



Standard Operating Procedure  
(RP.3.1A)

December 2021

## Research and Training Area Policy and Standard Operating Procedure

### SUMMARY

1. Situation. The Director of RELLIS Campus is responsible for information, instructions, and procedures governing the use of Research and Training Areas and Airspace (in accordance with FAA regulations and TAMUS Regulation 02.03.01 RELLIS Campus) operated and controlled by RELLIS Campus Administration.
2. Mission. These procedures establish responsibilities and provide instructions for all organizations operating within the confines of the RELLIS Campus.
3. Execution
  - a. Intent
    - i. All organizations will implement this procedure or any supplementary germane instructions directly related to RELLIS Research and Training Areas (RTA) not necessarily contained or enclosed herein.
    - ii. Personnel operating within RELLIS Campus RTAs will operate in a safe manner, preserving life, equipment, and natural resources. RELLIS will be managed in a way that maximizes safe, effective training and testing/experimentation opportunities for all who use the RTAs (resident or visiting organizations).
    - iii. All personnel will use Operational Risk Management (ORM) during all planning and execution stages of operations.
  - b. Concept of Operations. The Associate Director for Operations, in concert with the RELLIS Director, will establish and provide operating procedures to be distributed and organizations utilizing RELLIS RTAs shall review and adhere to procedures. All utilizing RELLIS Campus will bring to the attention of the RELLIS Operations Center (ROC) and using organizational chain of command through established procedures the existence of, or potential for, any unsafe operation or working condition.
  - c. Coordinating Instructions
    - i. Guidelines. These procedures govern the use of the RELLIS RTAs. It specifies responsibilities, gives descriptions of available areas for testing, experimentation and training, provides instructions on how to reserve areas, and defines safety regulations for all operations, including ground and air operations, pertaining to the RELLIS Campus.
    - ii. Resources. The procedures are based on operational and training experiences as well as safety considerations. They have been developed in a manner allowing organizations to use resources of the RELLIS Campus efficiently and achieve training and research goals while ensuring an acceptable level of safety precautions are met. Safety considerations are paramount.

- iii. **Safety.** Safety is the responsibility of every individual at all times, and is a key factor in success in all activities. Concerns for safety should never be limited to the Research or Training event itself and should always include associated activities like movement to and from training/test site or post event cleanup.
  - iv. **Accidents and Incident Reporting.** RELLIS Operations Center will be kept informed of any accident or incident that constitutes a serious or significant event which may require notification to the Chancellor, Texas A&M University System (*e.g. incident requiring ambulatory services, significant damage to Campus property, or threat to people or property*).
  - v. **Recommendations.** Organizations utilizing RELLIS RTAs are encouraged to submit recommendations concerning improvements or changes to the RELLIS Operations Center (Associate Director for Operations).
4. **Application.** These Procedures apply to all organizations and activities granted authorized use of the RTAs and Airspace. For questions, contact the RELLIS Operations Center (Associate Director for Operations, [bhall@tamus.edu](mailto:bhall@tamus.edu)).

Kelly Templin  
Director, RELLIS Campus

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**Record of Change**

<b>Change Number</b>	<b>Date of Change</b>	<b>Description of Change</b>	<b>Change Made by:</b>

## CHAPTER 1 – General

The procedures prescribe the general requirements, limitations and safety precautions to be taken while conducting activities within the RELLIS experimentation, testing and training complex. The experimentation, testing and training range complex (Known as the Research & Training Areas- RTAs) consists of the land space designated as ranges, aviation and ground experimentation and testing areas.

### 1. Purpose and Scope

- a. Purpose. The primary purpose of this document is to establish procedures which will guide and support the execution of safe experimentation, testing and training on the RELLIS Campus.
- b. Scope. Organizations operating on RELLIS will utilize, maintain, and have access to their organizational standard operating procedures and documented safety procedures while conducting activities within the RTAs. The RELLIS SOP is a document providing instruction and basic guidelines for the safe execution of activities on RELLIS Campus.

### 2. RELLIS Research and Training Area (RTA) Overview

- a. The space designated as ranges, aviation and ground experimentation and testing Areas are depicted in figure 1. Anyone who is responsible for the execution of an event and all drivers transiting to RTAs will have an understanding of the locations within the RELLIS RTA.
- b. All experimentation, testing and training areas will be referred to as RTA in this document to include named ranges and experimentation/test areas such as Innovative Proving Grounds (IPG), Ballistic Aero-Optics Materials Test Range (BAM) and firing ranges.
- c. The RELLIS Reservation System will be utilized to schedule use of all RTAs on RELLIS Campus. Further information can be found in Chapter 3 Scheduling of this document.



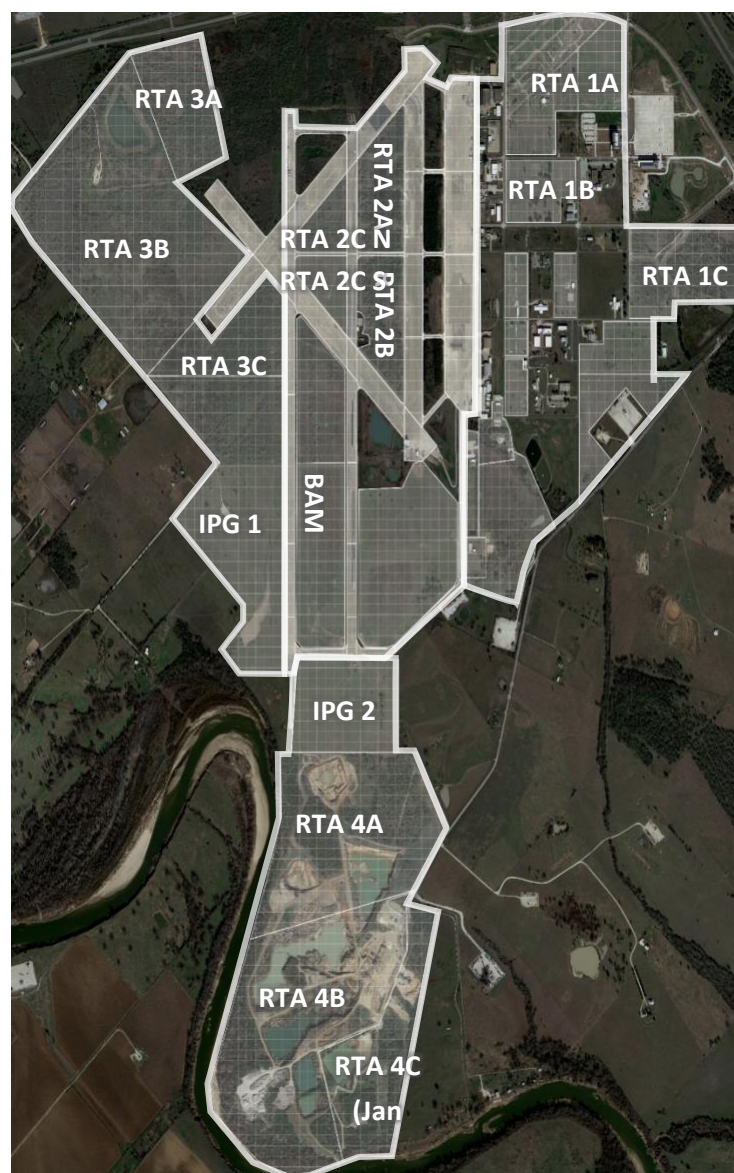
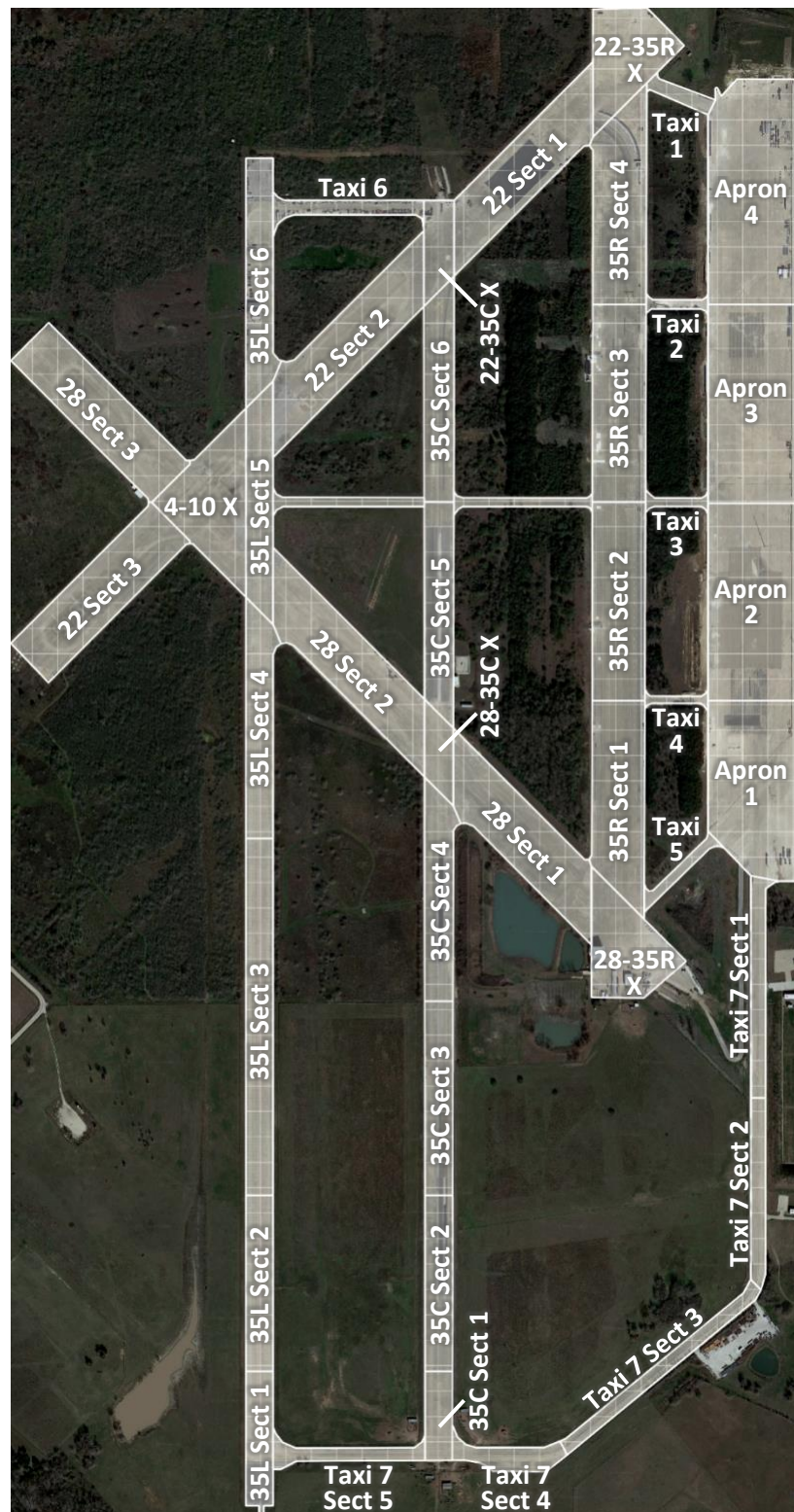


Figure 1 RELLIS Research and Training Areas

3. Responsibilities (See Organizational Chart Annex E for reference)
- a. The RELLIS Associate Director for Operations
    - i. Plans, coordinates, and supervises the development, modernization, maintenance, and operation of the RELLIS Campus RTAs.
    - ii. Establishes and updates policy, guidance, oversight, assignments, and scheduling procedures for the use of all RELLIS RTAs.
    - iii. Publishes and updates appropriate directives, messages, and correspondence concerning all RTAs, airspace, and their required support.
    - iv. Conducts continuous reviews of RELLIS complex and established Texas A&M University System (TAMUS) policies to facilitate safe operational environment.
    - v. Programs for operational support for RTA modernization, maintenance and repairs in coordination with RELLIS tenant organizations, and other agencies as required.
    - vi. Serves as the central point for scheduling, operations control, and range safety. Facilitates coordination for all activities conducted within the RTA and adjudicates any scheduling and prioritization issues.
  - b. Chief, RELLIS Operations Center (ROCC)
    - i. Provides scheduling, safety, and command and control services in support of organizations utilizing the RELLIS Complex. The Operations Center is located on RELLIS Campus in Building 8081, 1484 Avenue A, Bryan, Texas 77807.
    - ii. The ROCC maintains and manages scheduling of all activities within the RTAs through the use of the online RELLIS Reservation System.
    - iii. The ROCC is responsible for implementation of the RELLIS RTA safety program.
    - iv. Maintains and updates files of current, historical, active and inactive usage data of the RTA complex.
    - v. Provide Individual in Charge/Safety Officer Information Safety Briefs to include:
      - 1. Installation training complex facilities;
      - 2. Installation procedures for signing for opening/closing ranges, training areas and training facilities.
      - 3. Communications requirements for operations center.
      - 4. Medical Evacuation (MEDEVAC)/Casualty Evacuation (CASEVAC) procedures (ANNEX F).
      - 5. Reporting criteria and procedures for environmental issues and other serious incidents.
  - c. Officer in Charge (OIC)/ Principle Investigator (PI)/Test Conductor (TC) (**These are roles/responsibilities not intended to be specific billets or job positions**)
    - i. Every activity conducted within the RTAs will have someone in charge during the execution of the activity. The person in charge or succession of personnel in charge must be assigned in writing and submitted to the RELLIS Operations Center via attachment to organizations reservation in the Scheduling System. The person in charge will ensure: A safety brief is given to all personnel participating in activities associated within the RTA; all safety equipment and personnel, if required, are on hand prior to start of scheduled activity; maintain capability to request emergency support at all times and at any time where there is a loss in the ability to request emergency support will cease all activities until the means to communicate is re-established.
    - ii. Establish all control measures (signs, barriers or road guards if required) for the Surface Danger Zone (SDZ)/Weapons Danger Zone (WDZ)/target area (Impact Area)/Test Area are in place, enforced, and supervised to prohibit entry by unauthorized personnel/vehicles.

- iii. Develop Risk Management (RM) procedures for all phases of activities in accordance with this SOP and their organization's equivalent. A type written RM worksheet/matrix signed by using organization leadership/authorized persons will be submitted with a reservation request to RELLIS Operations via the scheduling system and will be kept on hand by the OIC/PI/TC. If it is a third party submitting a RM, the host organization must also sign off on the RM to account for any additional risk not known by the submitting party.
- iv. The OIC/PI/TC will be onsite during the execution of the entirety of the activity (There should always be someone in charge at the Test/training area.
- v. Responsible for accountability of personnel and equipment for their activity while operating in the RTA.
- vi. Responsible for meeting all reporting requirements as determined in ANNEX D to include occupying the scheduled RTA, commencement and ending of activity, and departure from the RTA. The OIC/PI/TC will ensure the cleanup and repair (if required) of the RTA prior to checking out of the RTA with RELLIS Operations Center.
- d. Safety Officer (SO)/ Safety Coordinator (SC)
  - i. Every organization will identify someone responsible for safety during all activities within the RTAs (ex. Lead instructors, test director or OIC). The SO/SC is responsible for the enforcement of applicable safety regulations contained in this SOP, Texas A&M University System directives, and other applicable field, technical, and ordnance publications.
  - ii. Will ensure compliance with organizational safety standards and remain vigilant during the execution of activities observing for unsafe situations to prevent injury or destruction/damage of property.
  - iii. The SO/SC must be assigned in writing and submitted to the RELLIS Operations Center via attachment to organizations reservation in the Scheduling System.
  - iv. Ensure that the Test Area remains clear of unauthorized personnel, vehicles, and any aircraft prior to and during execution of activities. As applicable, ensure road guards and air observers are properly positioned, equipped, and briefed in their duties and assignments. When applicable, secure all barriers, ensure all signs and gates are checked and secured as required. If road guards are being used, SO/SC will ensure proper communications are established and maintained between the road guards and air observers during the event.
  - v. Ensure personnel within designated Research/Test Areas wear proper personal protective gear as required (ear plugs, eye protection, etc. as identified by the using organization).
  - vi. Maintain communications with RELLIS Operations Center and ability to dial 911 at all times. **When communications are lost to emergency services, cease all activities until communications are reestablished.**
  - vii. Ensure all safety equipment identified by the using organization in their submitted risk assessment is onsite to include a designated safety/emergency vehicle and/or medical personnel as required for the activity.
  - viii. Will attend the RELLIS RTA Safety Training (brief/video) and will incorporate any risk factors into their risk assessment/matrix and daily safety briefs to personnel conducting activities. The RELLIS Safety Training can be found on the RELLIS Website.

#### 4. Safety/Risk Management

##### a. Safety

- i. Safety is the responsibility of every individual, at all times, and is a key factor in successful completion of any activity. Concerns for safety should never be limited to the event itself, but should always include associated activities as well; including any movement to and from the event, maintenance/cleanup activities, etc.
    - ii. Any individual who observes an unsafe condition shall report the location and condition immediately to their supervisor and to RELLIS Operations Center. Any event affected by the unsafe condition shall be halted until the unsafe condition has been corrected.
    - iii. Effects of live fire or any experimentation/testing must be contained within designated impact areas or scheduled test areas. Associated surface danger zones (SDZ)/weapon danger zones (WDZ) will be submitted for all nonpermanent firing ranges or demo ranges.
    - iv. Safety policies and procedures of using organizations or instructions contained in references from operating manuals (eg. Field, technical or operators Manuals) will be followed during execution of activities on RELLIS.
    - v. For organizations who don't have safety policies for planning an example of the Texas A&M Engineering Experiment Station's Project Safety Analysis guide for developing a project specific safety plan can be found in ANNEX C.
  - b. Risk Management
    - i. Operational Risk Management (ORM) ORM is a decision making process that enhances operations and through risk reduction. Risk management and risk assessment are formal, essential tools for planning successfully. It is a method for identifying hazards, assessing risks, and implementing controls to reduce the risks associated with any and all operations or training events. Successful implementation of the ORM process will increase operational effectiveness while minimizing unnecessary loss of assets, both personnel, and material.
    - ii. An operational risk matrix/worksheet will be utilized for every activity within the RTA and be submitted/attached to the RTA reservation request. The matrix must be approved by the requesting organization prior to execution of the activity. See Appendix 1, ANNEX C.
    - iii. Daily prior to the execution of any test, demonstration or event, a pre-operations huddle with all involved individuals shall occur reviewing the risk assessment form providing each person an opportunity to speak, providing a venue to voice concerns or suggestions. This function is to elevate the awareness of hazards that may seem mundane but if not thought of or addressed could cause catastrophic consequences. A record of each huddle shall be maintained as part of the test, event or operations file documents and are subject to RELLIS EHSD spot checks.
    - iv. For recurring activities (e.g. crash tests), a new risk assessment is not required unless there is a change to the activity or personnel responsible for conducting the activity and risk assessment changes. A review of the recurring activity risk assessments must be done every six months from submission and a new risk assessment submitted annually.
5. Access to RTAs
- a. Access to RTAs is limited to only those with a need to be in the RTA for work related to research, testing or training. This is to ensure the safety and security of campus operations. Organizations will maintain access rosters for all personnel that work inside the fence line or require access to RTAs. A copy of the access rosters will be provided to RELLIS Operations and CIO for use in managing swipe access at the gates. Anyone



without swipe access will need to be escorted by their sponsor. To gain visitor access, a visitor request form will be submitted and signed by the sponsor, who is assuming responsibility for the individual or individuals. A sponsor is anyone who has access to the RTAs and has been given authority by their organizations to assume responsibility of visitors. RELLIS Administration will issue visitor badges based on organizations recommendation of escorted or unescorted access.

- b. All persons within an RTA or behind the runway area fence line must be on an approved access roster for a facility or activity being conducted. The roster of approved personnel for an event where an RTA is being reserved should be included in the reservation, and submitted no later than 24 hours prior to the execution of the activity. The organization conducting the activity will be responsible for all associated with the event. For Construction firms requiring access for their employees, they will coordinate with RELLIS Administration entrance procedures for their project.
  - c. For unescorted access to the RTAs, individuals will contact RELLIS Administration to receive the link for requesting access. The information will be used for a due diligent review through the TAMUS/TAMU SSO office. Individuals requesting unescorted access with an existing security clearance verified in JPAS will be fast tracked.
  - d. Vehicle access. All security gates will be kept closed and locked. The combination and codes for access will be treated as sensitive information and tight control should be used by authorized users- do not share combinations. No vehicle will be operated beyond a gate without a responsible individual with gate access or an individual with an approved RELLIS visitor badge. It is the responsibility of the using organization to ensure all individuals at their event or work space are authorized to be there. As stated in an earlier paragraph, event and access rosters will be maintained and submitted to RELLIS prior to an event/activity. Personally owned vehicles authorized to be in the RTAs will have an Authorized Vehicle Placard displayed on their dashboard while operating in the RTAs. Vehicle Placards will be issued to visitors who meet access requirements. For RELLIS permanent personnel, resident organizations are authorized to use their vehicle placards.
6. Accidents and Incident Reporting
- a. Accidents and mishaps will occur on a range or in the RTA (i.e. vehicle accident, fall, trip, laceration or near miss/hit). The primary focus will be taking care of any injuries and caring for our students, faculty and workers. ALL incidents, accidents and Near Misses/Hits Shall be reported to the RELLIS Administration. It is recognized that there are two lines of communication for notification for the majority of the operations, tests or events on the RELLIS- first is the using organizations chain of command and with co-reporting to the RELLIS Administration via RELLIS Operations Center or RELLIS EHS. **For all emergency support services dial 911 (police, fire, ambulance).** For further information see ANNEX C, Appendix 3 and 4.
  - b. For incident/accident reporting, the primary reporting method is through the web base application ORIGAMI: [Origami Risk - Texas A&M University System, Office of Risk Management](#). All TAMUS organizations will use the TAMUS incident reporting system (Origami). For incidents/accidents involving non-TAMUS organizations the sponsor TAMUS organization will report the incident using the non TAMUS employee function within Origami. TAMUS organizations should contact their safety officer for additional guidance on use of Origami. If the incident or accident causes injury or property damage utilize the Submit an Incident tab of ORIGAMI if the event resulted in a Near Miss/Hit use the Submit a Safety Concern tab. ANNEX C, Appendix 4 for additional information such as reportable information.
7. Medical Evacuations see ANNEX C, Appendix 3.

8. Fire Danger and Ratings see ANNEX C, Appendix 5.
  - a. The ROC will update fire conditions daily or more frequently as needed. All OIC/PI/TCs are responsible to track and take appropriate fire control actions as fire conditions change. Dial 911 for all fires, regardless of size or location within RTAs and immediately report to RELLIS Operations Center. At no time will an organization place personnel in danger or harm's way in an effort to fight fires. All organizations operating in the RTAs during peak fire season/high fire condition will have an evacuation route and plan in place. Fire Danger levels will be posted on the RELLIS Website.
  - b. Catalytic converters and vehicle/aircraft exhausts can get hot enough to catch fire to nearby ground cover/grass. Do not leave the engine running while parked during high fire rating periods. All activities involving motor vehicles or explosive devices will have a fire extinguisher on hand during execution of scheduled activities within the RTAs.
9. Destructive Weather Warnings and Conditions
  - a. Storms are a potential and continuous threat to the RELLIS Campus. Adequate and timely warning, coupled with prompt and effective actions by all, will reduce loss of life and damage to property due to destructive weather conditions. RELLIS Operations Center will monitor and notify all organizations in the RELLIS RTA Complex of impending destructive weather. A notification to cease all activities and seek shelter will be given at that time. OIC/PI/TCs are required to have a destructive weather plan when operating during forecasted weather periods. . The current proximity for seeking shelter is 8 miles for lightning, this distance shall be used as a guide to sheltering decisions for other types of severe weather hail, tornado etc.. The RELLIS Administration will provide notices but the responsibility for tracking and responding appropriately to impending severe weather lies with the PI or senior controlling individual on site.
10. Heat Conditions
  - a. Atmospheric (weather) conditions should always be a consideration during planning and included in Risk Management decisions for an event.
  - b. The atmospheric conditions will be measured periodically and serve as an on-site, general guideline to the organization's OIC/PI/TC and SO/SC throughout the event. When a hazardous heat stress condition exists, every precaution should be taken by the OIC and SO to mitigate the hazard, to include but not limited to: seeking shade, increased water breaks/rest periods, reduction or cessation of activity.
11. Privately-Owned Vehicles (POV). Privately-owned recreational vehicles, such as three and four-wheeled, all-terrain vehicles, dirt or trail bikes, mountain bikes, dune buggies, go-carts, and any regular four-wheeled vehicles are not authorized within any RELLIS RTA without approval of the RELLIS Operations Center. All authorized POV's will have displayed in their windshield a vehicle authorization placard issued by RELLIS Administration or sponsor TAMUS organization.
12. Points of Contact
  - a. Associate Director Operations: 979-317-1047
  - b. RELLIS Operations Chief: TBD
  - c. RELLIS Environmental Safety and Health Manager: 317-458-1008

## CHAPTER 2 – RESEARCH AND TRAINING AREA OPERATIONS

### 1. General

- a. Experimentation, testing, firing ranges and training areas (Research & Training Areas-RTA) are established by the Director, RELLIS Campus. When organizations are the primary users of a particular area, they do not inherit title to those areas, and possess no authority to modify the nomenclature, purpose, or design of any range. Recommendations to improve areas and facilities should be submitted to the RELLIS Operations Center (ROC).
- b. ROC personnel are authorized access to all areas and facilities for the purpose of inspection and investigation at all times. These personnel will not disrupt organizational activities unless necessary to perform their duties. Organizations will not interfere with these personnel in the performance of their duties. For any closed testing or other activities with restricted access, ROC personnel will notify the sponsor organization if they need access to the area.
  - i. Safety is paramount, and organizational safety guidelines associated with scheduled activities will be utilized at all times.
  - ii. All RTAs are "Off-Limits" to personnel and organizations except when scheduled properly in the RELLIS Scheduling System or when authorized by the RELLIS Operations Center. For instances like site visits to gather information for test planning, organizations will coordinate with the ROC prior to their visit. Having access to the RTAs meaning you can enter through gates does not mean you are authorized in RTAs without prior coordination with the ROC.
  - iii. Deviations from the prescribed use of RTAs are not authorized without approval from the RELLIS Operations Center. Deviations will be submitted via the RELLIS Scheduling System at the time of reservation request.

### 2. Establishment of RTAs

- a. Only the Director, RELLIS Campus can establish RTAs. No other individual or organization will establish new RTAs, or alter existing RTAs or facilities except with prior approval of the Director, RELLIS Campus. This does not preclude organizations trying to improve the success of their experimentation or testing as well as enhancing ranges after being granted permission from RELLIS Operations Center, assuming all safety precautions are observed. All organizational enhancements-emplaced must be removed upon the completion of activity.
- b. Recommendations to improve RTAs are invited, and shall be provided by formal letter to the Director, RELLIS Campus.
  - i. Modification of RTAs
    1. Requests for minor modifications to areas and facilities, such as fencing, minor erosion control efforts, road improvements, vegetation management, and small construction/repair projects shall be submitted to the ROC. This includes any construction of test sites within the RTAs
    2. Project submission must include complete justification based on a requirement/standard, (Equipment or Performance Manuals, Recognized Programs of Instruction, etc.) duration and frequency of use projections. A submission will address the following:
      - a. Identified Requirements
      - b. Current situation
      - c. Impacts if known
      - d. Consideration of alternatives
      - e. Analysis of deficiency

- f. New RTAs or major alterations may require an environmental impact study.
- 3. Maintenance and Operation of RTAs
  - a. Maintenance of Areas. The maintenance of RTAs will be accomplished by RELLIS. No other organization or individual is authorized to perform maintenance on any RTA or facility unless the work is first approved by the Director RELLIS Campus.
  - b. Organizations (OIC/PI/TC or SO/SC) will report all RTA maintenance issues and other problems to RELLIS Operations Center and by submitting a written comment/report at the conclusion of activities. Other requests for repairs of existing RTA facilities can be submitted by email memorandum to RELLIS Administration.
  - c. Organizations are responsible for all damage incurred to RTAs or facilities associated with their activities. If damage to or poor police of an RTA is observed upon arrival, the OIC/PI/TC or SO/SC must notify ROC immediately. Failure to report damage/poor police problems will be considered as having assumed responsibilities for all damages/poor police problems by the using organization.
  - d. RELLIS Operations personnel will not disrupt organizational activities in the performance of these duties unless coordinated with the OIC/PI/TC or SO/SC; using organizations will not interfere with those personnel as they conduct normal inspections/safety surveys. RELLIS Operations personnel will conduct random inspections of RTAs and training facilities, and all structures to verify safety of operations and police of RTA. For areas with closed testing, notification will be provided to the sponsor organization prior to any ROC personnel visits.
- 4. Notification of Activities. Notification of commencement of activity must be done prior to start of activity utilizing the RELLIS Reservation System or phone call to the ROC if the system is down.
- 5. Restrictions
  - a. Unauthorized persons are not allowed within any RTA. Personnel not specifically scheduled to be on RTAs and facilities are not authorized.
  - b. The use of chemical devices will be used strictly in a manner associated with the event- i.e. supporting TEEX ILEPSE training. Notify the ROC at the time of use.
  - c. Digging is not authorized on any RTA except in areas authorized or with approval from ROC. All holes must be filled in after the activity/event.
- 6. Communications
  - a. Organizations must maintain communication with the ROC during all training/testing being conducted on this Complex. Cell phone is the primary means of communication with ROC and secondary will be radio via handheld device (radio or cellular push to talk).
  - b. A radio network is available on RELLIS Campus for use with handheld radios. Organizations on RELLIS are expected to provide their own radios and RELLIS will assign talk groups as required for operations.
  - c. All organizations operating on RELLIS using the RF spectrum in any way must submit a frequency request to the RELLIS Operations Center for the RELLIS CIO's approval and coordination. Additionally the frequencies being used during an event or activity must be included in the reservation request.
- 7. Safety Equipment. All prescribed safety equipment (as determined) by using organization must be on hand at the time of the activity. The OIC/PI/TC or SO/SC must ensure all safety/mitigation



measures, as identified in their operational risk analysis submitted at the time of reservation, are in place. OIC/PI/TC or SO/SC must have a copy of the reviewed, signed, and approved ORM Worksheet onsite for that scheduled RTA.

8. Barricades and Road Guards. Using organizations are responsible for closing the approaches to the test site created for their activity. In many cases, barricades, gates, and appropriate warning signs are adequate. It is the OIC/PI/TC or SO/SC responsibility to ensure that all barriers, signage and if needed, road guards are in the correct position to prevent anyone from inadvertently entering a test area. If isolation of a test site is required it will be spelled out in the reservation request and with a barrier plan. Contact the ROC for routing instructions to transit the RELLIS RTA complex. At the end of an activity it is the organization's responsibility to remove barriers and signage.
9. Vehicles. The Vehicle speed limit in the RTA on paved surfaces is 30 mph unless part of a training activity or test. Non TAMUS marked vehicles will have a RTA vehicle placard on the dash of the vehicle when operating in the RTAs. In keeping with the access policy, organizations are responsible for identifying who is authorized to have a vehicle in the RTAs. Report all unauthorized vehicles to the ROC. Resident organizations are authorized to use their existing vehicle placards and will forward their list authorized vehicles for the access to the RTAs.
10. Cleanliness of RTAs
  - a. Cleanliness of RTAs is the responsibility of the using organization. All solid waste brought to the RTAs – including cardboard, wrapping materials, food waste, etc. - shall be removed and disposed of in approved containers or established landfills. Trash will not be buried. The practice of stockpiling refuse for removal later is not permitted without specific authorization from RELLIS Operations. An inspection by RELLIS Operations personnel may be required prior to departure.
  - b. A walk through will be conducted of RTAs with using organizations prior to start of activities. If an RTA is not clean upon occupation of the using organization, notify the ROC of the situation so the new user will not be held responsible for the RTA. When an area is found by RELLIS Operations personnel to be in a poor state of cleanliness, the last known using organization will be notified to return to the RTA to address.
  - c. Do not deposit trash in dumpsters not belonging to your organization, i.e. contractors/construction companies.
  - d. Disposal of materials (wood, scrap metal, and plastic items) will be using organizations responsibility. Utilities Energy Service (UES) can be contacted for support at <https://utilities.tamu.edu>.
11. Research and Training Areas - see ANNEX B, RELLIS RTA Map.
12. Public Affairs and RTA Operations
  - a. Any visits to RTAs and training facilities must be coordinated through RELLIS Operations. If an organization desires media coverage of an activity, coordination must be made with the RELLIS Campus Administration at least 72 hours in advance for both internal and external media coverage.
    - i. All special events involving visiting dignitaries or individuals of notoriety require notification to the RELLIS Administration at least 72 hours in advance of the visit.
    - ii. Test/Training accidents can be high visibility and attract public interest. The public has a right to know about accidents and incidents. However, procedures must be followed to ensure the rights and privacy of personnel involved are not

denied, an investigation is not hampered by release of speculative or unrelated remarks, and the information presented to the public is as factual as possible.

1. In the event of a mishap (accident/incident), personnel must refrain from making comments, answering questions, or engaging in speculation with all members of the media. If approached by a member of the media, personnel involved must refer the question or questions to a Texas A&M University System PAO representative. If there is no PAO representative present, personnel shall firmly and politely reply with "I will refer your query/question to the Texas A&M University Public Affairs Office".
2. At no time shall excessive force or abusive language be directed against the news media representative. Separation of news media representatives and personnel involved in the accident or incident shall be accomplished through traffic control points or by sealing off the mishap site to prevent unauthorized release of information. Keep in mind a camera does not need to be focused directly on its subject and video cameras and tape recorders will pick up audio signals quite clearly from a distance.

## CHAPTER 3 – SCHEDULING

### 1. General

- a. RELLIS Operations Center (ROC) is located in the RELLIS Campus Building 8081 at 1484 Avenue A, Bryan, Tx 77807, and serves as the sole scheduling agency for the RELLIS Campus.
  - i. Normal hours of operation for the ROC are 7:30am to 4:00pm Monday through Friday. For after hours, special arrangements can be made with the Chief of the ROC.
  - ii. The RELLIS Reservation System is the approved TAMUS Research/Training Area (RTA) scheduling and management tool. To schedule an area for training or testing the ROC must receive a reservation request in the RELLIS Reservation System.
  - iii. Access to the RELLIS Reservation System can be established by submitting a 'User' request via <https://reservations.rellis.tamus.edu>. For assistance contact the ROC via email–operations@rellis.tamus.edu. Expect one to two business days for account processing and approval.
  - iv. If there is a technical reason for not being able to access the RELLIS Reservation System, a RTA reservation request with the following information (organization, area for reservation, date/time and brief concept of operation) may be submitted to the ROC using the following methods; as an e-mail attachment, or hand delivered to the ROC.
  - v. The latest a reservation request can be submitted is 1200 the day prior to the event for recurring users. For a new activity or user the latest a reservation request can be submitted is 72 hours prior to the event/activity. Same day scheduling is by exception only and must be coordinated through the ROC.
- b. Modifying or Canceling. Once an RTA (air or ground) has been scheduled, it is the responsibility of the organization scheduled to use the RTA/facility to conduct its activity during the allotted time period. Organizations will monitor the request status within the Reservation System and acknowledge any communications from the ROC as RTA status may change. To modify a reservation time, the organization must modify their reservation in the system and notify the ROC of their changes. Cancellation of scheduled events should be executed through the reservation system by the requesting organization. **There is no reason to schedule an area then not use it without notifying the ROC.**

### 2. RELLIS Reservation System - For a quick user reference, see ANNEX D.

### 3. Scheduling

- a. Named areas/facilities (i.e., known distance firing ranges or construction equipment training area) must be scheduled in the RELLIS Reservation System. For assistance in scheduling contact the ROC.
- b. RTAs and facilities may be used by more than one organization, on the same day if scheduled and deconflicted by using organizations. Co-using is encouraged for maximum utilization of RTAs and facilities. Organizations desiring co-use of an RTA/facility will conduct internal coordination and are required to submit a plan and risk matrix detailing the operations/activities of using organizations. All using organizations must submit a reservation request in the system with annotated coordination for ROC final approval. All reservation requests must be submitted 3 days for new users or 24 hours for recurring users prior to the event; if the request is not received prior to the deadline, co-use will automatically be denied.
- c. A reservation request for ground and aviation testing/training will include:

- i. A narrative and schematic/diagram describing the activity
  - ii. A surface danger diagram for any live fire, munitions testing, or demolition not on an established range
  - iii. A barrier or road guard plan as required to prevent access to the area
  - iv. Any prior coordination related to the activity should be described in the narrative if it is critical to the execution of the activity. Co-use coordination is the responsibility of the scheduling organization.
  - v. Assigned Risk Matrix (see Appendix 1, ANNEX B for example)
  - vi. For airspace requests users must submit a drone application form online at <https://www.tamus.edu/business/risk-management/uas/uas-application/>.
- 4. Scheduling Precedence. Scheduling precedence is based on the priority level of each organization and the subsequent reservation request submission date. Priority organizations are those who have areas where they are the predominate user (i.e. TEEX ILEPSE for the known distance firing ranges, TTI for the Apron area, TEEX ITSI for the construction equipment area and electrical training areas).
- 5. Checking Out/Checking In RTAs
  - a. The OIC/PI/TC can check out RTAs or facilities from ROC starting at 1200 the day prior to the scheduled event. RTAs not checked out an hour after the scheduled event will be cancelled and recorded as a no-show.
  - b. Prior to checking out any RTA or facility, the OIC/PI/TC or SO/SC must have attended the ROC safety brief, have a current, signed RELLIS Safety Card in their possession, and be on the organization's current Certification Letter. Using organizations will certify all individuals have received the RELLIS Safety Brief. The safety brief can be found on the RELLIS website.
  - c. Using organizations checking in and out the range may do so using the reservation system or by contacting the ROC. As part of the RELLIS commitment to quality service, using organizations are requested to submit a RTA after action report concerning the quality, police, and maintenance condition of the RTA, via the RELLIS Reservation System as an attachment within 24 hours of completion of the activity. This will assist ROC in identifying maintenance problems or any enhancements as early as possible so they can be resolved.

## CHAPTER 4 – UNMANNED AIRCRAFT SYSTEMS (UAS)

### 1. References:

- a. 24.01.07 Texas A&M University System Unmanned Aircraft Systems (UAS) Policy
- b. 14 CFR § Part 107
- c. 14 CFR § Part 91
- d. AC 107-2, Small Unmanned Aircraft Systems (sUAS), which contains 14 CFR part 107 guidance.
- e. Pilot's Handbook of Aeronautical Knowledge (PHAK)
- f. FAA DroneZone - Unmanned Aircraft Registration
- g. Temporary Flight Restriction (TFR) listing
- h. Notices to Airmen (NOTAM)
- i. Federal Aviation Administration Aeronautical Information Services
- j. Federal Aviation Administration (FAA) Joint Order 7110.65, Air Traffic Control

### 2. Introductions

- a. Purpose. The RELLIS Campus UAS SOP provides the means to synchronize and coordinate all UAS operations occurring on RELLIS campus, to enable safe integration of multiple airspace users operating in the airspace above and surrounding RELLIS campus, and to ensure all UAS operators have the proper credentials, authorizations, and approvals to conduct planned flight operations on the campus. Any UAS operations that use RELLIS Campus for launching, landing, and/or UAS support operations for recreational purposes, training, research, development, testing, or evaluation of UAS aircraft, sensors, or system components require prior approval under this SOP, and must coordinate the scheduled mission date(s) in the RELLIS Reservation System (RRS). Agencies who require regular, recurring operations may seek initial approval of their UAS concept of operations (CONOPS) under this SOP, then refer to their approval number when scheduling all future operations in the RRS. This SOP is a tool to ensure airspace safety and compliance, not to encumber users from accomplishing their mission goals and objectives.
- b. Authorities. Personnel performing Unmanned Aircraft Systems (UAS) operations at RELLIS Campus shall adhere to this SOP. A physical copy (i.e., hard copy or electronic copy) of this SOP is required at all operational sites. Prior to participating in UAS operations, all personnel will read and understand the contents of all directives cited.
- c. Applicability. This document addresses procedures unique to UAS operations at RELLIS Campus and does not replace or override the procedures described in any applicable FAA regulations, technical orders, technical manuals, publications and/or approved FAA Certificate of Authorization or Waiver (COA). In cases where this SOP differs from FAA UAS regulations, technical orders, technical manuals, publications and any approved FAA COA(s), the user will ensure the RELLIS approval acknowledges the deviation when seeking approval.
- d. Responsibility. The overall responsibility and authority for this SOP is the RELLIS Campus UAS Approval Authority (RCAA). As the RELLIS Campus Staff representative, the RCAA is charged to strictly enforce the guidance in this SOP. The RCAA is the approval authority for any exceptions to this guidance.

### 3. Flight Operations Procedures

- a. Overview. Agencies or users requesting to operate UAS on RELLIS Campus will submit their UAS flight operations plans, including their CONOPS and any FAA Certificate(s)

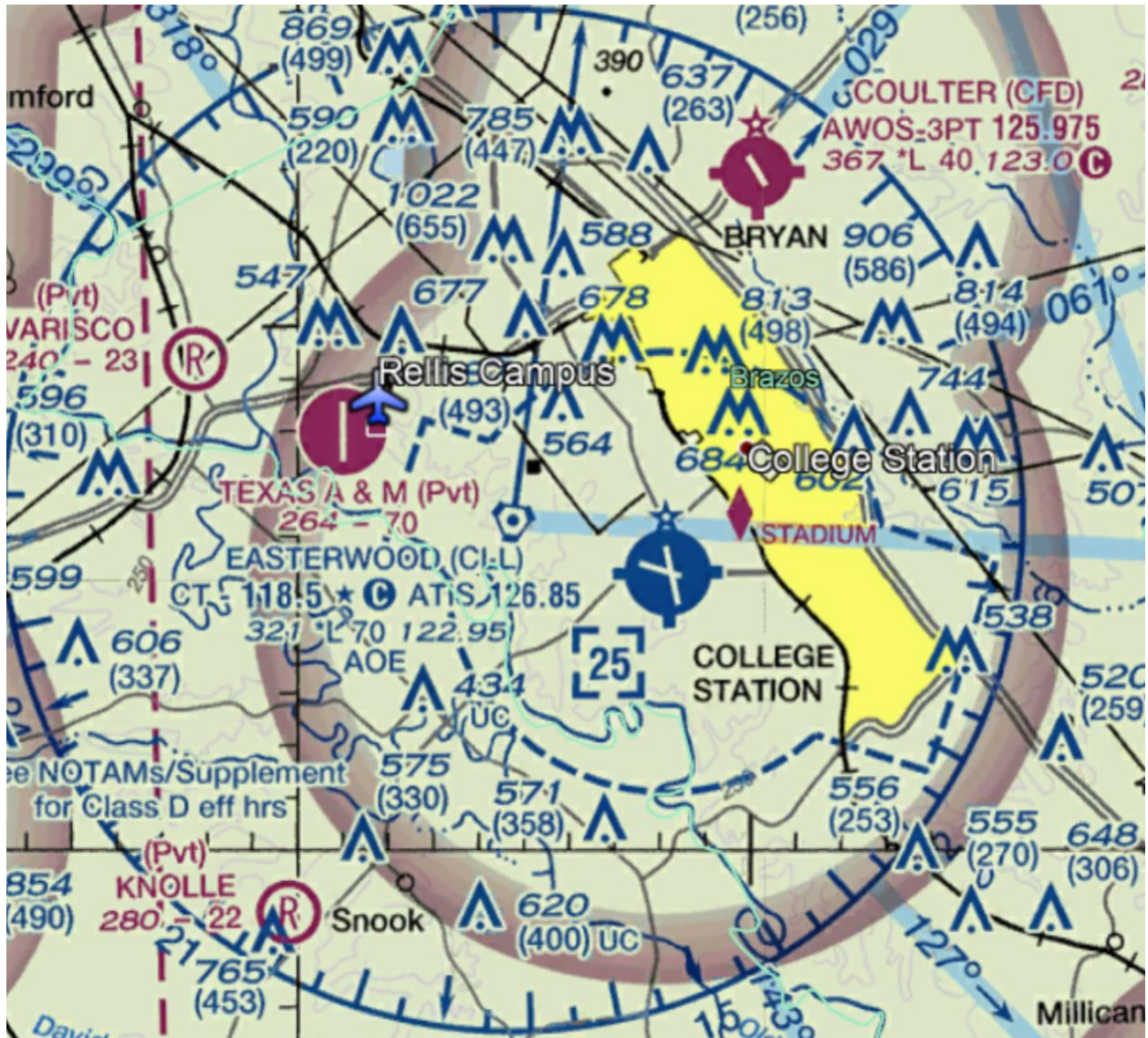
of Authorization, copies of all intended pilot certifications and licenses, aircraft specifications, and any prior approvals from the TAMUS UAS approving authority, to the RCAA to receive a mission approval number. The RCAA will ensure the planned operation meets all TAMUS UAS policy requirements (see Reference A), all FAA requirements and approved FAA COA(s), and the provisions of this SOP. Organizations may request blanket approvals to preclude recurring approval for identical flight mission CONOPS, but must schedule each flight operation in the RELLIS Reservation System to deconflict or co-use the requested airspace for the planned flight operation dates and times. When conducting a UAS operation under a blanket approval number, the agency shall cite the initial approval number when scheduling the planned flight operation in the RRS.

b. Airspace

- i. RELLIS campus falls under all standard provisions of the United States Federal Aviation Administration (FAA) National Airspace System (NAS) and must comply with all rules and regulations applicable to UAS operations in the NAS. RELLIS airspace does not fall under the provisions of any special use airspace categories.

1. Figure 1 provides a VFR Sectional view of the RELLIS campus. The sectional view establishes the airspace over RELLIS campus as Class G, uncontrolled airspace, extending from the surface to 700' Above Ground Level (AGL). Any UAS flight operations intending to fly into the Class D airspace extension associated with Easterwood Airfield (CLL), indicated by the blue dashed line immediately to the southeast of RELLIS campus, must contact Easterwood Tower and comply with the provisions of 14 CFR §107.41 and §107.43, and/or operate under FAA Low Altitude Authorization and Notification Capability (LAANC) rules associated with CLL.





2. Figure 2 displays the property boundaries of RELLIS campus. The airspace associated with these property boundaries is not restrictive in nature and serves to inform where any users intending to use RELLIS property for any ground based operations such as UAS launching, landing, Ground Control Station (GCS) operations, or any other UAS support requirements must comply with this SOP and the RRS. RELLIS does not “own” the airspace above the campus and cannot restrict or limit any flight operations or aircraft from directly overflying the campus. As a result, all UAS operations occurring at RELLIS campus must also maintain awareness of the surrounding airspace to yield right-of-way to any manned aircraft as required by 14 CFR §107.37. Users may request assistance from the RCAA in submitting a Notice to Airmen (NOTAM) to advise other air traffic of UAS operations planned to occur on/over RELLIS campus.

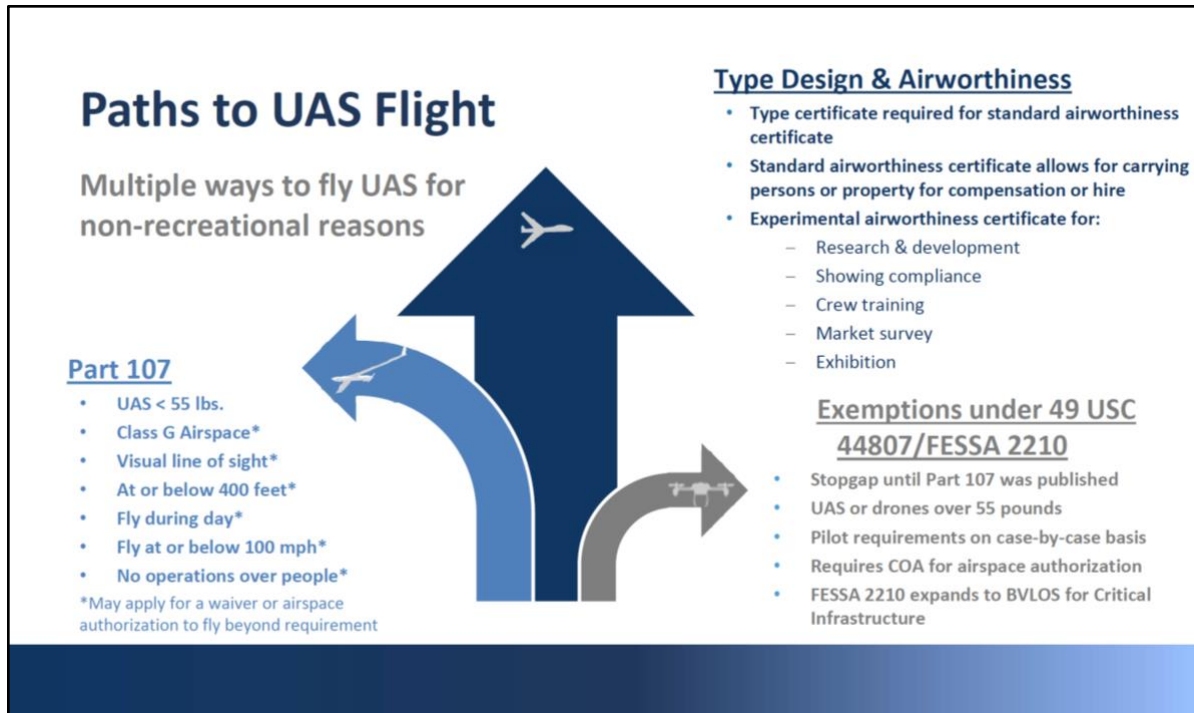




**Figure 2. RELLIS Campus Boundaries**

- c. Application of FAA Rules for UAS
  - i. The current FAA regulatory environment categorizes UAS into two sizes: small (UAS weighing less than 55 pounds) and large (UAS weighing 55 pounds and above). Applicants must declare whether they intend to operate under standard rules as a civil aircraft, or if they have additional authorizations as entitled through the allowances of a Certificate of Authorization or Waiver (COA), 44807 Exemption, or public aircraft operation. When seeking authorization to fly UAS on RELLIS campus, operators shall provide any existing authorization document(s) to the RCAA for consideration in the approval process. Depending on user requirements and aircraft specifications, agencies conducting UAS flight activity on RELLIS campus will generally operate under one of the set of rules outlined below. The following diagram may aid users understanding which set of FAA rules applies to their specific use case and aircraft design.





**Figure 3. Overview of UAS Flight Authorizations.**

1. 14 CFR §107 “Small UAS Rule”. UAS operated under “Part 107” are governed by a broad spectrum of commercial and government uses for drones weighing less than 55 pounds. Highlights of the rule are included in ANNEX B, with detailed information found on the FAA website.
2. Part 107 Certificate of Authorization and/or Waiver. Part 107 waivers, or a COA, is an official document issued by the FAA which allows specific drone operations not allowed under part 107. These waivers allow drone pilots to deviate from certain rules under part 107 by demonstrating they can still fly safely using alternative methods. An overview of Part 107 waivers and how to apply for a waiver can be found on the FAA website at this address: [https://www.faa.gov/uas/commercial\\_operators/part\\_107\\_waivers/](https://www.faa.gov/uas/commercial_operators/part_107_waivers/).
3. Civil versus Public UAS Operations. 49 USC §40102 defines civil and public aircraft operations. As a state government entity, Texas A&M University has the ability to operate unmanned aircraft as public aircraft as defined in 49 USC §40102(41)(C) by petitioning the FAA for a public COA. Under the provisions of a public COA, the operating agency can self-certify the airworthiness of aircraft owned by the agency to allow for operations exceeding the limitations of Part 107, depending on the specific provisions of the public COA granted by the FAA. University agencies desiring to petition the FAA for a public COA or attempting to enter into a 90-day lease agreement with a civil entity to enable public operations of an aircraft under the provisions of a public COA can contact the Lone Star UAS Center of Excellence to assist with this process.
4. UAS Operations for Aircraft Weighing 55 Pounds or Greater. To fly an unmanned aircraft that weighs 55 pounds or more, and where the application of a public COA is not available or desired, operators may

apply for an exemption under the Special Authority for Certain Unmanned Systems (49 U.S.C. §44807). Additional information on this program can be found here:

[https://www.faa.gov/uas/advanced\\_operations/section\\_333/how\\_to\\_file\\_a\\_petition/](https://www.faa.gov/uas/advanced_operations/section_333/how_to_file_a_petition/). For agencies seeking a special airworthiness certificate to conduct UAS operations exceeding the limitations of Part 107, the following link provides the FAA policy regarding this process: [https://www.faa.gov/documentLibrary/media/Order/FAA\\_Order\\_8130.3\\_4D.pdf](https://www.faa.gov/documentLibrary/media/Order/FAA_Order_8130.3_4D.pdf).

#### 4. Air Crews

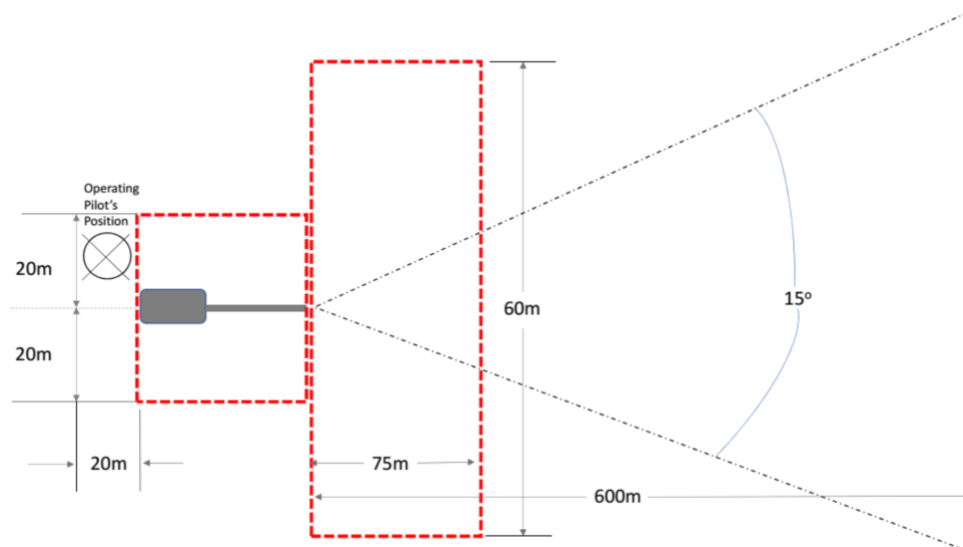
- a. Operator/Mission Commander. The overall authority for planning, coordinating, and executing a UAS flight operation. The mission commander must ensure all FAA requirements, aircraft and mission parameters, and requirements of the SOP are satisfied. The mission commander has final authority for the initiation of flight operations, and must ensure all aircraft operate safely in the NAS at all times.
- b. Pilot/RPIC. The FAA certified pilot of an unmanned aircraft who maneuvers the aircraft flight controller, or programs the aircraft autopilot and monitors aircraft performance during autonomous flight operations.
- c. GCS Operator. A crewmember who operates and manages the ground-based hardware, software, antennae, and other components of the UAS required to control an unmanned aircraft and its payloads and sensors.
- d. Range/Aviation Safety Officer. The RSO/ASO ensures safe operation and compliance of a UAS by ensuring adherence to all regulatory, standards, and procedural guidance. The RSO/ASO also supervises all VO/SC personnel to ensure safe integration of an unmanned aircraft in the NAS.
- e. Launch/Recovery/Maintenance Crew. Ground support personnel who perform assembly, inspection, maintenance, services, and quality control checks of all aircraft and ground support equipment required to conduct UAS flight operations.
- f. Sensor/Payload Operator. A crewmember who operates and monitors aircraft payloads and sensors to enable the UAS to accomplish its intended mission.
- g. Visual Observer (VO)/Safety Coordinator (SC). A crewmember that assists the UAS pilot in the duties associated with collision avoidance. This includes, but is not limited to, avoidance of other traffic, airborne objects, clouds, obstructions, and terrain. The VO must fulfill all requirements outlined in FAA regulations and authorizations, and must maintain dedicated open-communications with the PIC during any UAS operations.
- h. UAS Payload. All aircraft sensors must be documented including a description of what the payload is with a brief capabilities' breakdown. If the sensor changes the aircraft configuration, the operator must provide an amended airworthiness application and a description of the modifications.

#### 5. UAS Flight Operations

- a. UAS flight operations are conducted in accordance with FAA rules and standards as outlined in section 4.3.
- b. Use of Checklists. Personnel operating on the range must have an applicable checklist for the make and model of UAS being operated, and/or for the specific duty(ies) being performed. Checklist may be hardcopy or digital but must be present and accessible throughout all operations. The checklist should be provided to the RCAA when seeking approval for flight operations. The UAS operator will maintain communication with the Ground Control Station (GCS) to continually monitor system status and health, and to

maneuver the UAS as required by the planned mission while maintaining visual line of sight. Where Beyond Visual Line of Sight (BVLOS) is allowed by COA or waiver, the operators must provide VOs to monitor the operating airspace to alert of potential air incursions on the aircraft flight path. (Encl 2 ANNEX B has example of pre/post flight checklist)

- c. Communications. Throughout flight operations, all aircrew members must maintain open instant communication throughout the launch sequence, flight activity, and landing. A push-to-talk handheld radio is an example of an open-communications device, but a cell phone requiring the user to dial a phone number is not, unless the line remains open throughout the duration of the UAS operation from pre-launch to landing. Two-way radio contact is continuously maintained with ground observers, VOs, and air traffic control (ATC) as required during missions.
- d. Launch and recovery operations: Launch and recovery operations for UAS are conducted in accordance with (IAW) approval received from the RCAA and IAW the UAS Operator's manual. The type and design of the air vehicle (AV) will dictate the RRS requirements for a launch and recovery zone (LRZ), which must be scheduled for UAS operations where an LRZ on RELLIS campus is required. For example, a Vertical Takeoff and Landing (VTOL) aircraft may only require a single grid to access the reserved airspace, whereas a pneumatic launched/belly land fixed wing aircraft may require multiple grids to accommodate the unique takeoff and landing characteristics of the AV. For non-VTOL aircraft, the operator must submit an LRZ diagram supported by an LRZ Safety Zone diagram to ensure adequate safety and clearance of the area during takeoff and landing of the AV.



**Figure 4. Example of an LRZ Safety Zone diagram.**

- e. Aircraft Navigation. UAS operators may perform aircraft navigation autonomously by programming the aircraft autopilot, or through direct control by the UAS Pilot/RPIC and remote flight controller.
- f. Designated altitudes:
  - i. Part 107 - Surface up to and including 400' AGL.
  - ii. COA/Waiver – Surface up to and including the provisions of the waiver. For all operations above 400' AGL, the operator must advise Easterwood Tower of the

operation in order to allow the tower to alert other airspace users flying in the vicinity of RELLIS campus.

6. Weather Limitations

- a. All UAS operations on RELLIS campus will comply with 14 CFR §107.51 plus the following requirements to ensure a safe operating environment for all flight operations.
  - i. All aircraft on RELLIS campus will operate under visual flight rules (VFR) and must receive a weather briefing that specifies a minimum of 3 statute miles visibility with a minimum of 1000 foot ceilings. For flight operations authorized to fly greater than 400' AGL, the aircraft must remain 500' below the briefed ceiling at all times.
  - ii. Reported winds must not exceed the known wind limitations of the aircraft. The aircraft operator's manual must specify wind limitations. If not specified, the maximum wind limits will be restricted to 15 knots from any direction, with wind gusts up to 20 knots.
  - iii. Aircraft will not be flown in known or forecast thunderstorms, or with lightning forecast within 10 miles of RELLIS campus.
- b. All UAS operators are required to provide all weather limitations of the aircraft being used for the approved mission.

7. Air Traffic Control (ATC) Procedures. Flight operations exceeding 400 feet AGL must contact Easterwood Tower to advise of the flight operation to allow the tower to advise other aircraft of the UAS operation. Operators must adhere to any communication requirements outlined in approved FAA COAs or Waivers.

8. UAS Lighting and Visibility Requirements. Unmanned aircraft will have FAA approved lighting and/or high visibility markings to enable simultaneous multi-aircraft operations and deconfliction. Large UAS must have FA approved lighting, no exceptions. Small UAS that cannot accommodate lighting due to size, weight, or power concerns must have high visibility markings, such as bright reflective tape, and will not be authorized to conduct night operations.

9. Communication Procedures

- a. PIC/GCS external communications.
  - i. External communications allow RELLIS operations to communicate with all range users, to synchronize simultaneous efforts, communicate advisories and severe weather updates, and to coordinate simultaneous use of airspace for UAS operations.
  - ii. The minimum communications equipment required by a UAS operator is one VHF handheld radio and one cellular phone. It is the responsibility of the UAS operator to ensure all forms of communication have adequate battery power and signal strength to facilitate reliable communications.
  - iii. Agencies who do not have a VHF radio may check-out a handheld radio from RELLIS operations.
- b. PIC/GCS internal communications.
  - i. Internal communications allow all UAS crewmembers and support personnel to communicate internal activities, flight activities, and airspace deconfliction measures.
  - ii. The minimum communications required for internal communications are reliable cellular phone communications. During flight operations in which BVLOS operations occur, communications with all VOs must be open and continuous while the aircraft is airborne. Flight crews may use cellular phones to fill this

requirement, but the lines must be open to enable instant alerting of any potential aircraft incursions during the conduct of the flight. Requiring a VO to dial the PIC/GCS, wait for answer, then alert the pilot of an incursion does not meet the intent of open and continuous communications for Detect and Avoidance purposes.

#### 10. Emergency Protocol Lost Link and Contingency Management

- a. Emergency procedures are accomplished IAW the UAS operator's manual. If the emergency condition(s) preclude returning to the launch/recovery location, land as soon as possible to the nearest safe location. If the aircraft is equipped with a parachute landing system, the flight crew should attempt to deploy the parachute as closely to the reserved LRZ area as possible. In all cases, the flight crew should attempt to move to the location of where the anticipated emergency landing will occur, and alert any non-participants of the landing as soon as practical.
- b. For all missions, UAS operators must provide a lost link plan where the aircraft maneuvers to a predetermined location within the RELLIS campus Class G airspace area and hovers or orbits while the aircrew attempts to regain aircraft control by re-establishing the control link. The preferred lost link location for Fixed Wing aircraft is the southern area of the RELLIS campus as depicted in Figure 2. For VTOL aircraft, the preferred lost link protocol requires the aircraft to hover over the scheduled LRZ grid area(s). In the event aircraft control cannot be restored, the aircraft should conduct a ditching procedure in the southern area of the RELLIS boundaries as depicted in Figure 2 for FW aircraft, or to the planned LRZ as scheduled in the RRS for VTOL aircraft. All operators should ensure their aircraft have a safe-to-ditch procedure and equipment installed on their aircraft, such as a Flight Termination System (FTS) or a Ballistic Recovery System, such as a parachute landing device.
- c. Lost Visual Contact of AV:
  - i. If a Visual Observer (VO) loses visual contact of the AV, the Pilot in Command (PIC) must be notified immediately.
  - ii. If the UA is visually reacquired, the mission may continue. If not, the PIC must immediately initiate the return to base procedures, requiring the aircraft to return to the pre-planned LRZ.
- d. In the case of a "fly-away" condition, the PIC and/or GCS operator will immediately notify Easterwood Tower with the following information:
  - i. UAS type and description of the aircraft.
  - ii. Nature of emergency and last known location.
  - iii. Last known AV heading, altitude, airspeed, and endurance remaining expressed in hours and minutes of usable fuel or battery power remaining to burn-out, e.g. 7 hours and 10 minutes to burn-out).
  - iv. If the AV contains a FTS, the aircrew should attempt to locate the aircraft by any means, including use of the CLL radar, then execute the flight termination procedure once the aircraft is over an uninhabited, low consequence area.

#### 11. Local Area Restrictions and Requirements

- a. All UAS must meet the requirements per this SOP and approved FAA COA.
- b. While operating at RELLIS Campus all flight outside of the cantonment area boundary will be conducted IAW the approved FAA COA and this SOP.
- c. UAS with an approved waiver for night operations will maintain aircraft lighting requirements IAW the Certificate of Waiver.
- d. On departure and landing, the PIC will ensure the intended touch down point is clear of personnel, obstacles, and hazards to flight.

## 12. Scheduling

- a. The PIC or designated representative will coordinate flight operations times with the RCAA IAW the RRS.
- b. The PIC will ensure the requested reservation is approved and appropriately annotated in the RRS prior to initiating flight operations.
- c. UAS users must ensure they have reserved necessary ground space required to launch and recover the UAS, as well as the airspace required to conduct the desired UAS operational activity.
- d. Any UAS directly supporting air-ground operations must be included in the overall reservation as required by the RRS. In other words, reservation of a ground area does not automatically include the associated airspace unless properly selected and annotated in the reservation.
- e. Multiple Use Airspace Considerations.
  - i. To ensure safety of co-use of RELLIS airspace, the maximum number of simultaneous air operations is three, not including any isolated air-ground co-use operations where the UAS supporting the ground operation remains below 99' AGL.
  - ii. Simultaneous FW or horizontal flight UAS operations will occur using a "stack" technique, in which the RCAA can authorize up to three one-hundred-foot layers of airspace to provide separation between simultaneous aircraft operations: 100-199' AGL, 200-299' AGL, and 300-399' AGL or above, if allowed by the operator's COA. This situation is primarily aimed at accommodating multiple FW aircraft that cannot maneuver within the confines of the RRS grid system. When multiple rotary wing VTOL aircraft are operating simultaneously, they will normally deconflict by reserving separate blocks of airspace through the RRS. When both FW and rotary aircraft are operating simultaneously, the rotary aircraft will normally operate at lower altitudes, while the FW aircraft will operate within a higher layer of airspace. In all cases of simultaneous aircraft operations, the RCAA will carefully manage each situation and may require each flying agency to conduct a meeting to ensure proper deconfliction and integration of all operations.
  - iii. Any UAS supporting air-ground operations must remain below 99' AGL commensurate with the reserved land area unless the user specifically reserves a higher layer of dedicated airspace.
  - iv. Anytime simultaneous air operations are occurring, each flying agency must fulfill all prescribed communications requirements listed above.
  - v. Users reserving higher layers of airspace must ensure their aircraft does not "fly through" the flight path of a lower layer user. The RCAA reserves the right to change reserved land areas to accommodate airspace deconfliction and to prevent potential fly-through or over events. The RCAA may also emplace lateral as well as horizontal boundaries to deconflict multiple air operations.

## CHAPTER 5 – WEAPONS, AMMUNITIONS, AND EXPLOSIVES

### 1. General

- a. Firing of all direct fire weapons, indirect fire weapons, explosives/demolitions, lasers devices, and all other training devices must conform in all respects to appropriate surface danger zones (SDZ) and weapon danger zones (WDZ) for that weapon system/ammunition.
- b. Any research, experimentation, new weapons, ammunition/ordnance being tested and foreign weapons, training devices, will be clearly explained in the reservation request with included risk matrix. The organization must provide ROC with safety documentation from the manufacturer or using organization prior to conducting any live-fire or the use of that device/equipment. The size of explosive charge to be detonated will be reviewed on a case by case basis to ensure the test or experiment does not exceed the capability on RELLIS.

### 2. Transportation, Handling, and Storage of Weapons, Ammunition, and Explosives

- a. General. The Publication of Federal Explosives Laws and Regulations (ATF P 5400.7) governs policies and procedures associated with the use, storage, and accountability of ammunition and explosives.
- b. Qualified Drivers. Drivers of any vehicle transporting ammunition or explosives aboard RELLIS Campus will be a licensed driver and be in good medical condition which will be enforced by using organization.
- c. Vehicles. Using organizational vehicles should be used whenever possible to load, store, or transport ammunition, pyrotechnics, or explosives of any kind for testing or training. All transportation of munitions and explosives by commercial vendors will have the validated documentation authorizing the transport and should be bonded.
- d. Explosive Ordnance Disposal- Report to ROC if support is required.

### 3. Ammunition

- a. Ammunition and explosives (to include pyrotechnics) will be positioned to minimize potential for ignition from external sources, explosion, rapid burning or sympathetic detonation and will be located, staged, and stored in accordance with the requirements of the current edition of Publication of Federal Explosives Laws and Regulations (ATF P 5400.7) for compatibility and safe separation distance. A&E shall be staged to best minimize the effects of weather. Ignition sources such as matches, lighters, or other spark producing items will not be located near ammunition, pyrotechnics or explosives. Fire extinguishers and/or firefighting equipment will be maintained near the A&E. A&E must also be protected from the hazards of Electromagnetic Radiation Emission Control to ordnance such as squibs, blasting caps, igniters, and similar explosive devices that are particularly susceptible to initiation when exposed to radio frequency fields.
- b. Research & Training evolutions requiring ammunition and/or explosives (A&E) to be staged must be staged in areas that are temporary in nature. Ammunition staged on a RTA must be positioned in a manner ensuring the required explosives safety quantity distance for the net explosive weight of A&E present does not exceed the RTA boundary. A&E must be safeguarded at all times while on the RTA particularly while it is awaiting use for a particular event. All temporary storage plans outside existing range use will be briefed to RELLIS Administration for Approval.
- c. Demolitions
  - i. The routine use of high explosive demolitions will be confined to demolition ranges (RTAs) and specially prepared pits. Use of demolitions to simulate supporting fires or IEDs, when authorized, is limited to the use of 2-pound explosives or less. All organizations must have a plan in place to fill in and level

out all holes and remove all Demolition /Explosive debris from the RTA such as steel/concrete/wood and properly dispose of it.

- ii. OIC/PI/TC or SO/SC will ensure positive means to keep personnel at safe distances to protect hearing and prevent injury from fragmentation or inadvertent/premature detonation. All non-participating or observing personnel will either be outside of the SDZ of the demolition pit during firing of live explosives or in a protected area from the effects of the explosion.
- iii. OIC/PI/TC or SO/SC will ensure all personnel are wearing personal protective equipment to include hearing and eye protection.
- iv. All demolition operations must go into “CHECK-FIRE” during Thunderstorm Condition 1 and if an unscheduled aircraft flies near or over the assigned ETA.



## CHAPTER 6 – ENVIRONMENTAL

1. General. Environmental laws are applicable to RELLIS Campus to the same extent as the general public. Responsibility for compliance with environmental laws extends to organizations operating on the Campus. Federal and State agencies may impose significant penalties or restrict operations due to environmental violations. Compliance with environmental regulations ensures RELLIS Campus remains a complex for research and training.
2. Purpose. The protection and enhancement of our natural environment is a valuable tool in sustaining the mission of RELLIS Campus. The intent of this chapter is to inform users of RELLIS campus RTAs about their responsibility to protect the natural environment, stressing the important role each individual plays in ensuring no net loss in the capability of Campus lands to support the mission of RELLIS Campus. Compliance with Federal and state laws, regulations, and TAMUS policies related to integrated natural and cultural resource management with the RELLIS mission will sustain our research and training capability as well as maintain healthy, natural ecosystems.
3. Laws, Policies, and Plans
  - a. In an effort to preserve the environment, it is required that all users comply with all State and Federal environmental statutes, regulations, executive orders, and mandates, as well as consistently execute all relevant plans.
  - b. Any violation of environmental laws can incur civil and criminal fines and/or incarceration.
4. Planning Considerations
  - a. When planning use of RTAs, it is essential to consider environmental restrictions to ensure successfully achieving research or training objectives while complying with environmental laws and regulations.
  - b. The following activities are prohibited activities on all ranges and training areas:
    - i. Burying, dumping, abandoning, or disposing of munitions, solid waste, trash, rubbish or garbage.
    - ii. Unlawfully discharging of oil, fuel, and other hazardous substances from vehicles, equipment or storage tanks.
    - iii. Killing, injuring, or harassing wildlife. Killing poisonous snakes and other wildlife in self-defense is not prohibited.
    - iv. Removing or intentionally destroying vegetation or cutting and removing trees and limbs is prohibited without approval from the Director, RELLIS Campus.
  - c. Prohibited Areas
    - i. Designated historical/archeological sites
    - ii. Wetlands
    - iii. Installation restoration clean-up sites (contaminated sites)
    - iv. Restoration and erosion control work areas. These areas will be marked with appropriate warning signs and fences.
    - v. Areas marked off with orange markers, signs, or fences.
5. Hazardous Materials, Refueling, Spills, and Spill Response
  - a. Federal and State storm water regulations require facilities to implement an operation and maintenance program that includes an employee training component and has the ultimate goal of preventing or reducing pollutant runoff from operations. Preventing spills of materials and wastes is a significant component of complying with these regulations. However, even with the best prevention efforts, spills may still occur. When they do, it is up to organizations personnel to respond quickly and effectively to clean-up the spilled

material or notify someone who can. All organizations shall develop site specific individual Spill Response and Prevention Plans. These plans are to address any spills from minor below the reporting thresholds for each designated chemical used i.e. 25 gallons is the reportable quantity of petroleum released on the ground and any quantity that creates a sheen on water [Spills: Reportable Quantities - Texas Commission on Environmental Quality - www.tceq.texas.gov](#). The plan should be kept in a central location that is easily accessible for employees.

- b. Storage
  - i. Hazardous materials must be stored in approved, closed, and properly labelled, leak-proof containers. All hazardous material storage containers, to include fuel bladders, tanker trucks, refueling capable vehicles, fuel pods, and 55 gallon drums, must be stored within properly sized and impermeable secondary containment.
    - 1. Procedures implemented to prevent hydrocarbon fluid spills;
    - 2. Control measures installed to prevent hydrocarbon fluids from entering a water source or storm drain
    - 3. Countermeasures
- c. Spill Response. Units are responsible for initial response and clean-up. To effectively respond, units shall maintain spill kits appropriately sized and configured for their training activity (5 gal Bucket of sand/litter, garbage bags, shovel, brooms, etc.). All hazardous material spills within an RTA must be immediately reported to the ROC. The ROC will notify TAMUS response for spills 25 gallons or greater of hydrocarbon fluids. For lesser spills, users will clean up and can drop their garbage bags of contaminants at the RELLIS Administration building for disposal.

Please direct questions or feedback to:

**Brad Hall**

RELLIS Operations Manager

[bhall@tamus.edu](mailto:bhall@tamus.edu)

979-317-1047

## ANNEX A: AVIATION

### APPENDIX 1. CODE OF FEDERAL REGULATIONS (CFR) PART §107

#### 1. Operating Requirements

- a. When you are manipulating the controls of a drone, always avoid manned aircraft and never operate in a careless or reckless manner.
- b. You must keep your drone within sight. Alternatively, if you use First Person View (FPV) or similar technology, you must have a visual observer always keep your aircraft within unaided sight (for example, no binoculars).
- c. Neither you nor a visual observer can be responsible for more than one unmanned aircraft operation at a time.
- d. You can fly during daylight (30 minutes before official sunrise to 30 minutes after official sunset, local time) or in twilight with appropriate anti-collision lighting.
- e. Minimum weather visibility is three miles from your control station. The maximum allowable altitude is 700 feet above the ground.
- f. Maximum speed is 100 mph (87 knots).
- g. You currently cannot fly a small UAS over anyone not directly participating in the operation, not under a covered structure, or not inside a covered stationary vehicle.
- h. No operations from a moving vehicle are allowed unless you are flying over a sparsely populated area.
- i. You can carry an external load if it is securely attached and does not adversely affect the flight characteristics or controllability of the aircraft. You also may transport property for compensation or hire within state boundaries provided the drone, including its attached systems, payload and cargo, weighs less than 55 pounds total and you obey the other flight rules.

#### 2. Registration

- a. Operators/RPIC flying under Part 107 must register each drone they intend to operate. If your drone weighs less than 55 lbs., you can use the [automated registration system](#) in the FAA's Drone Zone.

#### 3. Pilot Certification

- a. To operate the controls of a small UAS under Part 107, you need a current remote pilot certificate, or be under the direct supervision of a person who holds such a certificate. A copy of the RPIC/Operator's FAA Certification along with currencies must be provided to the RCAA. If the RPIC/Operator is a FAA Part § 61 certificated aviator and has received their Part § 107 certification must also provide a copy of their bi-annual flight review.

#### 4. UAS Certification

- a. You are responsible for ensuring the UAS is safe before flying, but the FAA does not require small UAS to comply with current agency airworthiness standards or obtain aircraft certification. For example, you will have to perform a preflight inspection that includes checking the communications link between the control station and the UAS.

#### 5. Other Requirements

- a. If you are acting as pilot in command, you must comply with several other provisions of the rule:
  - i. You must make your drone available to the FAA for inspection or testing on request, and you must provide any associated records required to be kept under the rule.
  - ii. You must report any operation that results in serious injury, loss of consciousness, property damage of at least \$500.00 to the FAA within 10 days.

APPENDIX 2: RELLIS AVIATION MANAGEMENT SYSTEM (RAMS) CERTIFICATION CHECKLIST

ITEM	DESCRIPTION	REQUESTOR	RELLIS
1	<b>Review and verify completion of the items on this checklist for final approval to fly/operate on the RELLIS campus.</b>		
2	<b>Review NDA, Master Service Agreement, and RELLIS Scheduling are complete</b>		
3	<b>Copy of Previous Certification:</b> Previous certification history is useful in determining a baseline for the current certification.		
4	<b>Proof of U.S. Registration:</b> In the United States, the pink copy of the FAA Form 8050-1 can be used for this purpose. UAS located outside the United States, require an official document (referred to as a fly-wire) issued by the FAA registration branch. Another acceptable method is to search the FAA registration database at <a href="http://registry.faa.gov/UASinquiry">http://registry.faa.gov/UASinquiry</a> . If you find the UAS information listed, print that page and consider it proof of registration. If foreign UAS, title trust is required with RELLIS (exception is a US-based division).		
5	<b>Noise Standards:</b> If the UAS has a U.S. type certificate and has not been substantially modified to the extent that there is an acoustical change, it meets the noise requirements of FAR Part 36.		
6	<b>Fuel Venting:</b> FAR Part 34 applies to UAS gas turbine/hybrid engines. If an UAS has a U.S. type certificate, it complies with this requirement.		
7	<b>Airworthiness Directives:</b> Provide a summary showing the status of all airworthiness directives (AD's) in chronological order by AD number.		
8	<b>Airworthiness Limitations (AWL):</b> AWL are an FAA approved means of introducing certain inspections or maintenance practices to prevent problems with certain systems. They can be in the form of an Airworthiness Limitation instruction (ALI) or Critical Design Configuration Control Limitation (CDCCL). A list of AWL's required can be found in the manufacturer's maintenance planning document, or other documentation referenced on the type certificate data sheet (TCDS). A summary sheet should be prepared that shows when the CMR's were accomplished and when they are next due.		
9	<b>Major Alterations – Special Airworthiness Certificates:</b> Must show that any major alterations or modifications were accomplished in compliance with FAA-approved data and that the UAS conforms to its type design requirements. Experimental or Special Airworthiness Certificates, manufacturers service bulletins, or other data approved by the FAA on an FAA Form 8110-3 are examples of FAA-approved data. Keep in mind that you must have a right to use letter from the owner of the STC before it can be installed.		

10	<b>Approved Flight Manual Currency:</b> Before an UAS can be certificated, it must have an up-to-date approved flight manual (AFM). The UAS manufacturer will be able to provide the latest revision level. Also, note that any modifications affecting UAS performance or flight characteristics and/or avionics upgrades will have flight manual supplements issued. Check to make sure all flight manual supplements are inserted in the AFM.		
11	<b>Weight and Balance with Equipment List:</b> As part of the original airworthiness certification, the UAS is weighed to determine that the ranges of weight and center of gravity are within the approved limits, as specified in the appropriate UAS specification or type certificate data sheet. There must be a current weight and balance report available for the UAS to include an updated equipment list. The original equipment list produced by the UAS manufacturer lists those items of equipment which are replaceable on the UAS to include the weights and moment arms. This list should be amended as components are changed and kept current during the life of the UAS. Mainly for internal/external UAS package loads.		
12	<b>Inspection Program Status/Record Entries:</b> Each inspection accomplished must be recorded in the UAS records. A summary showing when each inspection was performed and when it is next due makes it easy to determine the status of the inspection program. Provide a copy of each record entry (release to service) for each major inspection. A recent inspection (within 30 days of making application) is required for standard airworthiness certification. This should meet the requirements of FAR 43, ANNEX D in scope and detail. Credit may be given for recent inspection performed in accordance with a continuous airworthiness inspection program. This is up to the discretion of the FAA/DAR.		
13	<b>Test Flight Report:</b> A test flight may or may not be required based on major airframe/software modifications. This depends on the extent of maintenance performed during the inspection required for certification and/or the manufacturers requirements. If a test flight is necessary, include a copy of the test flight report and ensure that any in-flight discrepancies have been corrected.		
14	<b>Accident and Incident Reports:</b> Provide any historical Accident and Incident Reports for the aircraft to be flown. Review instances when an accident or incident are required to be filed with the FAA.		
15	<b>Pilot-In-Command Designation Letter:</b> Provide a copy of PIC designation letter. Currency requirements must include Emergency Procedures and Contingency management training, either live or simulated, and three (3) takeoffs and landings <u>in mission configuration</u> within the previous 90 days.		
16	<b>Risk Assessment Worksheet Review: SMS is composed of four functional components (Review the four levels):</b> <b>a. Safety Policy:</b> Establishes senior management's commitment to continually improve safety; defined the methods, processes, and organizational structure needed to meet safety goals.		

	<p><b>b. Safety Risk Management:</b> Determines the need for, and adequacy of new or revised risk controls based on the assessment of acceptable risk.</p> <p><b>c. Safety Assurance:</b> Evaluates the continued effectiveness of implemented risk control strategies; supports the identification of new hazards.</p> <p><b>d. Safety Promotion:</b> Includes training, communication, and other actions to create a positive safety culture within all levels of the workforce.</p> <p>Review and complete the Risk Assessment form.</p>		
17	<p><b>Visual Observer Training and Certification:</b> Provide training program used to certify any VOs used for the mission. Agencies who do not have a formal VO training program can contact Lone Star to receive training materials.</p>		

### APPENDIX 3: EXAMPLE OF UAS CHECKLIST

#### TEEX ITSI DJI Mavic 2 Enterprise Dual Pre-Flight, Safety, & Post-Flight Checklist

a. Small UAS Information	
Drone Name:	ITSI Mavic
Serial #:	298DG5Q001657Z
FAA Registration #:	FA3L4CT7A3
RPIC Name:	
VO Name:	
Mission Description:	

b. Pre-flight Checklist	
<input type="checkbox"/>	Proper authorization received and notices made
<input type="checkbox"/>	METAR and NOTAMS reviewed
<input type="checkbox"/>	Airspace reviewed
<input type="checkbox"/>	Safety Equipment Checklist completed
<input type="checkbox"/>	Remote Control fully charged
<input type="checkbox"/>	Mobile Device fully charged
<input type="checkbox"/>	Intelligent Flight Battery fully charged
<input type="checkbox"/>	Propellers properly installed and secure
<input type="checkbox"/>	Visually inspect all components for damage
<input type="checkbox"/>	Intelligent Flight Battery installed and properly secured
<input type="checkbox"/>	Gimbal cover removed
<input type="checkbox"/>	Gimbal and camera functioning properly
<input type="checkbox"/>	Motors unobstructed and functioning normally
<input type="checkbox"/>	Camera lens and Vision System sensors clean
<input type="checkbox"/>	Accessories properly and securely mounted
<input type="checkbox"/>	DJI Pilot or Kittyhawk app successfully connected to aircraft
<input type="checkbox"/>	Safety equipment donned and briefing conducted

c. Safety Equipment Checklist	
<input type="checkbox"/>	Safety vest (1 per person)
<input type="checkbox"/>	Hard hat (1 person)
<input type="checkbox"/>	Eye Protection or Safety Glasses



<input type="checkbox"/>	Fire Extinguisher	
<input type="checkbox"/>	Shovel	
<input type="checkbox"/>	5-Gallon Bucket	
<input type="checkbox"/>	Trash Bags	

d.	Post-flight Checklist
----	-----------------------

<input type="checkbox"/>	All devices powered down	
<input type="checkbox"/>	Visual inspection complete ( <i>note differences from pre-flight</i> )	
<input type="checkbox"/>	Propellers, battery, accessories removed and stowed	
<input type="checkbox"/>	Gimbal cover installed	
<input type="checkbox"/>	All components properly stowed in case	
<input type="checkbox"/>	Area policed for litter	
<input type="checkbox"/>	Safety Equipment stored	

e.	Mission Notes
----	---------------


## ANNEX B: RESEARCH AND TRAINING AREA MAP

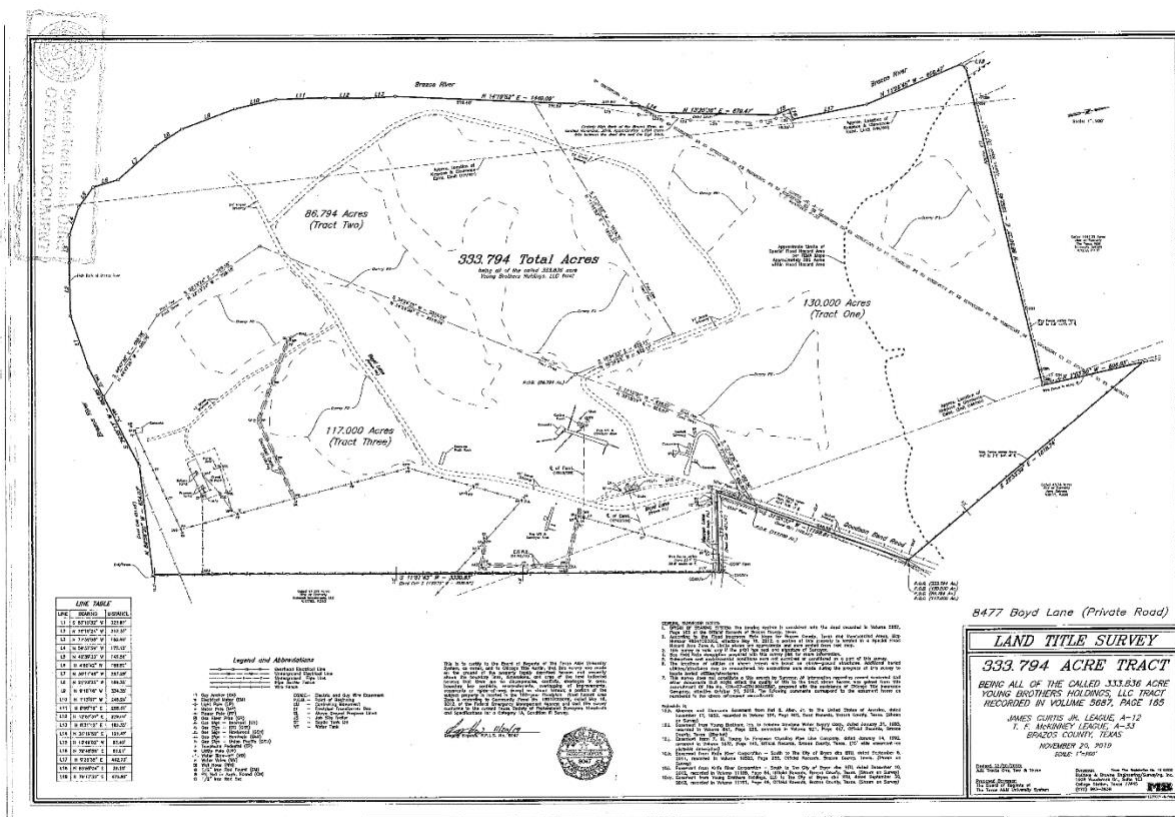


1. Characteristics of the RTAs and facilities
  - a. Runways (See two example images below)

- 



- 40



The Knife River property is incorporated in the RELLIS Reservation System and is referred to as Research and Training Area (RTA) 4. RTA 4 has been subdivided in correspondence with the three purchase options: RTA 4A (current), 4B (Jan 2022), and 4C (Jan 2025). RTA 4A is currently being used for ground manned and unmanned vehicle use and unmanned aviation system (UAS) flying. Demolitions training and testing will occur in the pit labeled “demo pit” depicted in the below diagram.

**Future Potential Usage.** The varying terrain provides excellent challenges for continued use by vehicle researchers. The absence of permanent structures that would present over flight issues provides a great venue for unmanned aviation systems. Most of the pits on the property have standing water in them due to proximity to the Brazos River and the associated water table. The water filled pits provide the opportunity for several different types of research: soil erosion, water management, and amphibious vehicles (manned and unmanned). Additionally, the open pits, with or without water, provide a venue for emergency rescue training. Below is a listing of other potential uses:

- Motorcycle/ATV training
- Construction material testing
- Solar/photovoltaic research
- Marksmanship training/testing
- Heavy equipment operator training
- Munition/Explosive testing





### **Infrastructure**

There are a few unimproved roads supporting RTA 4A that lack other infrastructure such as electrical, water, data or sanitary. RTA 4A will have future access to electric, water, and data. With the addition of RTA 4C in Jan 2025, there will be access to electric, water, sanitary and data. RTA 4C will have access to Goodson Bend Road and serve as a potential administrative site. Additional infrastructure requirements for the RTA 4 were determined based on potential intended use. The following additional infrastructure requirements were identified:

- Road around each pit
- Estimated 3' berm along roads bordering pits or in lieu of a berm, graduated pit walls preventing vehicles from driving into a pit
- Ramp/entry point supporting vehicle access into each pit

There will be minimal landscape requirements. Mowing will be to keep the drainage areas free. Any future projects requiring vertical construction will be submitted to the RELLIS Planning Design Review Board for approval.

## ANNEX C: SAFETY

### APPENDIX 1: RISK MANAGEMENT

1. Basic Principles of Operational Risk Management (ORM)
  - a. Accept risk when the benefits outweigh the cost.
  - b. Accept no unnecessary risk.
  - c. Anticipate and manage risk by planning.
  - d. Make risk decisions at the appropriate command level.
2. The following information and form is only an example. Organizations are authorized to use other formats for the Deliberate Risk Assessment Worksheet (DRAW). The ORM worksheet in whichever form used must be comparable and as thorough in scope as the example along with being signed by the preparer and reviewing person with the appropriate Risk Decision Authority. Do not accept any unnecessary risk and ensure risk decisions are made at the appropriate level. Overall risk after controls are implemented and residual risk has been identified. Low (L), Moderate (M), High (H), Extremely High (EH). Any risk levels determined to be either High (H) or Extremely High (EH) shall conduct a formal risk management briefing to the RELLIS Administration Leadership for overall understanding and awareness.



<b>DELIBERATE RISK ASSESSMENT WORKSHEET</b>					
<b>1. OPERATION/TASK DESCRIPTION</b>				<b>2. DATE</b> ( <i>DD/MM/YYYY</i> )	
<b>3. PREPARED BY</b>					
<b>a.</b> Name ( <i>Last, First, Middle Initial</i> )			<b>b.</b> Title/Position		
<b>c.</b> Organization		<b>d.</b> Email		<b>e.</b> Telephone ( <i>Include Area Code</i> )	
<b>f.</b> Functional Support				<b>g.</b> Signature of Preparer	
Five steps of Risk Management: (1) Identify the hazards      (2) Assess the hazards      (3) Develop controls & make decisions (4) Implement controls      (5) Supervise and evaluate      ( <i>Step numbers not equal to numbered items on form</i> )					
<b>4. SUBTASK/SUBSTEP OF OPERATION/TASK</b>	<b>5. HAZARD</b>	<b>6. INITIAL RISK LEVEL</b>	<b>7. CONTROL</b>	<b>8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT</b>	<b>9. RESIDUAL RISK LEVEL</b>
				How:  Who:	
				How:  Who:	
				How:  Who:	
				How:  Who:	
				How:  Who:	
Additional entries for items 5 through 9 are provided on page 2.					
<b>10. OVERALL RESIDUAL RISK LEVEL</b> ( <i>All controls implemented</i> ): <input type="checkbox"/> EH – extremely high risk <input type="checkbox"/> H – high risk <input type="checkbox"/> M – medium risk <input type="checkbox"/> L – low risk					
<b>11. OVERALL SUPERVISION PLAN AND RECOMMENDED COURSE OF ACTION</b>					
<b>12. PPROVAL OR DISAPPROVAL OF OPERATION</b> <input type="checkbox"/> APPROVE <input type="checkbox"/> DISAPPROVE					
<b>a.</b> Name ( <i>Last, First, Middle Initial</i> )		<b>b.</b> Title/Position		<b>c.</b> Signature of Approval Authority	
<b>e.</b> Additional Guidance:					

DELIBERATE RISK ASSESSMENT WORKSHEET					
4. SUBTASK/SUBSTEP OF OPERATION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
				How:  Who:	
				How:  Who:	
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				How:  Who:	

## DELIBERATE RISK ASSESSMENT WORKSHEET

4. SUBTASK/SUBSTEP OF OPERATION/TASK	5. HAZARD	6. INITIAL RISK LEVEL	7. CONTROL	8. HOW TO IMPLEMENT/ WHO WILL IMPLEMENT	9. RESIDUAL RISK LEVEL
				How:  Who:	
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				How:  Who:	

Instructions for Completing DRAW FORM, "Deliberate Risk Assessment Worksheet"	
<b>1. Mission/Task Description:</b> Briefly describe the overall Mission or Task for which the deliberate risk assessment is being conducted.	<b>10. Overall Risk After Controls are Implemented:</b> Assign an overall residual risk level. This is the highest residual risk level (from block 9).
<b>2. Date</b> "00<<<<: Self Explanatory.	<b>11. Supervision Plan and Recommended Course of Action:</b> Completed by preparer. Identify specific tasks and levels of responsibility for supervisory personnel and provide the decision authority with a recommend course of action for approval or disapproval based upon the overall risk assessment.
<b>3. Prepared By:</b> Information provided by the individual conducting the deliberate risk assessment for the event, test, research or training.	
<b>4. Sub-task/Sub-Step of Operations/Task:</b> Briefly describe all sub-tasks or sub-steps that must be completed to ensure operation or task success which have the potential to put people at risk.	<b>12. Approval/Disapproval:</b> Risk approval authority approves or disapproves the operation or task based on the overall risk assessment, including controls, residual risk level, and supervision plan. Space provided for authority to provide additional guidance; use continuation page if needed.
<b>5. Hazard:</b> Specify hazards related to the subtask in block 4.	<b>13. Risk Assessment Review:</b> Should be conducted on a regular basis. Reviewers should have sufficient oversight of the mission or activity and controls to provide valid input on changes or adjustments needed. If the residual risk rises above the level already approved, operations should cease until the appropriate approval authority is contacted and approves continued operations.
<b>6. Initial Risk Level:</b> Determine probability and severity. Using the risk assessment matrix (page 3), determine level of risk for each hazard specified, probability, severity and associated Risk Level; enter level into column.	
<b>7. Control:</b> Enter risk mitigation resources/controls identified to abate or reduce risk relevant to the hazard identified in block 5.	<b>14. Feedback and Lessons Learned:</b> Provide specific input on the effectiveness of risk controls and their contribution to mission success or failure. Include recommendations for new or revised controls, practicable solutions, or alternate actions. Submit and brief valid lessons learned as necessary to persons affected.
<b>8. How to Implement / Who Will Implement:</b> Briefly describe the means of employment for each control (i.e., Engineering, administrative or protective equipment) and the name of the individual organization or office that has primary responsibility for control implementation.	<b>15. Additional Comments or Remarks:</b> Preparer provides additional comments, remarks, or information to support the risk assessment. If block 15 is used as a continuation of block 14, strike through the block number and title.
<b>9. Residual Risk Level:</b> After controls are implemented, determine resulting probability, severity, and residual risk level.	<b>Additional Guidance:</b> Block 4-9 continuance page may be reproduced as necessary for processing of all subtasks/ substeps of the operation/task. If a complete page is not utilized, write "NOTHING FOLLOWS" on the first unused row, immediately after the final item assessed.

APPENDIX 2: TEES PROJECT SAFETY GUIDE  
**Project Safety Analysis (PSA)**  
**For Developing the *Project-Specific Safety Plan***

Your Department/Division  
Texas A&M University  
Texas A&M Engineering Experiment Station

15 September 2020



{ Insert your project's graphic logo here }

***PI Name:***

**Your Engineering Department or TEES Division?**

Campus Mail Stop:

Texas A&M University

College Station, Texas 77843-\_\_\_\_\_

PROJECT IDENTIFICATION SECTION
--------------------------------

Project Name:

SRS Project Number:

TEES Project Number:

TEES Proposal Number:

Contract Officer, Research Administration:

*{Name, email, phone, mail stop, etc.}*

Project Description (*abstract or executive summary with detailed project description*):

Principal Investigator:

Name:

Department/Division:

Office Location:

Office Phone Number:

Email:

Researchers:

*(List all project personnel: Faculty, PI, Students or Staff)*

Name:

Department/Division:

Office Location:

Office Phone Number:

Email:

Location of Project Facilities:

Building No:

Building Name:

Room No:

Project Duration (*projected dates*):

Begin:

End:

REVIEW & AUTHORIZATION SECTION
--------------------------------

The attached Project Safety Analysis has been reviewed by the undersigned. Any major modifications of equipment or changes in procedures will require additional review or amendment by the Departmental Safety Committee, and/or the Departmental Safety Officer, and the Department Head. In executing this work, you must abide by the safety requirements of the Department, TEES, and University and must inform the Departmental Safety Officer of any changes in personnel or operations outside these procedures.

---

Faculty/PI:	Date:
-------------	-------

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Department Head:	Date:
------------------	-------

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Department Safety Officer:	Date:
----------------------------	-------

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Engineering/TEES Safety:	Dr. D. C. Breeding, RPE, CSP	Date:
--------------------------	------------------------------	-------

### C. Optional Informational Copies

Please send a copy of your final approved PSA document to the following TAMU Departments, for their information and use, if/as directed. Any comments or concerns will be conveyed to the PI and to Engineering Safety before initiation date of the proposed project.

---

TAMU Radiation Safety Officer (RSO) & Laser Safety Officer (LSO)	Date:
Mail Stop: 4472 TAMU	

*(A copy of the draft PSA must be provided to the TAMU RSO & LSO for additional approval(s) where use of radioactive materials, ionizing radiation or nonionizing radiation-producing devices are planned. Approval of the RSO/LSO must be obtained, and proper permits issued before the PSA can receive final approval. Please refer to §. II, Analysis of Potential Hazards, below.)*

---

TAMUS RELLIS Campus, Facilities Coordination & Scheduling	Date
---	------

*(To accompany requests for new space assignments or requests for use of sites at the RELLIS Annex Research Campus.)*

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TAMU Office of Facilities Coordination, MS 1369	Date
---	------

*(To accompany requests for new space assignments or requests for use of outdoor sites on university properties.)*

---

Other...	Date:
----------	-------

STRATEGY SECTION

### Purpose of Project Safety Analysis:

PSA provides the Principal Investigator with the opportunity to review the environmental health, safety and security aspects of the research project to be undertaken, to identify known and potential hazards, to assess risks, and to select and implement necessary protective controls. This will help protect the researchers, graduate students, and staff involved with the project, reduce risk, ensure compliance, and conserve environmental resources, and protect facilities.

### Scope:

All Principal Investigators shall file a written report on the safety analysis of each research project prior to the initiation of that exercise. The Project Safety Analysis (PSA) shall identify potential hazards and assess risks by the use of system safety analysis techniques, and shall detail the engineering and administrative controls that will be necessary to reduce risk to acceptable levels for the researchers, graduate students, and staff as well as the occupants of the building and the environment. The PSA will identify the costs, and the source of adequate funding, to implement necessary controls. It will identify necessary personnel training needs. The PSA will identify a plan for ultimate disposal of leftover equipment, materials and wastes, and the decontamination & clean up necessary to render the facility safe to reassign and reoccupy.

### Extent of Applicability:

Recognizing that no activity is without some degree of risk, and that certain routine risks are accepted without question by the vast majority of persons (for example: machine shops that do not handle hazardous materials, cars used for personal transportation, etc.,) the applicability of this analysis has been limited to those academic research projects that involve hazards not routinely encountered and accepted in the course of everyday living by the vast majority of the general public.

The analysis of a project that involves only hazards of a type and magnitude routinely encountered and accepted by the public will require justification referenced to a recognized source. The PSA protocol can also be expediently used to document justification that a particular project has no significant hazards.

### Assistance in Conducting PSA

The TEES/Engineering Safety officer, TAMU EHS Department, is available to work with the Faculty/PI, research staff, and academic groups to identify hazards associated with the project, assess risks, and to identify necessary protective control measures in support of safe and successful outcomes.

## PROCEDURE SECTION

### I) Apparatus Used in the Project

#### A) Equipment Used in the Experiment

*{List all equipment; describe it's use, and potential for injury an/or harmful exposure. Include work practices, protocols and experimental designs.}*

#### B) Experiments Performed in the Project



*{Attach a summary description of the project to be undertaken, research procedures, standard operating procedures (SOP), tasks, and safe work practices (SWP)}*

C) Chemicals Used in the Research Project:

*{List all chemicals to be used in the project}*

Required chemical inventory current and posted? Y/N  
*{Attach a copy of the current chemical inventory for this facility}*

Safety Data Sheets (SDS)? Y/N  
*{Are current SDS's available for all chemicals?}*

All stored chemicals segregated by Hazard Class? Y/N  
*{Stored chemicals must be segregated by Hazard Class.}*

II) Analysis of Potential Hazards

A) List all Physical Hazards That May Cause:

Electrical Shock

Cuts

Burns

Abrasions

Slips

Trips

Falls

Amputations

Other...

B) List all Chemical Hazards

*{Identify the name and characteristics of each chemical}*

*{Use the HazCom Engineering Chemical Inventory form}*

Acids

Bases

Oxidizers

Flammables

Solvents

Toxic Chemicals

Reactives and Explosives

Nanoscale Materials

CFATS Materials

Controlled Substances

C) Ionizing or Nonionizing Radiation

*{Please identify any ionizing radioactive materials or nonionizing radiation-producing devices to be used in this project. Each must have permits issued and approval signatures from the university RSO/LSO (see page 3, above). Attach additional information and specifications, as appropriate. Attach documentation of RSO/LSO approvals & permits.}*

Regulated Radioactive Materials

Yes / No

Radioactive Isotopes (*Specify*)

Yes / No

Other Ionizing Radiation ( <i>Specify</i> )	Yes / No
Nonionizing Radiation-Producing Devices	Yes / No
• Lasers & Laser Systems	Yes / No
• X-Ray Devices	Yes / No
• MRI	Yes / No
• CAT Scanner	Yes / No
• Electron Beam	Yes / No
• EMP Devices	Yes / No
• Other ( <i>Please list</i> )	Yes / No

D) Biological Hazards

*\*\* If Biological Hazards are present, OSHA Bloodborne Pathogen requirements and CDC Universal Precautions shall be implemented, and appropriate PPE shall be provided. Note: Please attach appropriate documentation of requisite biosafety approvals & permits\*\**

Microbiologicals  
 Bacteriologicals  
 Bloodborne Pathogens  
 CDC Select Agents  
 Biological Toxins  
 Pathogenic Organisms  
 Recombinant DNA (rDNA)  
 Viruses  
 Genetically Engineered Organisms  
 Biological Safety Level (BSL)  
 Controlled Substances (Drugs)  
 Other...

IRB Approval	Yes / No / n/a
Human Subjects Approval	Yes / No / n/a
Animal Use Protocols (AUP)	Yes / No / n/a
Other...	

E) Secure, Segregated Chemical Storage:

*{Chemical storage areas shall not be accessible to students/passers-by}*

*{All stored Chemicals and other hazardous materials shall be provided with secure storage and segregated by Hazard Class}*

Locations:  
 Quantities:  
 Authorized Person(s):

F) Hazardous Waste Disposal

*{All hazardous chemical waste materials must be contained, labeled, tagged, and disposed of in compliance with the TAMU Hazardous Waste Management Program}*

Chemical:	Disposal method:
-----------	------------------

G) Hazardous Substances Monitoring and Detection

Substance:

Detection method:

H) List all necessary Personal Protective Equipment (PPE) & Clothing

*{All PPE shall be ANSI/NIOSH/MSHA approved, as appropriate}*

*{All use of respiratory protection & SCBA, must comply with the TAMU Occupational Health Program}*

*{All laboratory personnel must comply with the Engineering Guideline for Safe Laboratory Attire.}*

Long Pants, Long Sleeved Shirts	Yes / No
No Shorts, No Skirts	Yes / No
Closed-Toed Shoes	Yes / No
Aprons / Lab Coats	Yes / No
Goggles / Face Shields	Yes / No
Gloves	Yes / No
Respirators	Yes / No
Other...	

I) Personnel Training Needed for Specific Hazards

*{Identify the specific hazard and the individuals affected}*

Principal Investigator:

Researcher/Lab Technician:

Graduate Student:

Student Workers:

Other...

III) Potential Accidents and Responses (*What if ... ?*)

A) Utility Failure

Utility:	Planned Response (SOP's):
Electricity	
Gas	
Air	
Vacuum	
Hot Water	
Cold Water	
Ventilation Hood	
Room/Lab Ventilation	

B) Leaks and Spills

SDS Available:	Yes / No
Spill Kit Available:	Yes / No
PPE Available:	Yes / No
Containment Procedures:	Yes / No
Disposal Procedures:	Yes / No
Personnel Training:	Yes / No

C) Equipment Failure

*{Attach Documentation of All SOP's for Emergency Shutdown Procedures}*

D) Fire Prevention *{Attach the following}*

Fire Extinguisher Locations:

Building Emergency Evacuation Plan:

Evacuation Routes:

Emergency Response Procedure:

Incident Reporting & Notification Procedure:

E) Housekeeping, Clean Up and Decontamination Plan

*{Attach your Housekeeping Assignment Schedule}*

Housekeeping violations are frequently cited safety deficiencies in our laboratories and facilities. Please implement a plan for routine daily, weekly and monthly laboratory clean ups. A clean, well-organized laboratory reduces risk to personnel and supports successful research outcomes.

All personnel must pitch in to clean and organize the work area:

- Schedule clean up at least 15 minutes/day/person, and
- Schedule clean up at least 1 hour/week, and
- Schedule clean up at least ½ day/month

IV) Equipment Labels

A) Utility Shut-offs labeled:

Electricity	Yes / No / n/a
Vacuum	Yes / No / n/a
Gas	Yes / No / n/a
Air	Yes / No / n/a
Hot Water	Yes / No / n/a
Cold Water	Yes / No / n/a
Other...	

B) Identify all necessary Warning Signs:

Equipment

Instrumentation

Utilities

Personal Protective Equipment

Reagent Bottles

Secondary Containers

Refrigerators and Microwaves

Chemical Storage

\*24/7 Emergency Contact Information (ECI)

*{Must be current and posted on all entry door(s)}*

V) Noise

Will the project generate excessive noise? Yes / No / n/a  
 If yes, anticipated dBA is: \_\_\_\_\_  
 Type of hearing protection provided:  
*{Show calculations to determine appropriate NRR rating for selected HPD's}*

VI) List all Personnel Training Needs

TAMU General Laboratory Safety Training *{Mandatory}*  
 TAMU Hazard Communication Training *{Mandatory}*  
 Engineering/TEES Shop & Tool Safety Training  
 Advanced Laboratory Safety Training  
 Hands-On Fire Extinguisher Training  
 Standard Operating Procedures (SOP)  
 Safe Work Practices (SWP)  
 Other Project-Specific Training Needs...

VII) Standard Operating Procedures (SOP) for each Planned Task & Activity  
*(Document and attach your project-specific SOP's)*

Standard Operating Procedures (SOP) Identified: Yes / No  
 Safe Work Practices (SWP) Identified: Yes / No  
 Affected Personnel Trained on SOP's & SWP's: Yes / No  
*(Refer to training recordkeeping requirements)*

VIII) Ultimate Disposal and Clean Up Plan

*A detailed plan is required for the ultimate disposal of unused equipment, materials, chemicals and wastes following project conclusion; includes the plans for:*

- *Clean up and decontamination of instrumentation, equipment & facilities,*
- *Laboratory decommissioning and closure,*
- *Waste Minimization,*
- *Pollution Prevention (P<sup>2</sup>),*
- *Environmental Stewardship & sustainability*

All project operations will be planned and managed for environmental sustainability, waste minimization and pollution prevention, as well as health, safety and security. Following completion of this project, all materials and equipment will be evaluated for future productive use, wastes will be disposed in compliance with the university's Hazardous Waste Management Plan, and the facilities will be cleaned and decontaminated as necessary to return the space to safe and productive usage.

IX) List & attach all necessary Emergency Planning

Emergency Response Plan Yes / No / n/a  
 Building Emergency Evacuation Plan Yes / No / n/a  
 Emergency Contact Information (ECI) Yes / No / n/a  
*{Must be posted on entry door(s)}*  
 Spill Control Plan Yes / No / n/a  
 Decontamination & Clean Up Plan Yes / No / n/a  
 Other... Yes / No / n/a

X) Internal Safety Reviews *{List all internal, self-inspection mechanism(s) to ensure compliance, abatement & accountability.}*

Procedure for Periodic Internal Safety Audit & Review:

1. The PI or designee will inspect the laboratory weekly, document findings, and implement corrective action within 24-hr.
2. The Department's designated Safety Officer will conduct periodic laboratory inspections at least once each semester, document and communicate findings, and ensure corrective action is implemented in a timely manner.
3. EHSD will conduct an annual laboratory safety inspection, issue a documented safety inspection report, and conduct follow up inspections to ensure prompt corrective action.
4. EHSD will conduct periodic shop safety inspections, issue a documented safety inspection report, and conduct follow up inspections to ensure prompt corrective action.
5. The primary responsible PI will implement corrective action in a timely manner, typically within one (1) week. Conditions of "Imminent Danger" or "IDLH" (Immediately Dangerous to Life and Health) MUST be corrected immediately, and may require immediate evacuation and "Stop Work" until the problem is abated.

XI) Makerspace Engineering Innovation Laboratories & Shops

Makerspaces — sometimes referred to as innovation centers, hackerspaces, hackspaces, and/or fablabs — are creative, DIY spaces where people can gather to create, invent, and learn. Makerspace facilities typically consist of prediction, prototyping, and validation tools to support a wide variety of projects. Such facilities often have 3D printers, software, electronics, CNC machines, computer operated equipment & apparatus, craft and hardware supplies, tools, and more.``

Does your facility contain a Makerspace or Makerspace-type equipment?

Yes \_\_\_\_\_ No \_\_\_\_\_

If Yes, please provide a complete inventory of Makerspace equipment & devices, and SOPs for the planned project activities. Contact the Engineering Safety Director for specific Makerspace Safety Protocols.

XII) NanoTechnology and Nanoscale Materials

All work with NanoTechnology and/or Nanoscale Materials must be conducted in accord with the TEES/Engineering "*Guideline for Working Safely with Nanotechnology, Nanoscale Materials and Particles.*" By submitting this PSA document I/we declare my/our commitment to comply with best practices and with all provisions of this Guideline in order to prevent potentially harmful exposures to nanoscale materials.

All Engineering projects involving the use of nanotechnology and/or nanoscale materials must be conducted in accord with the "Engineering Guideline for Working Safely with Nanotechnology and Nanoscale Materials."

By signature on this PSA document, the PI and all affected project personnel confirm they have read and are familiar with all provisions of the Guideline, and pledge to conduct all project operations in compliance with the Guideline and with current Best Practices as published by the National Institute for Occupational Safety & Health (NIOSH), the Occupational Safety & Health Administration (OSHA), and the U.S. Environmental Protection Agency (EPA)

NOTE: The “*Engineering Guideline for Working Safely with Nanotechnology and Nanoscale Materials*” is available on the EHS Department web site at <http://ehs.tamu.edu/>, under “*Engineering Safety*.”

XIII) Unmanned Aerial Vehicles (UAV), Unmanned Aerial Systems (UAS), and other Autonomous Vehicles

UAVs, UASs (aka, “drones”), and other Autonomous Vehicles are increasingly being used in research and other university activities.

Does your project involve such vehicles? Yes / No / NA

If “Yes,” please become familiar with TAMU System requirements at <http://policies.tamus.edu/24-01-07.pdf> and the TAMU requirements at <https://ehs.tamu.edu/programs/unmanned-aerial-systems/>, and submit your request to operate UAV/UAS at <https://www.tamus.edu/business/risk-management/uas/uas-application/>.

Please attach confirmation of your TMAU approval to operate your UAV/UAS in compliance with FAA regulations.

XIV) Commitment to a Safe, Healthful and Secure Workplace Environment

By submitting this PSA document I/we declare our commitment to full compliance with federal & state law, and with TAMU & TEES rules and requirements for a safe, healthful, secure workplace environment, in support of our shared goal for safe and productive research outcomes.

XIV) Safety Agreements *{Signatures are required to document the commitment of each participant in maintaining the safe, healthful, and secure project environment}*

Location of Project Records & Files: Bldg: Room No:  
*{Where will your project records be maintained and/or archived}*

Signed By:

---

Principal Investigator

---

Researcher/Lab Technician

---

Graduate Student(s)

---

Student Worker(s)

---

Other...

XV) Attachment Section — *List all requisite Attachments to this document, including:*

Safety Data Sheet (SDS)  
Chemical Inventory  
Apparatus Inventory  
Equipment Inventory  
3D Printer Inventory  
Hazard Analysis Plan (HAP)  
Quantitative Risk Assessment(s)  
Qualitative Risk Assessment(s)  
Job Hazard Assessment(s)  
Task Hazard Assessment(s)  
Design Calculations  
Maps; Site Plans; Floor Plans  
Floor Plan Drawings  
Engineering Drawings  
Standard Operating Procedures (SOP)  
Safe Work Practices (SWP)  
Housekeeping Plan  
Training Plans  
Training Completions, Certificates, Transcripts  
Supplemental Information  
Housekeeping Plan  
Other...



### APPENDIX 3: MEDICAL EVACUATION PROCEDURES

1. All injuries that occur within RTAs or training facilities requiring immediate medical attention and evacuation shall be reported directly to the organization's chain of command and RELLIS Administration by the organization. **There are no medical capabilities on RELLIS Campus and the closest medical facility is St Joseph Health Regional Hospital 2801 Franciscan Drive, Bryan, Tx 77802. For emergency response dial 911.**
2. When reporting a serious injury it is critical to have the incident details, victim injuries, and assets necessary to best address victim injuries are clearly articulated to the 911 operator. The using organization is responsible for initial mishap/incident site control to prevent site contamination for mishap/incident investigations. These procedures apply to all on RELLIS Campus that get injured in or on RTAs and training facilities.
3. The responsibility for determining the necessity for a medical evacuation rest with using organization. Examples requiring urgent medical evacuation include:
  - a. Chest pain that does not go away when sitting for a few minutes;
  - b. Intense and uncontrollable pain;
  - c. Head injury with loss of consciousness;
  - d. Deep lacerations with uncontrollable bleeding;
  - e. Chemicals splashed in the eyes;
  - f. Severe asthma attacks with shortness of breath that prevents talking;
  - g. Possible poisoning or overdose;
  - h. Sudden weakness on one side of the body;
  - i. Serious fractures, broken bones; or
  - j. Poisonous Snake bite(s).
4. For incidents requiring emergency response using organizations should have someone meet the emergency vehicles at the gate on Airfield Road. If unable, RELLIS Administration personnel can facilitate escorting emergency vehicles to the site.

## APPENDIX 4: INCIDENT REPORTING

1. The below are the information requirements for initial incident reporting:
  - a. Date and Time of Event
  - b. Date and time of Employer / TAMUS notification
  - c. Location of Event (to include street address if available)
  - d. Event Description
  - e. Number and description of injured personnel (both TAMU/TAMUS employees and non employees)
  - f. Number and description of damaged vehicles (all vehicles)
  - g. Description of damaged property
  - h. Was 911 called and was an official Report Filed?
2. Follow on reporting:
  - a. Name of who is reporting
  - b. Names of Injured (if releasable)
  - c. Physician diagnosis (type of injury)
  - d. Current disposition- released or admitted
  - e. Way ahead/next step if required
3. Incident reporting is the responsibility of the using organization. For those organizations that are part of the Texas A&M University System will use the System Reporting Tool (Origami). Below is a screen shot of the page used to report an incident with the information required.

**ORIGAMI RISK**

Dashboards Claim Documents Location Policy Tasks People In

Steve Fischer currently working in Dynam

### Report a New Incident

#### General Incident Details

Incident Date: 01/03/2017

Incident Time: 06:02 PM

Date Reported: 01/03/2017

Location: Arcadia

Incident Description: Car collided with company van, damaging both vehicles and causing minor injuries

#### Address of Incident

Street: 100 W Bridge Street

City: Arcadia

State: Nebraska

Zip Code: 68815

Please select all that apply to this incident:

☒ Injured employee. How many? 2

☒ Injured non-employee. How many? 1

☒ Damaged company vehicle. How many? 1

☒ Damaged non-company vehicle. How many? 1

☐ Damaged company property.

Next

00:00 00:00

## APPENDIX 5: FIRE DANGER RATINGS

FIRE DANGER RATINGS		
FIRE DANGER RATING	CAUTION TO BE EXERCISED	NECESSARY PRECAUTIONS
LOW	Use normal caution.	**Organizations will adhere to restrictions promulgated by RELLIS Operations Center.**
MODERATE	Use normal caution. Fires will start easily.	** Organizations will adhere to restrictions promulgated by RELLIS Operations Center.**
HIGH	Use extra caution. Fires will start very easily.	Handheld or grenade launched airborne pyrotechnics ARE NOT authorized. For interior RTAs - blanks & smoke (used in an ammo can) are authorized in cleared areas. For perimeter RTAs ordnance or flame producing devices (including smoking) ARE NOT authorized. Smoking is permitted only in cleared areas. **Organizations SHALL adhere to any additional restrictions promulgated by RELLIS Operations Center.**
VERY HIGH	Use extreme caution. Fires are very hard to control.	All previous restrictions apply. Smoking is permitted only in cleared areas. **Organizations will adhere to any additional restrictions promulgated by RELLIS Operations Center.**
EXTREME	Flash condition. This is the <u>highest class of fire danger</u> . Fires started are practically impossible to extinguish and usually continue until danger rating conditions improve or burn themselves out. <u>The utmost caution with fire-producing agents and devices must be exercised at all times.</u>	<u>The firing of high explosives, pyrotechnics, incendiaries, or other munition likely to cause fires is prohibited unless specifically authorized by RELLIS Operations Center.</u> The use of any type of training/live ordnance (to include blanks), heat or flame-producing devices (heaters, welders, stoves, or open fires) in RTAs is strictly prohibited unless authorized by RELLIS Operations Center. No off-road activities by vehicles are permitted without authorization from RELLIS Operations Center. <u>Smoking shall not be permitted under any circumstances.</u> **Organizations SHALL adhere to any additional restrictions promulgated by RELLIS Operations Center.**
**RELLIS Operations Center will publish additional restrictions via the Reservation System and email. Units should refer to this guidance prior to conducting training.		

## ANNEX D: RESERVATION SYSTEM INSTRUCTIONS

(Quick Reference Instructions for the full manual go to [RELLIS.tamus.edu](https://rellis.tamus.edu) to view)

### Account Registration

- 1) **Website:** From within the TAMU firewall, go to the RRS landing page:  
<https://rsa-dev.tcat.tamu.edu/>
  - 2) **Bookmark:** Consider creating a “bookmark” for this site in your browser to enable easy access.
- Register:** Click “Register” and complete your TAMUS SSO login and subsequent two-factor authentication (e.g., using the Duo Mobile app).
- 3) **Submit Form:** Fill out and submit the “Request New Account” form.
  - 4) **Approval:** Within a few business hours you should receive email confirmation of your account approval.

### Account Login & Logout

- 1) **Website:** From within the TAMU firewall, go to the RRS landing page:  
<https://rsa-dev.tcat.tamu.edu/>
- Login:** Click “Login” and complete your TAMUS SSO login and 2-factor authentication.
- Logout:** Click the “Hello <Name>” menu in the upper right corner and choose “Logout”. The “hamburger” menu icon (≡) is used on small mobile devices.
- Logout:** Click “Logout” from the menu drop-down list.

### Site Layout

**Landing Page:** Provides a welcome to non-authenticated users and a **RELLIS Today** snapshot of today’s RELLIS reservation operations.

**Dashboard:** Displays all of your active and upcoming reservations as well as any reservation requests that require your review and approval.

**Reservations:** Displays all of your past, present and future reservations as well as any Multi-Use and Region Manager approvals you have granted.

**Operations:** Provides authenticated users the ability to select a date and view a detailed snapshot of RELLIS reservation operations for a one day, three day or week long range.

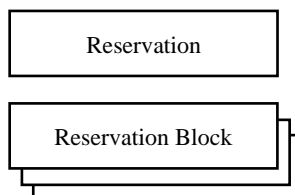
**References:** Provides helpful RRS references and documents.

**Reports:** (Admin users only) Enables generation of user account, reservation and reservation feedback reports.

**Admin:** (Admin users only) Provides management of user accounts and system data.

### RRS Reservation Structure

RRS utilizes a two-tier **Reservation** with general more low-level **Reservation** sets of ground, airspace and



reservation structure: a top-level reservation information and contains one or **Blocks** that each contain all of the specific frequency needs over a 4-week timeframe.

### Limiting Conditions

Each **Reservation Block** can specify limiting **Conditions** that are conveyed using symbols on the reservation map:

**Multi-Use Prohibited:** Prohibits any other reservation from requesting shared “multi-use” for any portion of this block’s ground/airspace and timeframe.

**Recording Prohibited:** Prohibits photo/video recording of any activities occurring within this block's ground/air regions and timeframe.

**Ordnance in Use:** Alerts RELLIS users that explosives and/or unexploded ordnance (UXO) could be utilized throughout this block's ground regions and timeframe.

#### • Approval Process

Reservations transition between various “states” during the submission and approval process:

**Draft:** The reservation is “under construction,” so none of the regions within the reservation are actually reserved yet.

**Pending:** The reservation is submitted and awaiting one or more approvals.

**Pending Final Approval:** The submitted reservation awaits final approval by the RELLIS Operations Manager.

**Approved:** The submitted reservation has been approved and all of the regions within the reservation are officially reserved.

**Active:** The date range of the approved reservation includes today, so the reservation is considered active.

**Denied:** One or more of the required approvals for the submitted reservation has been denied, but can be re-edited and resubmitted.

**Canceled:** The approved reservation has been canceled (e.g., since it is no longer needed).

**Complete:** All operations have been completed and this reservation is officially finished.

#### • Pending Approvals

Up to four kinds of approvals can be required for a reservation to transition from **Pending** to **Approved**:

**Multi-Use Approval:** Any new reservation that seeks to utilize a portion of a ground or airspace region that is already reserved will require approval from the owners of each existing reservation. The owners will receive nightly email reminders until they either approve or deny your Multi-Use request.

**Region Manager Approval:** Any new reservation that seeks to utilize a ground or airspace region that is “managed” by someone (e.g., a firing range safety officer) will require approval from the manager of each managed region.

**Supervisor Approval:** Any new reservation submitted by a user account having a designated “supervisor” (e.g., a supervisor for a graduate research assistant) will require approval from the user's supervisor.

**Final Approval:** Once a new reservation has received all required multi-use, region manager and supervisor approvals, the reservation awaits final review and approval by the RELLIS Operations Manager.

#### • Table Controls


**Sort:** Click any table column header to sort by that column and click again to sort in the reverse direction.








**ℹ:** Click this icon to display helpful information.

**Hyperlinks:** Click blue hyperlinked text to view details.

**Filters:** Tables can be filtered to specific rows: the **Start** date filters to show reservations starting after the selected date, the **End** date filters to reservations ending by the selected date, the **Search** field filters to rows containing the indicated text, and the **Status** field filters to reservations with the specified status.

#### • Table Actions

 = Edit a reservation

-  = Delete a Draft reservation
-  = Cancel an Approved reservation
-  = Duplicate a reservation
-  = Change the Usage Status of a reservation
-  = Approve a reservation request
-  = Deny a reservation request
-  = Submit feedback/AAR for a completed reservation

## • Reservation Creation Process

### 1) Create a **Reservation**

Enter basic Reservation details

Create a **Reservation Block**:

- Select a **Start Date**
- Specify any **Limiting Conditions**
- Specify any **Radio Frequencies**
- Select **Ground** and/or **Airspace Regions**
- Choose **Timeframes**
- Enter Reservation Block information
- Save the Reservation Block



Create more **Reservation Blocks** as necessary

Save or **Submit** the Reservation





## • Using the Timeframe Calendar

Reservation Blocks can span **14 days**, so longer duration reservations will require multiple Reservation Blocks. Reservation Blocks can be easily duplicated and then tweaked as necessary. **NOTE:** Changing the Start Date will remove current Timeframes no longer in the new range!

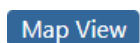
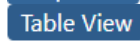






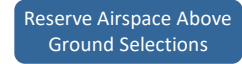

<b>Create an All-day Timeframe</b>	To create an all-day timeframe, click inside the top “all-day” area located at the top of each day.
<b>Create a Timeframe</b>	Click the start day/time and drag vertically and/or horizontally to create a timeframe that spans anywhere from 30 minutes to several days.
<b>Resize a Timeframe</b>	Click and drag from the bottom of an existing timeframe to adjust the ending day/time of the timeframe.
<b>Move a Timeframe</b>	Click and drag existing timeframes to move them.
<b>Duplicate a Timeframe</b>	Click and drag an existing timeframe while pressing Shift to easily duplicate a timeframe.
<b>Delete a Timeframe</b>	Click the red Trash icon inside a timeframe to delete it.
<b>Reservation Information</b>	Click an existing gray reservation to view its details.

-  Navigate to the previous/next week (up to 4 weeks).
-  Toggle a full screen view of the calendar.








#### Timeframe Legend

-  Indicates that this timeframe has a conflict with an existing reservation for one or more of the selected regions and will require Multi-Use approval
-  Your timeframes for this Reservation Block
-  Other existing reservations utilizing one or more of the selected regions during this timeframe
-  This timeframe has unresolvable conflicts that must be resolved in order to continue finalizing the Reservation Block

#### Using the Map Tools

-  Use the interactive map view for data entry
-  Use the accessible table view for data entry
-  Toggle Aerial satellite & Map street view
-  Toggle Ground/Airspace selection
-  Navigate around the map
-  Either click or drag rectangles to select one or more grid squares on the active layer
-  Click to select outlined RELLIS Research & Training Areas (RTAs) on the active layer
-  Click a ground/airspace region to view information about that region
-  Automatically selects all airspace above all of the selected ground regions (and vice versa for airspace)
- 

#### Map Legend

-  An existing reservation requires exclusive use of this region, so shared Multi-use will not be possible
-  This region requires either approval from an existing reservation POC or special approval from the manager of that region
-  This region has a reservation that prohibits recording of any kind
-  This region has a reservation that will be using ordnance/explosives
-  This ground region is currently selected
-  This airspace region is currently selected
-  Region conflict – Multi-use is prohibited

#### Daily Reservation Operations

Daily updates of the **Usage Status** is required for all Active reservations for personnel safety, accountability, and security reasons:

**Daily Check-In:** Set the Usage Status to reflect the status of operations, # of personnel, and POC

**Daily Check-Out:** Set the Usage Status to reflect the status of operations, # of personnel, and POC

**Reservation Finished:** Set the Usage Status to “Operations Complete”.

Click the **Check In** icon in the Dashboard “My Current Operations” table and choose:

<b>Check In</b>	Personnel are either on-site or en route to the reserved area
<b>Occupied</b>	Personnel are on-site but no operations are underway (e.g., preparation, cleanup)
<b>Active</b>	Testing/training is underway and access to the reserved area may be restricted. No outside personnel should enter the reserved area without the organization's approval.
<b>Check Out</b>	No personnel are on-site and access is not restricted
<b>Operations Complete</b>	All activities for this reservation have been completed and this reservation can be considered closed.

Each Usage Status option requires specifying:

1) Quantity of personnel on-site

On-site point of contact (POC) name and phone number

• **Questions / Feedback**