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Christman Airfield Safety Training

Colorado State University

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Airport Dimensions and Scope

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- Christman Airfield (ICAO: CO55) is a private airport with a paved 4,000’ runway.
- It sits 11-nm North of Northern Colorado Regional Airport (KFNL).
- The land is owned by Colorado State University. It is operated by the CSU Drone Center and CSU Facilities.
- Christman Airfield is equipped with its own automated weather reporting station which can be viewed here: atmos.colostate.edu.
- Christman Airfield has several waivers issued by the Federal Aviation Administration for sUAS operations…
  - Beyond Visual Line of Sight (BVLOS)
  - High Altitude (699’ AGL)

Airport Dimensions and Scope

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- Christman Airfield serves as CSU's premier UAS testing, flight, training and research site.
- It is owned by the university, but the operations are overseen by the CSU Drone Center Director and CSU Facilities.
- Christman Airfield is open to reservations, pending completion of this safety course, to the following:
  - CSU Students, Faculty, Staff and Researchers
  - Other Institutions Students, Faculty, Staff and Researchers
  - Government Agencies
  - Industry
- The Christman Airfield is **not** open to the general public or for recreational / hobbyist use.

Variable Use of Airport, Manned Aviation

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- Located at the footstep of the Northern Colorado Front Range, Christman Airfield offers a staging ground for fire-fighting operations, especially for helicopters.
- This has been done most recently with the Cameron Peak Fire of 2020, proving as a viable option for manned aviation.
- The airport is published on the FAA Cheyenne Sectional Chart.
- Christman Airfield sees about one to two manned aviation airplanes land at it every year.
  - Its primary purpose is for unmanned aviation and ground testing, which is why safety and situational awareness is **paramount.**

Variable Use of Airport, sUAS Research

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- Christman Airfield offers the unique advantage of being one of the only privately owned airports that operates under an accredited university. This allows for unmatched research opportunities.
- The CSU Drone Center staff serves as the main supervisory group for all operations.
- Researchers and students will have a one-on-one discussion to find a solution to their unique research or projects. This will include safety strategies that must be adhered to, and functioning limitations, if required.

Variable Use of Airport, Ground Vehicle Testing

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- The 4000’ paved runway has multivariate purposes. This includes ground vehicle testing.
- The entire area is gated and fenced around the perimeter, providing an isolated section of straight, paved road.
- In the past, the airport has been used for CSU Police Department to do training, as well as performance benchmarks for automobile researchers and manufacturers.
- The runway has a width of 60’ along its length, with wide aprons on both ends. The soft shoulder extends another 100’ on both sides of the runway to the fence.

Safety at the Airport

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- The multiple uses of Christman Airfield offers great potential to meet the needs of a wide variety of agencies, but this comes with a great need for safety and maintained situational awareness.
- Due to Christman Airfield being published on FAA Sectional Charts, it has a chance of being used as an emergency landing for manned aviation pilots at any time.
- Pilots, researchers, and agents must always be authorized by the CSU Drone Center Director for use of Christman Airfield. **No unauthorized persons or use of the facility is permitted.**

Right of Way

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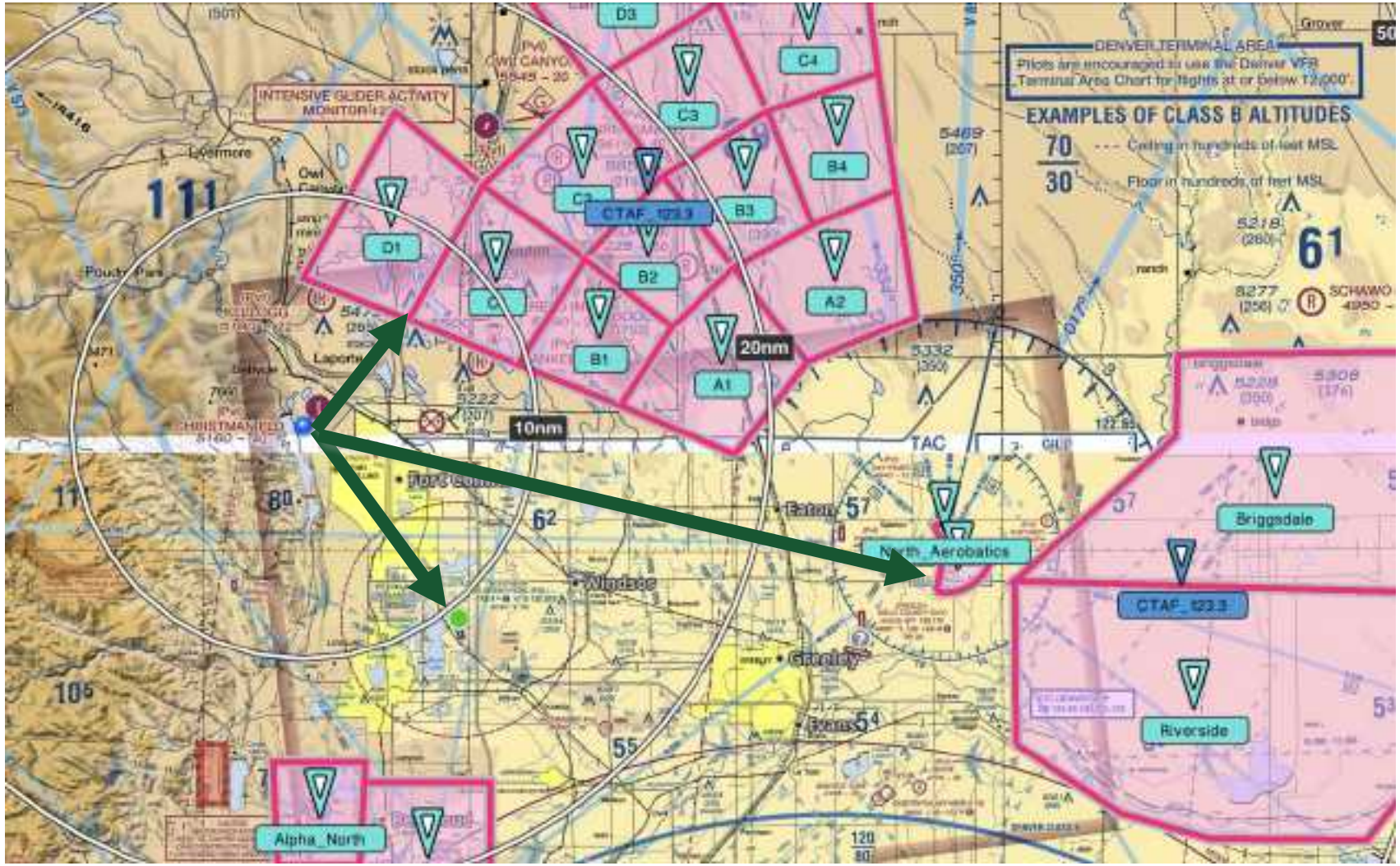
- The general structure for right of way at Christman Airfield is…
  1. Manned aviation pilots in a declared emergency
  2. Authorized manned aviation pilots
  3. Authorized unmanned aviation pilots
  4. Ground vehicles
- You must be always be vigilant for any aviation when at Christman Airfield. When you locate a plane, helicopter, or UAV, you must take appropriate action to avoid a collision.
  - **This could include descending in altitude, ascending or intentionally crashing your UAS to avoid a collision.**
- Ground vehicles must never drive under the path of an unmanned aircraft. Ground vehicle drivers must be aware of all sUAS in flight and stop off the runway to avoid an underpass if necessary.

Manned Aviation Encounters



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- This sectional chart shows Christman Airfield *(at the tail of the arrows)* along with known practice areas for manned aviation *(shown in pink)*.
- This section of airspace is **extremely** popular for new pilots to practice their skills.
- You must be prepared to encounter an airplane or helicopter at any time and yield right of way.

Safety Strategies, Scanning

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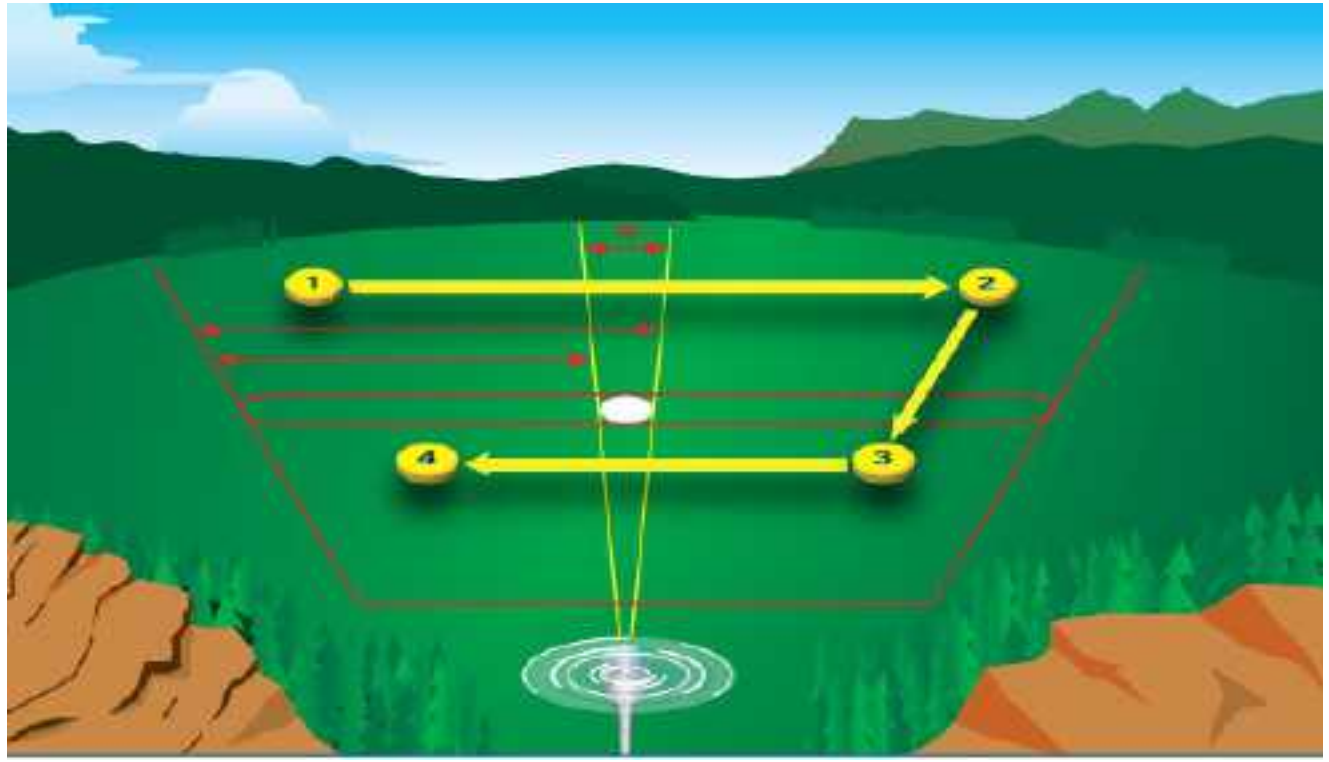
- Proper scanning must be utilized before, during, and after all operation at Christman Airfield.
- Proper scanning is defined from the FAA as, “[beginning at] at the greatest distance an object can be perceived (top) and move inward toward the position of the aircraft (bottom). For each stop, an area approximately 30° wide should be scanned. The duration of each stop is based on the degree of detail that is required, but no stop should last longer than 2 to 3 seconds” (FAA, PHAK Chapter 17)

- In other words, you will scan each section of the sky laterally, about 10° wide for 2-3 seconds, then move onto the next section of sky. Once 360° has been obtained, move down vertically by about 30° and repeat the process. Ensure that you have overlap from section to section.
- Scanning should start before your operation and continue until the conclusion of your activities.



Awareness of Other Activities

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- You may encounter people using Christman Airfield who are checking on equipment that exists on the property.
- You should pay attention to anyone on the property.
- If you are operating a ground vehicle on the property, drive safely and slowly.
- You need to be operating with the utmost situational awareness with what is going on around you.
- Check with people that you see on the airfield. Ensure that your respective operations will not interfere with one another.

Gate Procedures, Closing and Opening

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- Christman Airfield is an active listed airfield with the FAA, such physical security of the site is paramount and mandatory.
- There are two gates at Christman Airfield. Please, only use one gate at a time.
- The West Gate is the default. (See Photo)
- After every entry and exit **you must lock and close the gate behind you. Regardless of day, time, or activity.**
- **Do not leave the gate open for any amount of time during your operation.**
- **Do not simply close the gate, and leave it unlocked. The gate must be closed and locked.**
- No unauthorized persons are allowed onto the premises at anytime.

Gate Procedures, Daisy-Chained Locks

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- The gates at Christman Airfield have two locks on them; a combination lock, and a keyed lock.
- **These two locks must be daisy-chained.**
- Do **not** lock the gates to each lock independently.
- The combination will either be given to you, or a CSUDC employee will assist you with the gate.
- The locks are daisy chained together so that either a combination or a key can unlock it for security purposes.
- When resecuring the gate, ensure that unlocking of either lock will allow for a full range of motion.
- If you fail to daisy chain the locks, you could lock someone else inside or outside of the gate.

Authorized Use

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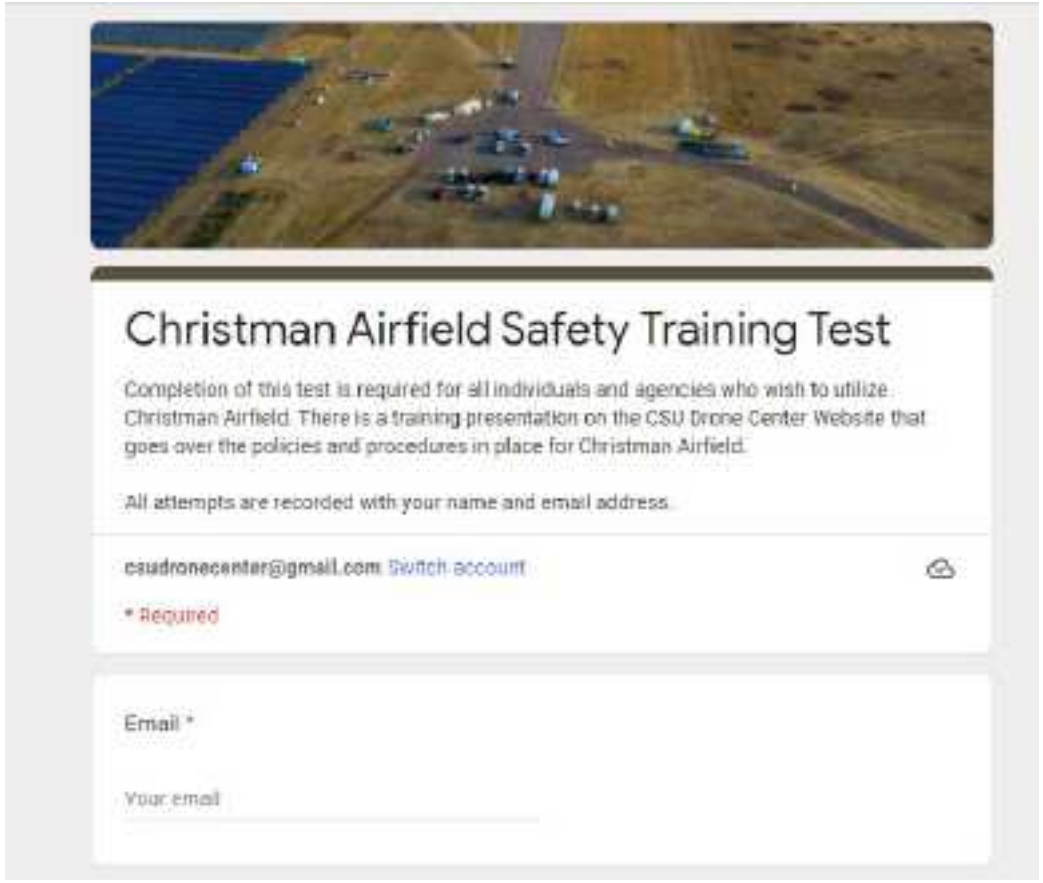
- As a reminder, Christman Airfield is **not** available for use as a recreational or hobbyist flight zone. It serves as a heliport, runway for airplanes, UAS flight, and ground vehicle operational area.
- All operations must be approved by the CSU Drone Center Director and CSU Facilities.
  - Contact information is in the next slide.
- Non-CSU/Researcher Institution UAS operators wishing to use the airfield for UAS flight may need a CSU Drone Center staff member to supervise the airfield operation.
- You must have completed this training and the associated test **before** you submit a reservation request. Please use the same email for both forms.
- Authorization requires at least **48 hours of notice.** Authorization can be done on our website, https://www.research.colostate.edu/csudronecenter/christman-airfield-use/



Questions and Comments

- **Ensure that you complete the test before submitting a reservation**
  - **https://forms.gle/n8YKt4swodqBm1ecA**
- For questions and comments, please contact Christopher Robertson.

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