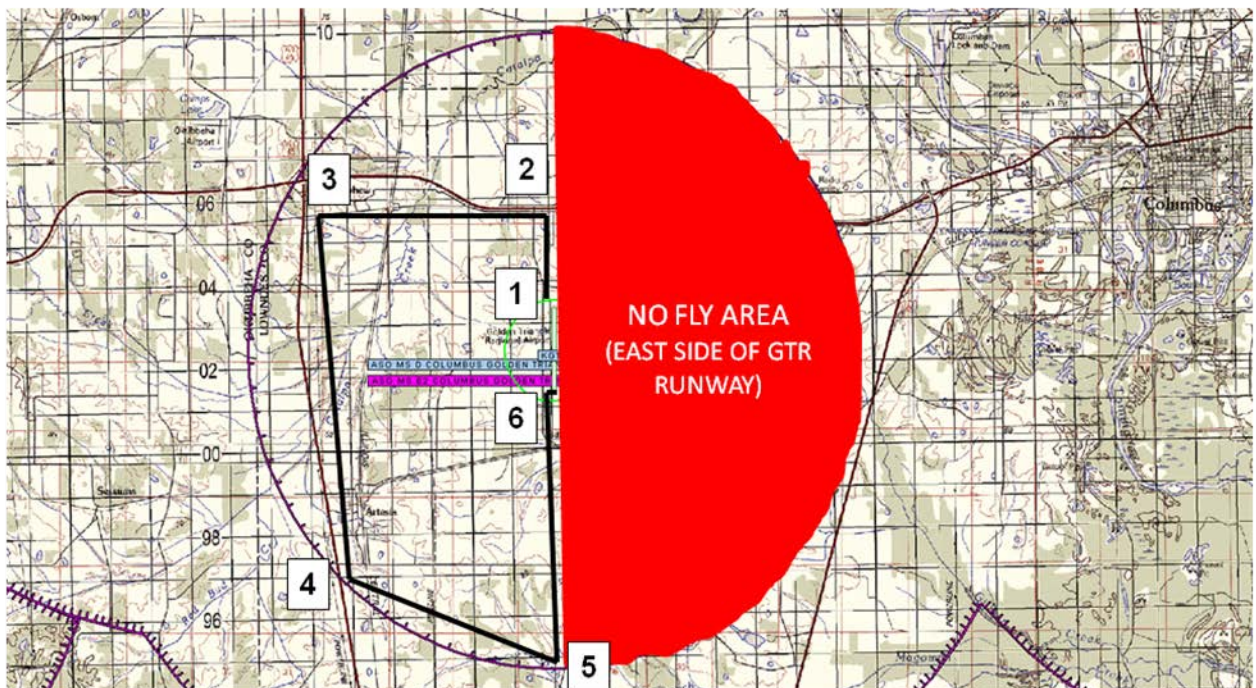


For GTR operations: All flight operations will remain within the GTR Class D airspace on the West side of the airfield at or below 2500 feet AGL – normal operating altitude will be 2000 feet AGL (at request of airport manager). All flight operations will be South and West side of the airport (AKA large operating area shown below) remaining within the GTR Class D airspace. The Heron will NOT overfly any habitable structures or heavy traffic roads. Below is a map depicting the large operational area South and West of the GTR runway.

Runway 36: The Heron will climb out runway heading (360) and begin a climbing turn to 2000 feet AGL (or as directed by ATC). The left turn will commence as soon as practicable to ensure the Heron does not overfly the highway to the North. Pattern altitude will be 2000 feet AGL or as assigned by GTR ATC. The downwind leg parallels the runway approximately 1NM west. The base turn will be approximately 3 NM from the approach end of runway 36. The Heron will begin a descent for the approach. The Heron will intercept the final approach approximately 3NM for the approach end of runway 36.

Runway 18: The Heron will climb out runway heading (180) climbing to 2000 feet AGL (or as directed by ATC). Upon reaching 2000 feet AGL, or as directed by GTR ATC, the Heron will execute a right turn. Pattern altitude (crosswind, downwind) will be 2000 feet AGL or as assigned by GTR ATC. The downwind leg parallels the runway approximately 1NM west. The base turn will be approximately 2 NM from the approach end of runway 18 so as to NOT overfly the highway. The Heron will begin a descent for the approach. The Heron will intercept the final approach approximately 2NM for the approach end of runway 18.



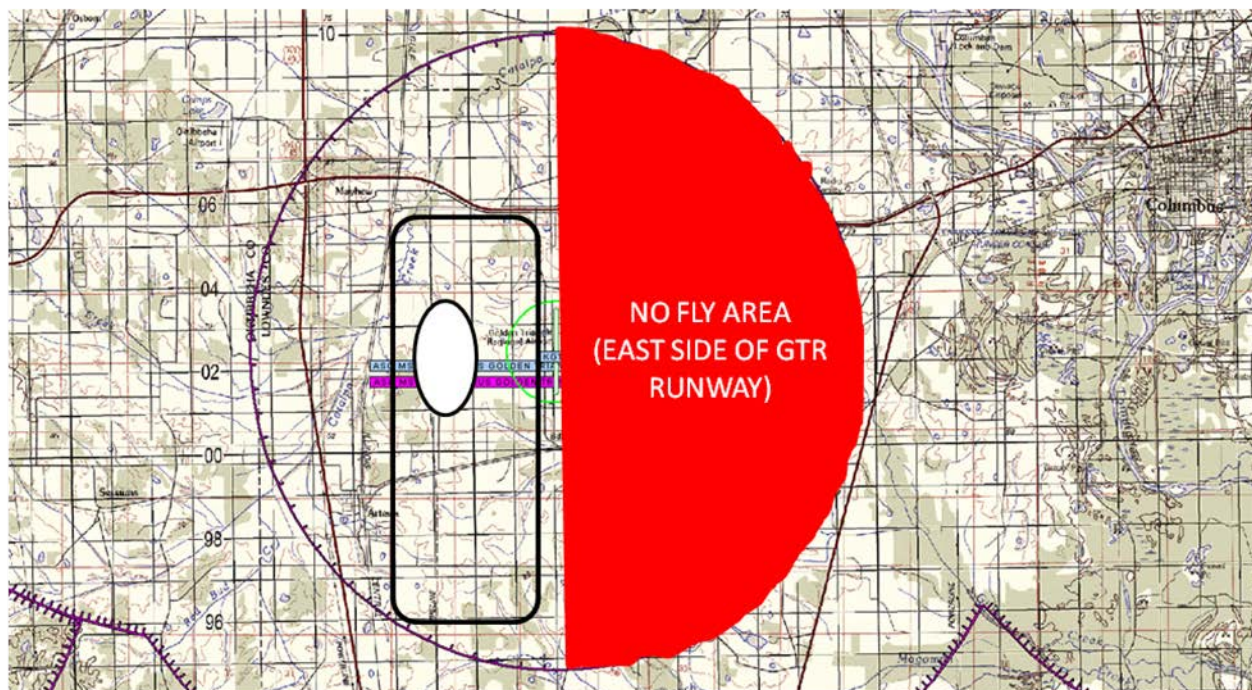
Heron UAS Large Operating Area Boundaries

- | | |
|-------------------------------|-------------------------------|
| 1. N 33 27 38.5 W 088 35 31.5 | 2. N 33 28 46.5 W 088 35 31.5 |
| 3. N 33 28 46.5 W 088 39 22.2 | 4. N 33 24 04.9 W 088 38 35.1 |
| 5. N 33 24 56.9 W 088 35 31.5 | 6. N 33 26 27.1 W 088 35 31.5 |

Heron large operational area South and West of the GTR runway

The following map/picture show the approximate large orbit area that will be used for Heron operations on the South and West side of the GTR runway. The map/picture also depicts the approximate small lost link orbit the Heron will use in the event of a lost link situation. ATC may adjust the lost link holding orbit as needed. However, the orbit will remain within the GTR Class D airspace and not overfly any structures or busy roads.

Ground Observers: Ground observers will be used during all operations at GTR. The primary observer will be located in the GTR control tower (approved by airport Executive Director, Mr. Mike Hainsey (662-327-4422)). The alternate location will be on the airfield ramp at the base of the control tower. Observers will be equipped with Land Mobile Radios (LMRs) to communicate directly with the Heron PIC.



Heron UAS Large Orbit area and small Lost Link Orbit/Holding Point. Lost Link Orbit defined as 1.3 km orbit (.8 NM) Right hand turns from N 33 27 44.1 W 088 36 40.3 to N 33 26 28.5 W 088 36 40.3

- **The Takeoff process is divided into the following steps:**
 1. PIC will ensure all the preflight checklists are complete and system conditions are met (per flight manual) and ready for flight. The PIC verifies the status of these conditions in the Flight/ATOL Conditions window.
 2. The UA and the station check the condition validity for 10 seconds.
 3. After the 10 seconds, the brakes are released, and throttle is increased to WOT (115%).
 4. The UA starts takeoff roll. The PIC is on alert to press the Abort button, should the takeoff process go wrong.

NOTE

To the point of the Decision Point, both AGCS and the UA

can command Abort at any given time.

5. The UA maintains runway centerline.
6. As the UA reaches the pre-defined rotation speed, it pitches up for rotation.
7. After the rotation, the UA maintains a certain pitch attitude while clearing the runway; during the climb the UA maintains the runway centerline heading.

- **Takeoff – Decision Point**

The Decision Point is defined as the point in which a decision is made by means of whether to abort or carry on with the takeoff process. At the Decision Point the system verifies at the rotation point that the remaining runway length to the End of Runway point is 500 meters or less.

- **Takeoff – Abort Command**

Abort can be initiated by a PIC command, or by means of the system. It can be performed when the UA speed is below rotation speed (i.e. the Decision Point). The Abort command is initiated by means of the system whenever a malfunction is detected during takeoff either in the UA or in the AGCS. It also can be initiated when the UA reaches Rotation Speed after the ground roll was only 100 meters. Upon Abort command the UA performs as follows:

1. Throttle decrease command to 0 (Idle).
2. The UA speed decreases, while maintaining runway centerline.
3. As the UA reaches 45 knots or less, the brakes are automatically applied.

Note

The brakes are also applied if speed is greater than 45 knots with the remaining runway length is less than 500 meters.

4. After Abort is initiated, (either through the PIC or system command) the PIC may select the STBY mode, followed by TAXI, or TAKO option (TAKO is not recommended).

- **Take-Over (TAKO)**

The TAKO command allows the PIC to immediately switch from any ATOL mode to Full Stick flight mode.

Typical Arrivals:

Upon receiving landing clearance from GTR ATC, the Heron PIC will execute a pre-selected arrival route, transitioning into an approach, followed by an automatic landing using the ATOL system. During the landing roll, the UA brakes are applied and they stop its landing roll down the runway. The engine is then shut down, and the UA is towed to the hangar.

- The Landing process is divided into the following steps:

1. Navigation into the landing window – The most recommended method is to use the pre-planned Arrival route; the PIC engages the Prgm Arr flight mode, at the most convenient Way Point (WP).
2. During the navigation, the PIC prepares the system for landing according to the checklist. If a RAPS landing is planned, RAPS Calibration test must be performed. When the UA is already on the final approach leg, the PIC can evaluate the UA lateral and vertical location, in respect to the calculated approach Glide-Path.
3. Approach – the PIC checks the ATOL conditions menu. Only when all conditions (checklist) are met can the PIC engage the Landing flight mode.

While the UA is in the Approach/Landing mode, the PIC must be on alert to press the Abort button to initiate a go-around. During the approach, the PIC must monitor all UA instrument readings, including slide slope, altitude Above Ground Level (AGL), as well as airspeed indication.

The PIC must verify that all landing gears are extended and locked down (verified by ground observer), flaps set to 60 degrees, runway is clear, and maintenance personnel are aware of the in coming UA. Throughout the entire approach, the UA maintains Glide-path -- computed Glide path. (Dy, Dz, range, and altitude).

Landing Abort – Abort can be initiated when the UA is above the Decision Height only.

Abort may be initiated by either the UA or the PIC. When Abort is commanded, the UA pitch attitude is set for the best climb angle, the throttle is increased to WOT, bank angle command is set to level wings, and the rudders yaw command is set to 0 degrees while maintaining runway heading.

After Abort is initiated, the PIC may select the following flight modes; Knob, Prgm.

Flare – At a height of approximately 14 meters above the touchdown point, the PIC checks that the UA performed the Flare, and at this point the UA changes its 4 degree glide slope approach, to 1.5 degree slide slope.

Decision Height – The Decision Height applies when the UA is 6.5 meters above the touchdown point. Upon reaching Decision Height, the UA pitches up with low throttle setting, resulting in airspeed deceleration, and a moderate settling down towards the runway.

Decrab – Decrab is applied when the UA height is 3.25 meters above the touchdown point. At this stage the UA heading changes to match the runway direction. If cross wind conditions are present, UA drift is compensated by means of the automatic bank angle input.

Deroll – As described above for Decrab, the UA may be set to a bank angle in order to compensate for crosswind component. The Deroll's main purpose is to force the UA to land with leveled wings on its two MLGs. Deroll is initiated when the UA height is 2.75 meters above touchdown point.

Touchdown – the Touchdown occurs when the WOW signals On Ground, ROC is near 0 feet/min. When touchdown state is present, the UA nose is released down, allowing better wheel traction.

Runway Steering – as the UA runs on the runway, it maintains the centerline via NLG steering.

Braking – When the speed is less than 45 knots, the wheel brakes are automatically applied. The brakes are applied also if the UA range to End Of Runway is less than 300 meters.