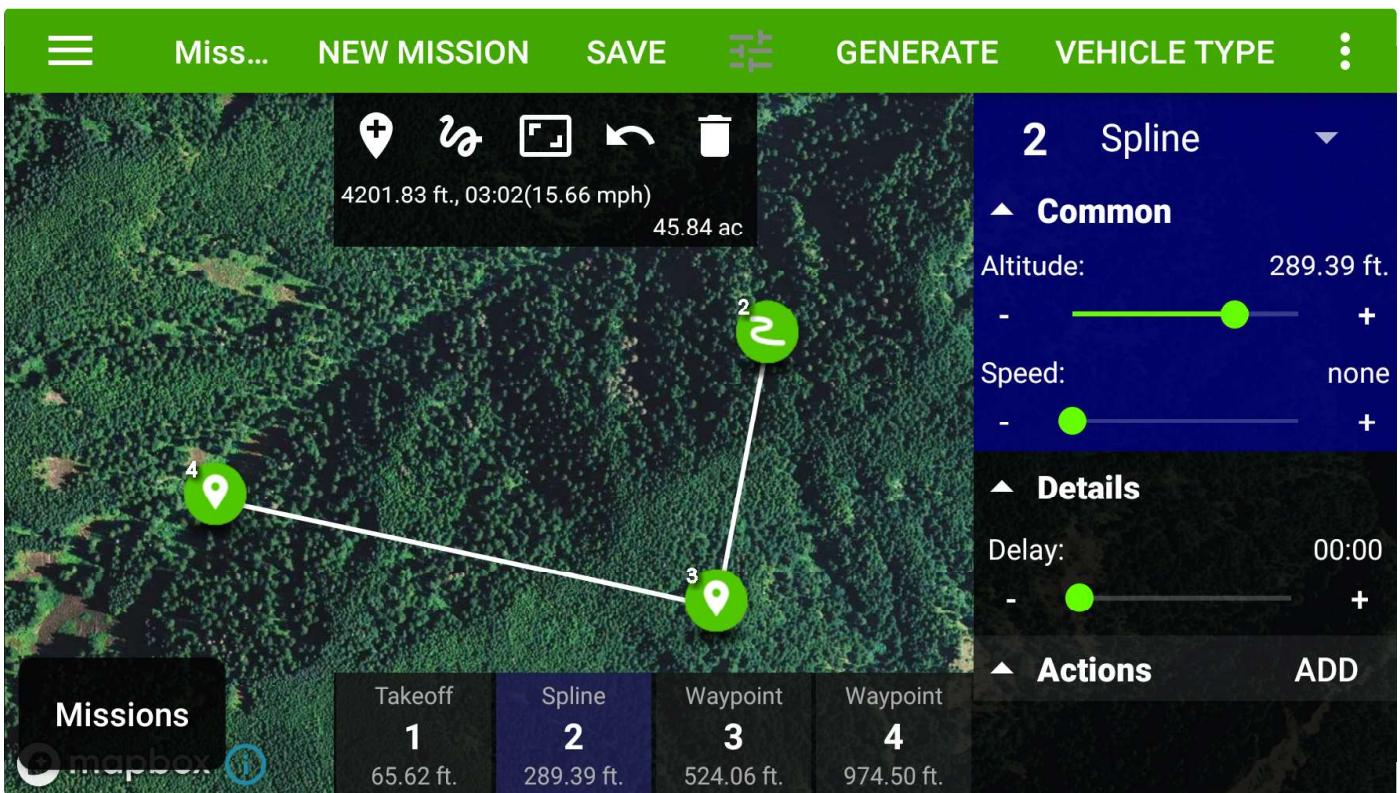
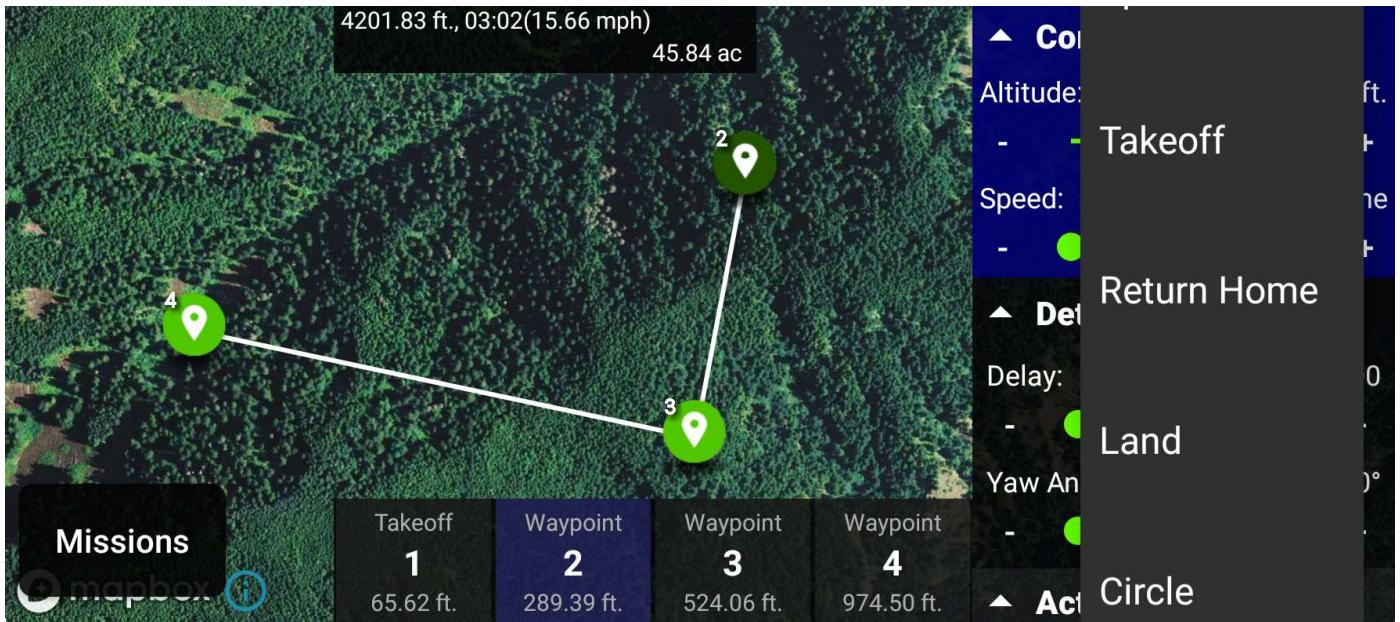


## Spline Points

Spline points cause the vehicle to fly in a smooth path between them, without stopping abruptly. The vehicle does this by calculating a "spline path" between points, with extra waypoints in between. UR/Solex TX represents this on the screen by generating similar splines. So you'll notice that if you draw a path with spline points, the line between the points will curve to them. It's important to note, however, that this line does not necessarily reflect the actual line your vehicle will fly on a mission. The algorithm that calculates the splines on the map screen is not the same one that calculates the path the vehicle will fly.

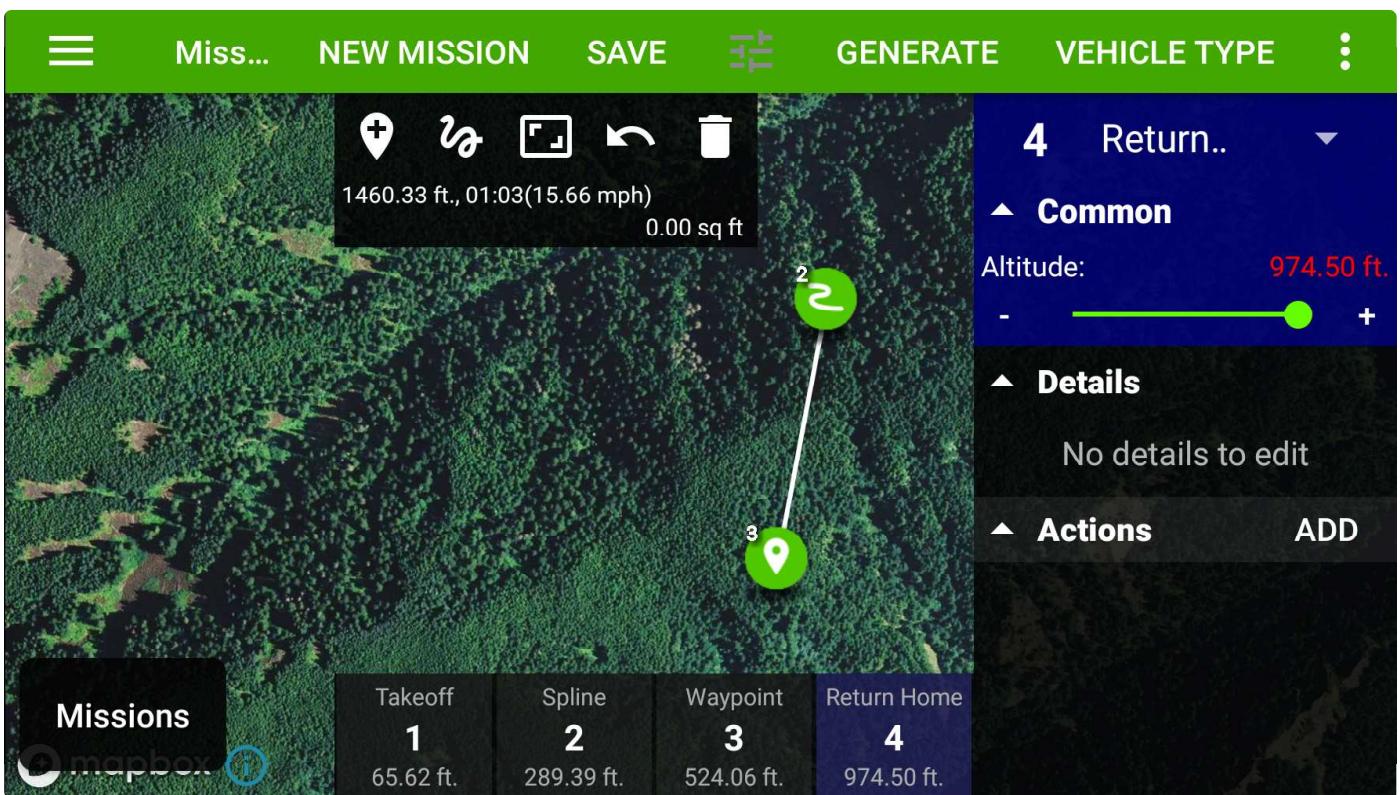
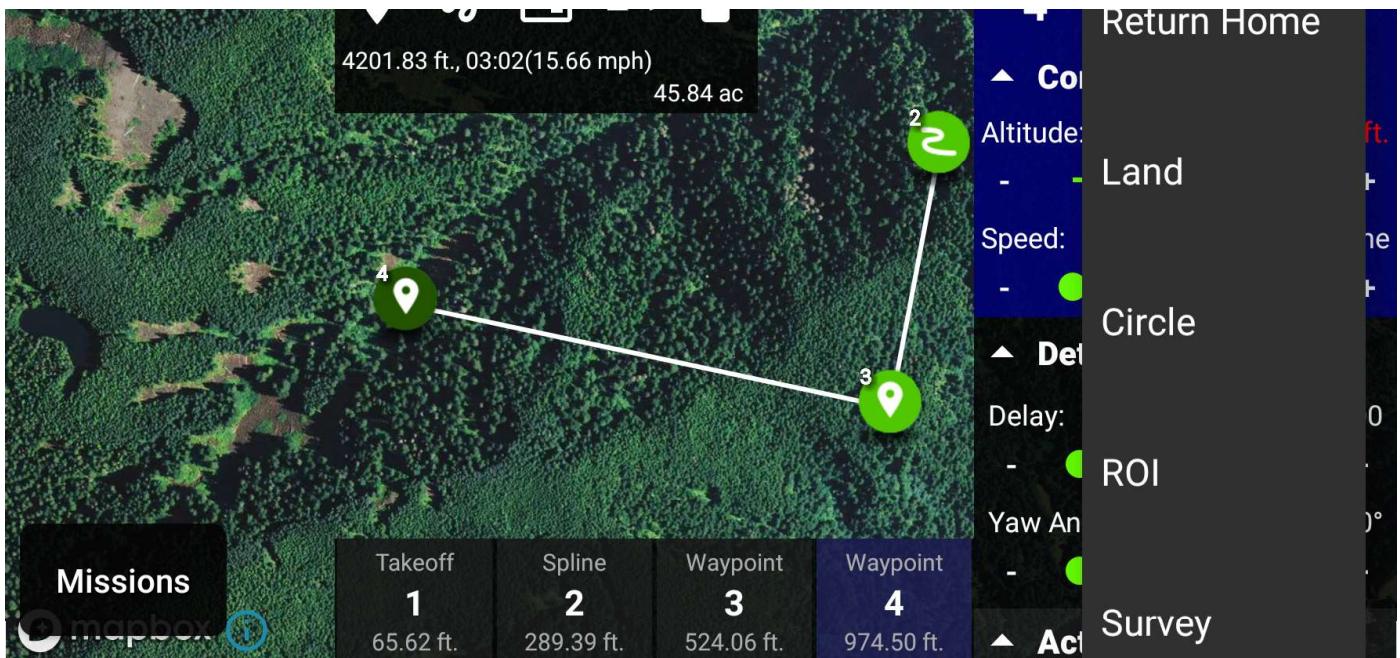




## Return Home

To change the last waypoint to a Return Home, click the top of the panel, and it will drop down a list of items. Click `Return Home` in the list. The panel's contents will change to show just the relevant attributes for a Return Home. The waypoint also disappears off of the map, because a Return Home doesn't really have a defined point; it's just the location your vehicle starts to return to the launch location to land.

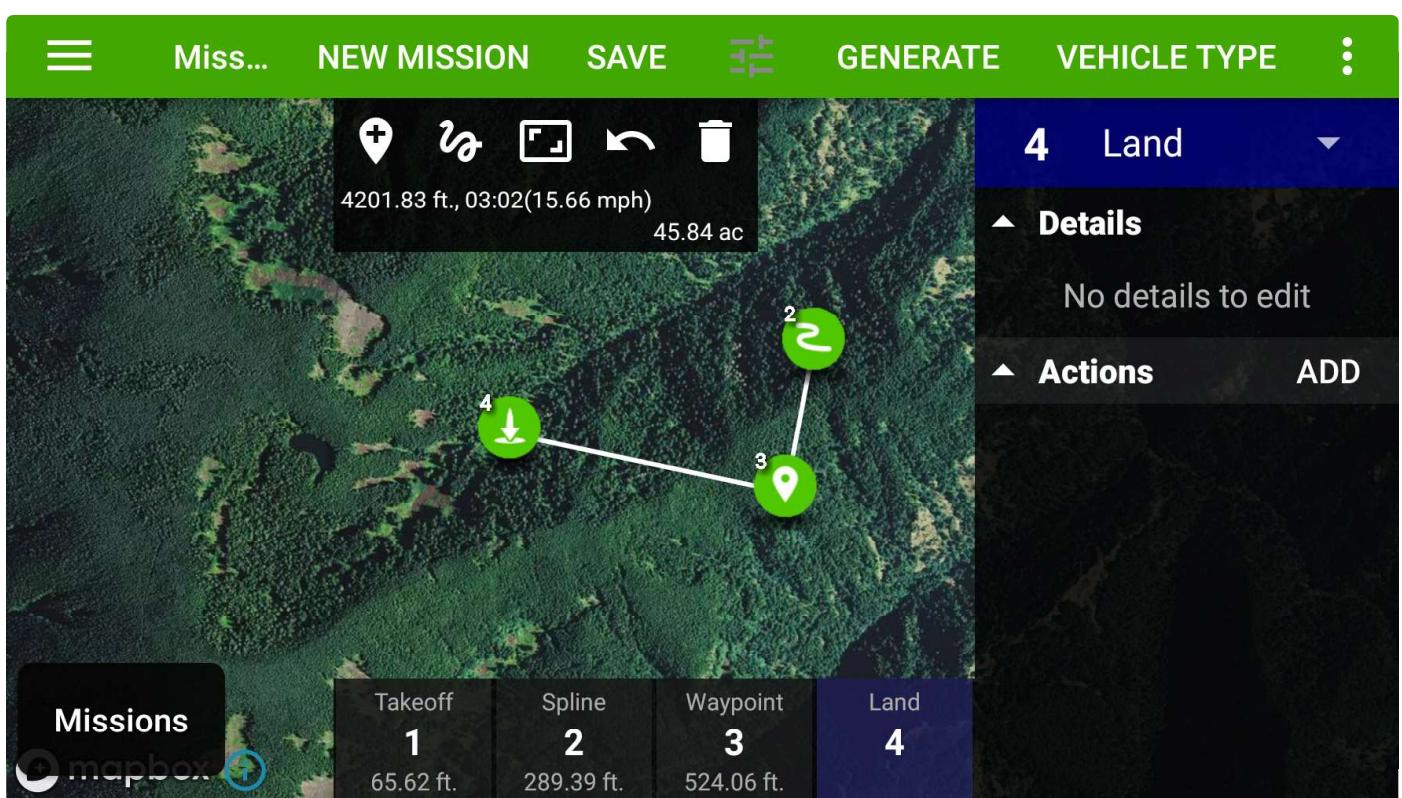
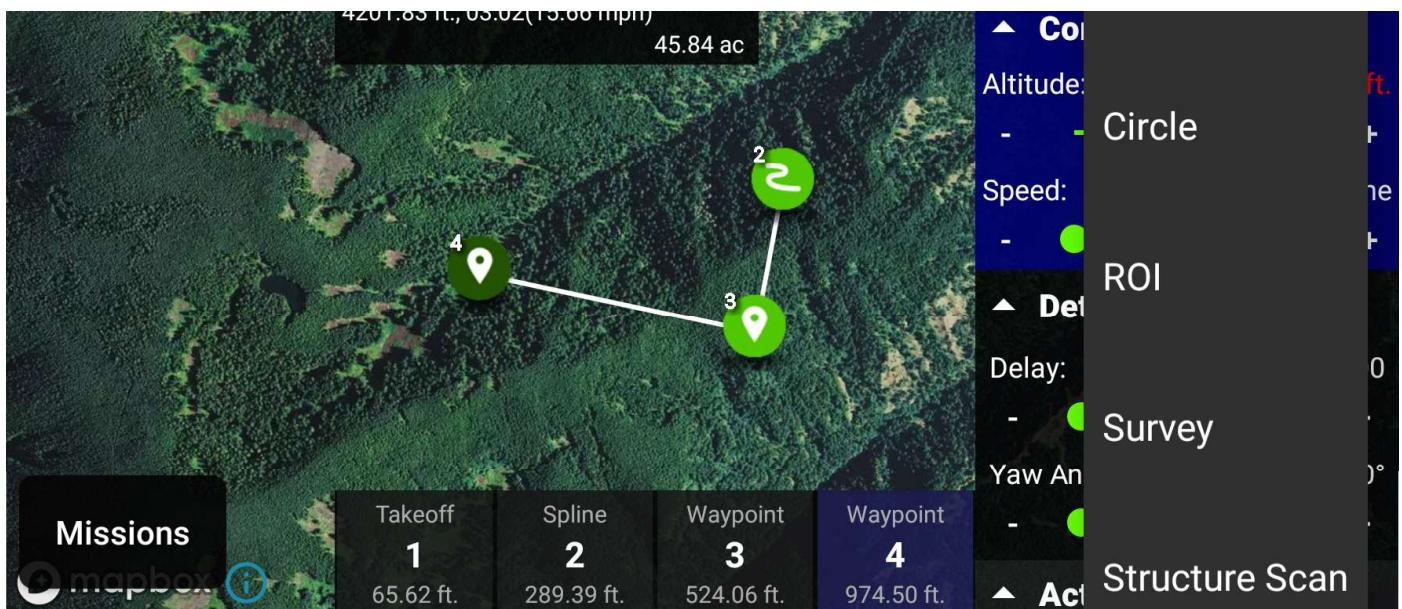




## Land

To change the last waypoint to a Land, click the top of the panel, and it will drop down a list of items. Click Land in the list.



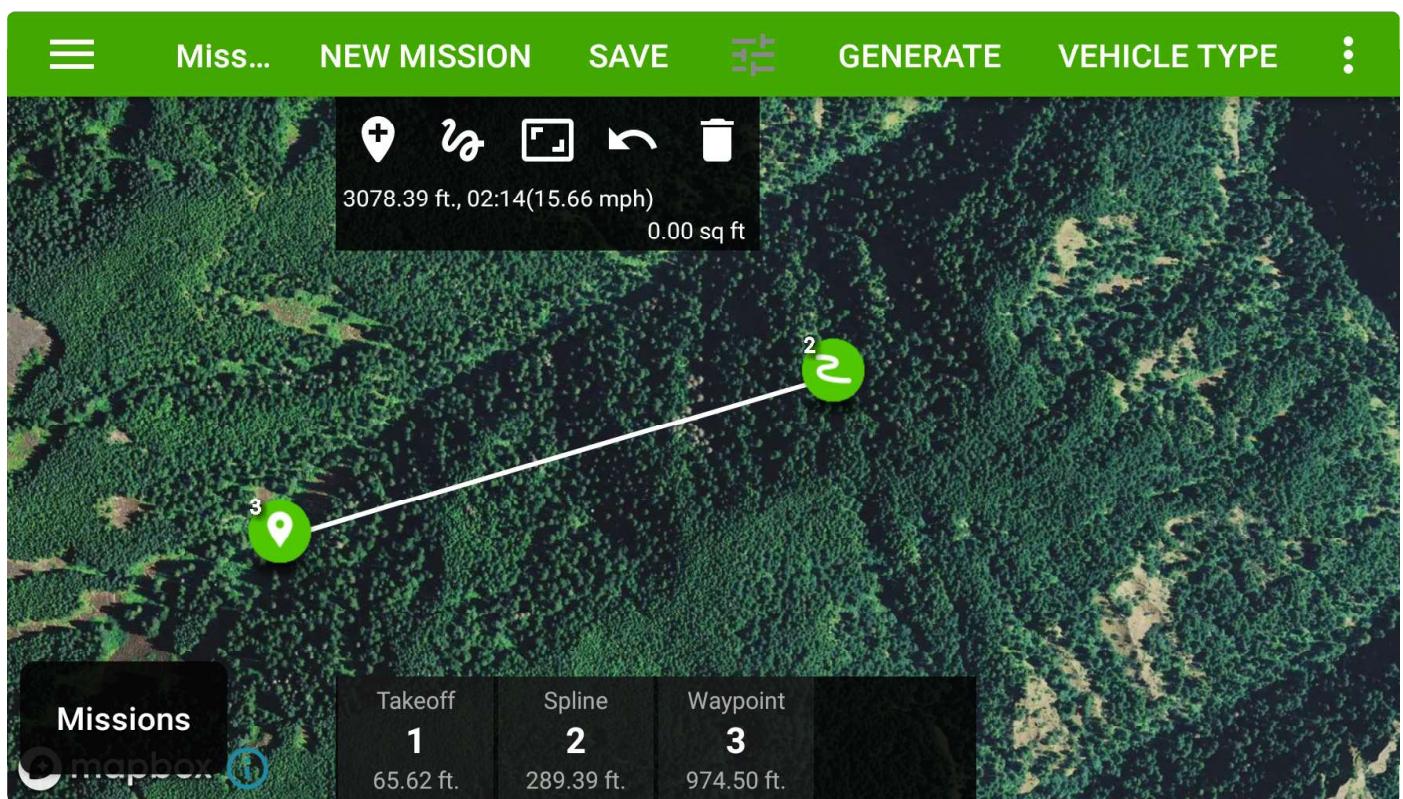
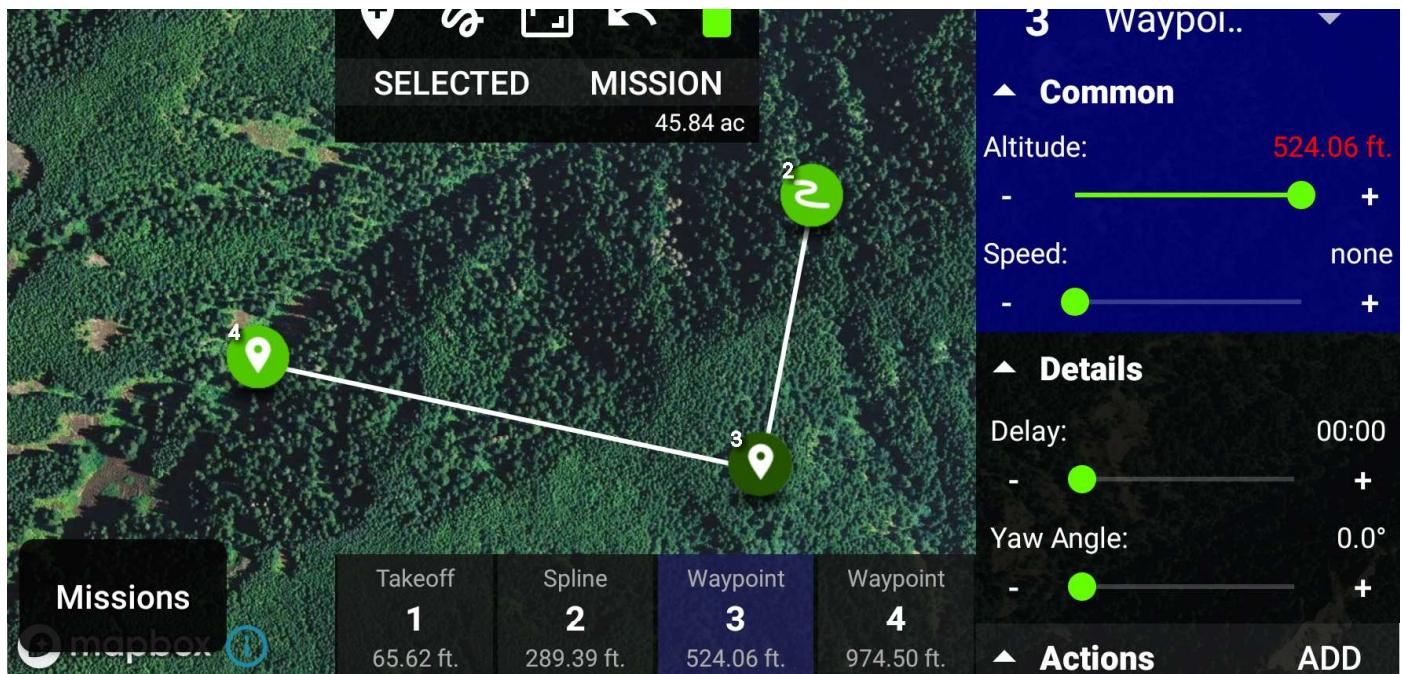


### Deleting a Waypoint

Click the trash can icon on the toolbar and pick something to delete, either by clicking the item on the map, or in the bottom list. It will disappear. If you didn't mean to do it, hit the Undo button, and it will re-appear.

To stop deleting things when you click them, click the trash can icon until it's not highlighted.





## Terrain Following

Altitudes in missions are defined as distance from the ground (AGL) at the takeoff location. If a mission encompasses a hill or valley, you'll have to manage your waypoint altitude carefully to avoid either flying too high, or flying into the side of a hill. Or, you can use the Follow Terrain action in the Mission Editor. In order to use this, you have to have access to an internet connection.

**NOTICE:** You only need the internet connection while you're applying elevations to waypoints during mission editing. You don't need it to fly the mission. Also, if you move any waypoints after applying elevations, you should apply elevations again to make sure their altitudes work with their new ground elevations.

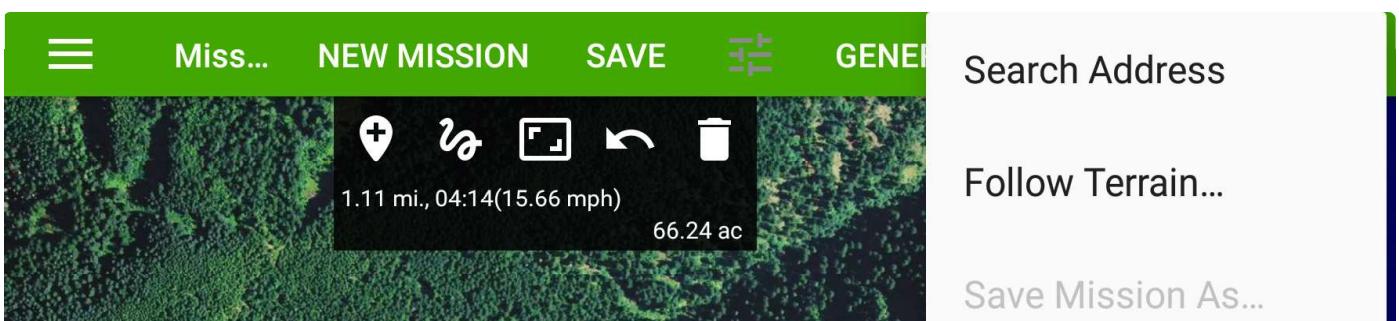
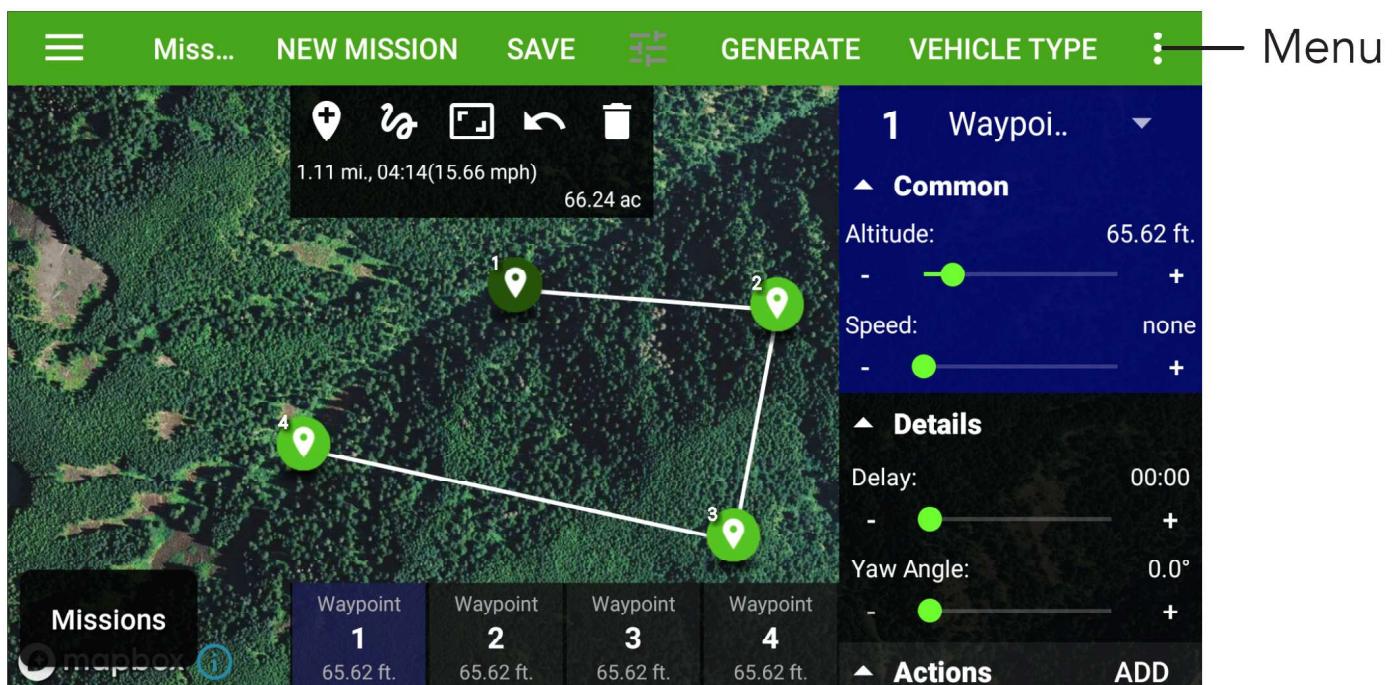
For example, a mission where the first waypoint is at the bottom of a 30-meter hill and the next waypoint is at the top of the hill, and the altitudes of both waypoints are at 10 meters. After applying elevation, the altitude of the second top-of-the-hill waypoint will be 40 meters.

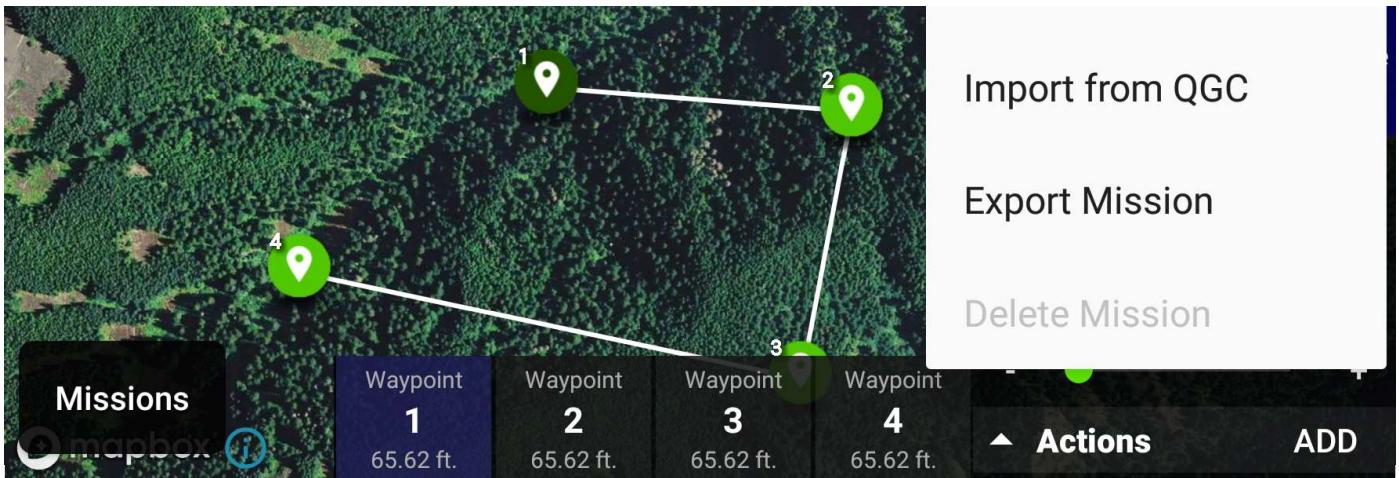
**WARNING:** If a waypoint is set at the bottom of a hill, and another one is down the far side of a hill or at the bottom of the opposite side, Solex will look for the highest elevation between those points and check whether the angle to the high point is higher than the angle between the destination points. If it is, it will warn you of problem areas and mark them on the map so you can put additional waypoints of your choice there. Drop additional waypoints, and drag them to the right position in the bottom waypoint list view. Once they're in place, run Terrain Follow again.

On infrequent occasions, Solex might flag a point right next to a waypoint as a possible error. This can happen on terraced fields if you drop individual waypoints on the tops of the terraces. In this case, click **Use Anyway** in the warning dialog that appears, and elevations will be applied normally.

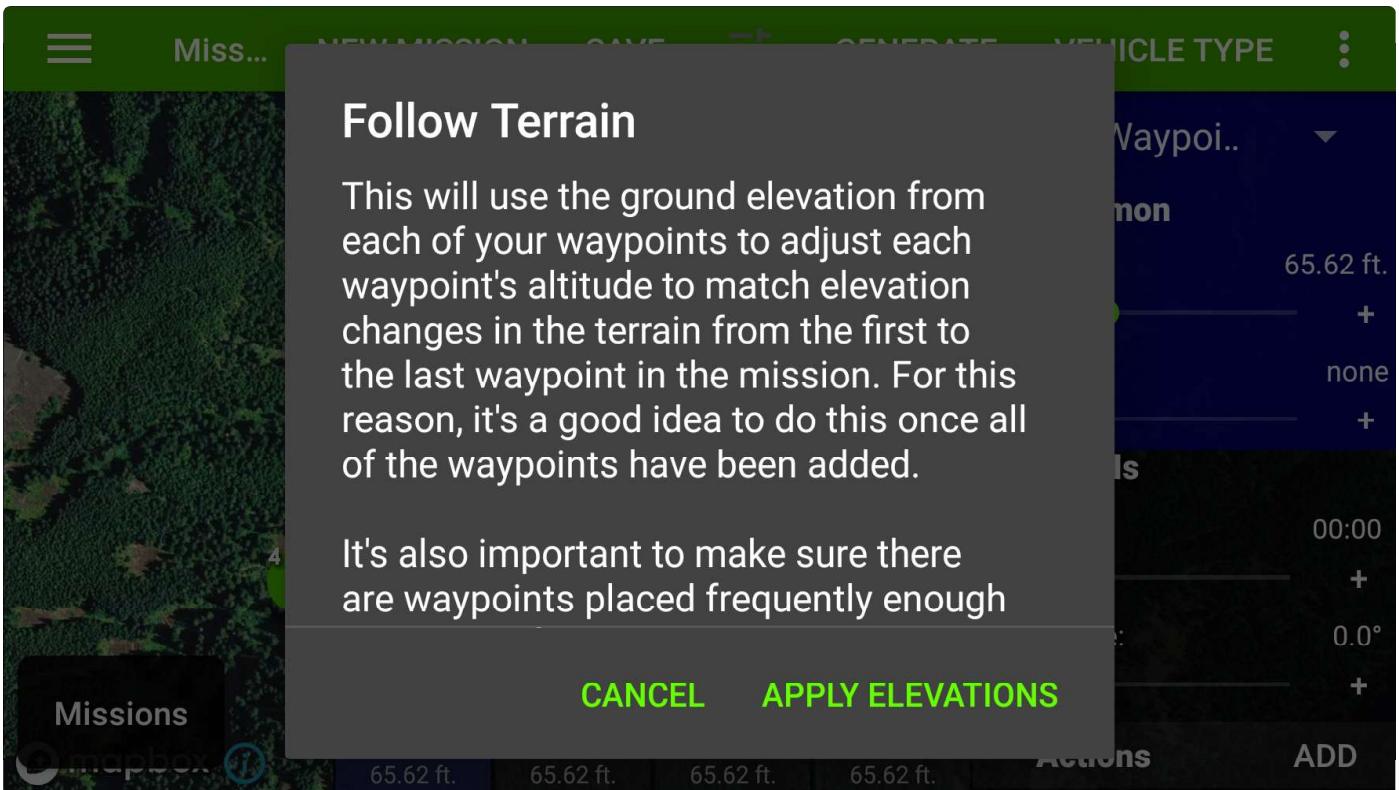
**NOTICE:** Terrain following does not apply to multi-point waypoint items such as surveys, Wall Scan, Tower Scan, Structure Scan, etc. Only the altitude of the item itself will be adjusted.

Draw all of your waypoints on the map, then select **Follow Terrain** from the menu (it will be grayed out if you don't have an internet connection, or your mission is empty).

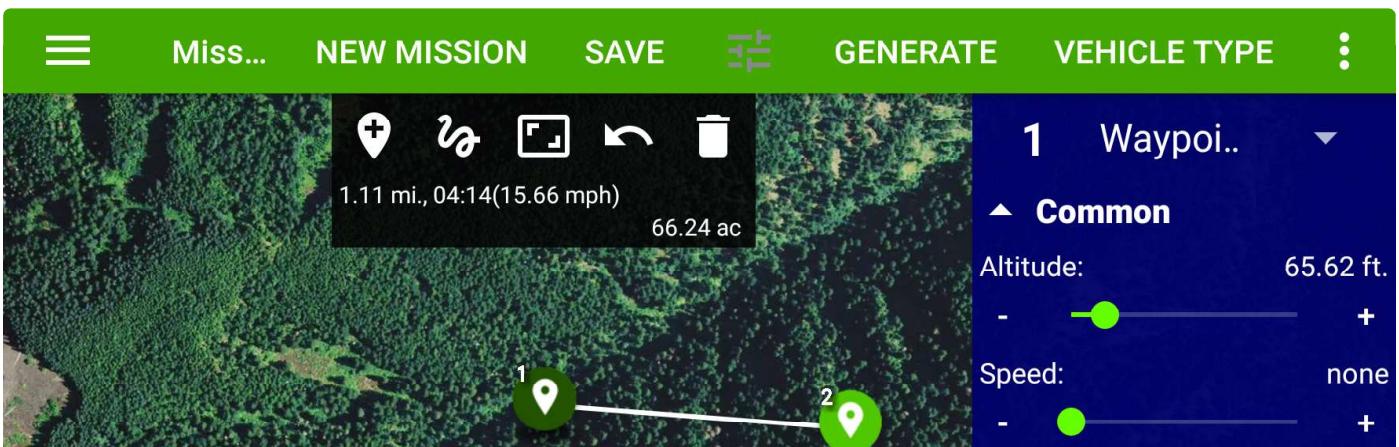


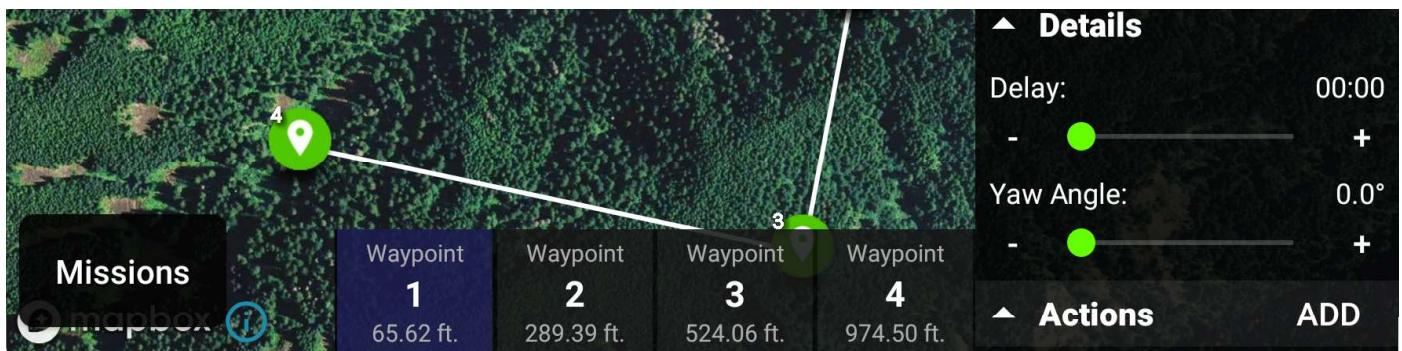


On the dialog box that appears, click **Apply Elevation**.



UR/Solex TX will look up the elevation for each location in your mission to find the ground elevation at each location. For each location in the mission, it will add the difference between the first location's elevation and the current location's elevation to the current location's altitude.





## Grid Missions

This is a fairly complex mission item that can do a lot of different things, but requires some planning in order to use it.

A Grid acts a bit like a survey, in that it causes the vehicle to travel a path back and forth over a polygon area. But instead of controlling the distance between survey runs (the lines going from end to end) by way of camera parameters, you specify the distance between the runs directly via the width attribute.

The normal mission-item attributes like Speed and Altitude are present if you need to specify them. Angle controls the angle relative to North that the lines on the Grid will be oriented.

## Turns

You can specify the speed at which the vehicle flies (or rolls, as this is meant to be used with rovers as well) along runs, vs how fast it performs turns at the ends. You can also specify actions to be performed at the start of a turn, as well as at the start of a run. So imagine you have something attached to the vehicle that you want to turn on at the start of a run and off during turns. Run actions and Turn actions let you do that.

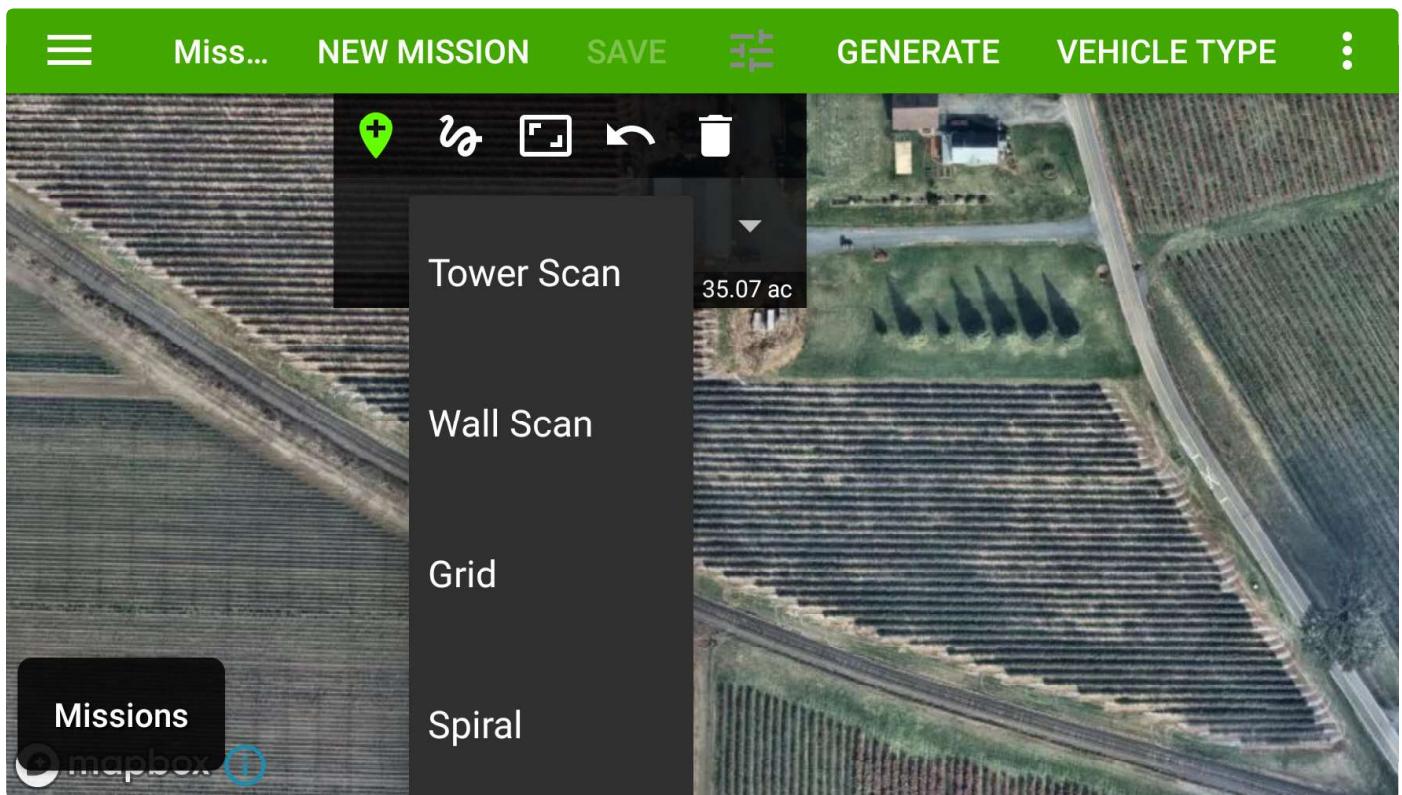
The Turn Margin attribute affects how closely the vehicle will change from Run to Turn speed (and vice versa) from the end of the run.

Turn Delay and Run Delay can be used to control how long the vehicle waits between speed changes. This is useful if you've assigned an action that takes some time to complete before the vehicle should continue the mission.

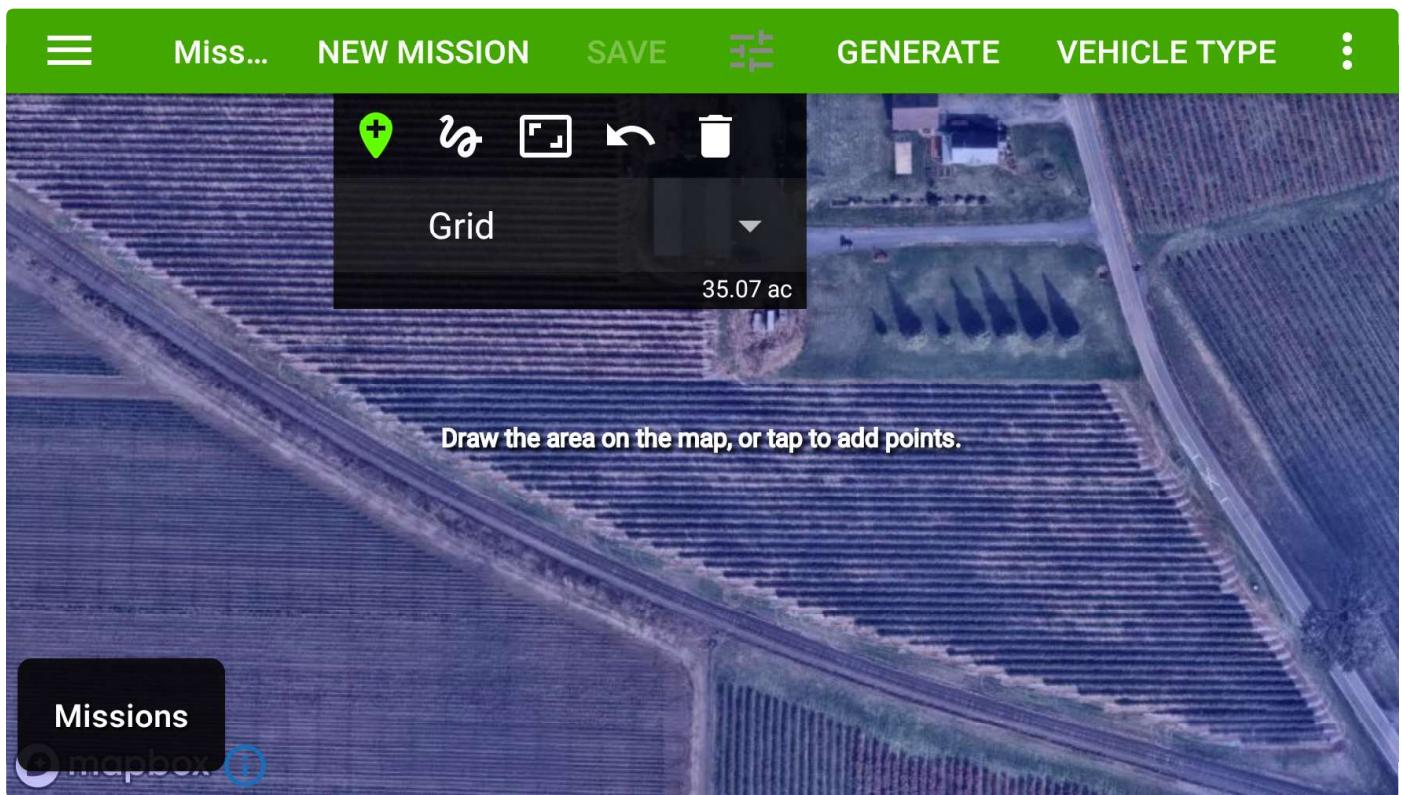
## Guide Point

Depending on how it's configured and tuned, a vehicle may tend to wander after it makes a turn at the end and heads toward the waypoint at the opposite end of the run. Or, like a plane, it might swing wide around the waypoint and head to the opposite end at an angle. If this is undesirable, you can add Guide points to each run to give the vehicle something close to aim for, and get on track more quickly. You can also assign

actions to be run at each Guide point if you want to. You can control how many Guide points there are To create a mission using Grid, click the + marker in the toolbar, which will then turn green. To the right on the toolbar, there will be a drop-down list of waypoint types that you can drop, choose Grid .



Tab the map in the area you want to create a grid.



Use your finger or stylus pen to draw the perimeter of the area you want to to add a grid mission.