Department of the Army
U.S. Army Corps of Engineers
Washington, DC

Engineer Circular 95-1-1

6 August 2025

CEHEC-AP

EXPIRES 6 August 2027

USACE Aviation Programs
USACE Flight Regulations

FOR THE COMMANDER:

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Purpose. The purpose of this circular is to establish policies and procedures for aviation operations within the United States Army Corps of Engineers. It covers crewed and uncrewed aviation operations, crewmember and operator requirements, equipment, and staffing and coordination procedures. The provisions of this circular govern flight and ground activities directly related to the operation of United States Army Corps of Engineers aircraft and contractor owned aircraft performing flight operations for United States Army Corps of Engineers.

Applicability. This regulation applies to all Headquarters United States Army Corps of Engineers staff elements, United States Army Corps of Engineers Divisions, Districts, Labs, Centers, and Field Operating Activities and United States Army Corps of Engineers contracted operations.

Distribution Statement. Approved for public release; distribution is unlimited.

Proponent and Exception Authority. The United States Army Corps of Engineers Aviation proponent is the Aviation Program Manager. The proponent has authority to approve exceptions or waivers to this policy that are consistent with United States Army and Federal Aviation Administration regulations. Field Operating Activities may request an exception to policy or waiver by providing justification that includes an analysis of the expected benefits endorsed by the Field Operating Activities Commander/Director.

Contents

1. Purpose

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2. Distribution statement

Approved for public release; distribution is unlimited.

3. References

See Appendix A.

4. Records management (recordkeeping) requirements

The records management requirement for all record numbers, associated forms, and reports required by this publication are addressed in the Army Records Retention Schedule. Detailed information for all related record numbers is located on the U.S. Army Corps of Engineers (USACE) Records Management Site https://usace.dps.mil/sites/INTRA-CIOG6/SitePages/Records-Management.aspx. If any record numbers, forms, and reports are not current, addressed, and/or published correctly, see DA Pam 25-403 for guidance.

5. Associated publications

The Aircrew Training Program (ATP), training, qualification, and currency will be according to the appropriate Army regulation, training circular or Commander/Director policy as appropriate. All USACE personnel performing duties directly associated with Uncrewed Aircraft Systems (UAS) and Small Uncrewed Aircraft Systems (SUAS) will receive qualification training in airspace structure and airspace management and/or coordination and will comply with this circular and all appendixes. Oversight of aviation contractors will be according to AR 95-20 and this circular.

6. Waivers and Delegation of Authority

Instructions:

a. Authority to grant waivers is specified in the paragraphs of this circular. Authority granted to USACE Commanders/Directors can be further delegated except when expressly prohibited.

b. When waiver authority is not specified in specific paragraphs, waivers may be granted by the USACE Aviation Program Manager.

c. The Aviation Program Manager is the initial approval authority for all flying waivers required to be processed through the Federal Aviation Administration (FAA), Department of Defense (DoD) activity, or host nation.

d. Nonstandard Group 1 and Group 2 SUAS with nontactical mission. USACE Group 1 and Group 2 SUAS procured for nontactical missions are exempt from the qualification, evaluation, currency, and record requirements of AR 95-1. The USACE Aviation Program Office (APO) will develop internal standardization, training, and safety programs to ensure safe operation and compliance with applicable laws, regulations, and FAA circulars.

7. Deviations

Emergency deviation:

a. Individuals may deviate from provisions of this circular during emergencies.

b. Report deviations from the provisions of this circular, FAA regulations, or host country regulations with details of the incident directly to the organizational commander/director, and the APO. Report incidents within 24 hours of occurrence.

8. Commander, US Army Corps of Engineers

The commander of USACE will:

a. Manage and report USACE aircraft status and usage.

b. Be responsible for all assigned USACE crewed and uncrewed aircraft In Accordance With (IAW) this circular.

c. Maintain individual flight records IAW Appendix B.

d. Monitor the USACE Aviation Standardization Program.

e. Oversee Safety of Flight (SOF) and Aviation Safety Action Messages (ASAMs).

f. Ensure appropriate utilization of approved USACE digital resources for SUAS mission planning, airspace, coordination, ATP management processes, inventory control, and reporting.

9. Aviation Program Manager

The USACE Aviation Program Manager (APM) will have staff responsibility for USACE aviation, to include the following:

a. Formulate policies, regulations, and standards for USACE aviation operations, aviation contractor oversight, technical fleet management, and the ATP.

b. Serve as the aviation liaison to the DoD, Department of the Army, and other Federal Agencies.

c. Implement and manage the Aviation Safety Program and participate in all Class A, B, and C accident investigations IAW AR 385-10, Army Safety and Occupational Health Program.

d. Be the proponent for aviation training, UAS crewmember certification, community of practice, and configuration management of uncrewed aircraft systems.

e. Provide policy, guidance, and support for the oversight of aviation contractors.

f. Supports USACE Operations Center and Civil Emergency Management Branch during times of natural disasters and other emergencies.

g. Conducts surveys and inspections of all Major Subordinate Commands (MSC), Centers, Field Operating Agencies (FOA)s, and the 249th Engineer Battalion Aviation Programs, in accordance with AR 95-1.

h. Proponent for USACE approved digital planning resource software.

10. Commander/Director will

a. For all USACE organizations with Aviation assets:

(1) Comply with information assurance requirements as applicable.

(2) Designate a point of contact to coordinate, as necessary, with the APO.

(3) Approve risk assessment and mitigation measures for USACE aircraft employment when the risk is commensurate with their position and mission is standard, aligned with the organizational mission, and conducted IAW and approved Air Worthiness Release (AWR).

(4) Ensure USACE aircraft, payloads, and applicable associated equipment meet country of origin and cyber security requirements outlined in the National Defense Authorization Act (NDAA).

b. For organizations with crewed aircraft:

(1) Ensure a Government Flight Representative (GFR) is qualified and appointed IAW AR 95-20.

(2) Ensure flight and crew information is entered in USACE approved digital resources.

(3) Approve passenger flights IAW OMB Circular A-126.

c. For organizations that contract for crewed aviation or enter educational partnerships:

(1) Ensure a GFR is qualified and appointed IAW AR 95-20.

(2) Ensure USACE provided payloads and sensors comply with DoD and Army country of origin and cyber security requirements.

d. For organizations equipped with SUAS:

(1) Designate and appoint the Master Trainer (MT) and SUAS Unit Trainer (UT) based on an assessment of knowledge, maturity, judgement, ability to train, and performance IAW this circular.

(2) When no personnel meeting MT requirements are available, the commander/director may designate and appoint a UT with a waiver from the first Colonel or GS-15 in the chain of command to perform limited MT functions until personnel meeting the MT requirements are available. Provide MT with a Group 1 and Group 2 SUAS training program for individual and mission tasks for the year.

(3) Integrate USACE Group 1 and Group 2 SUAS into civil works and emergency support management.

(4) Approve all records and reports generated by the MT and UT according to this circular.

(5) Ensure USACE UAS equipment status is accurately reported in approved USACE digital resources such as Mission Information System for Aviation and Remote Systems (MARS) and Operators Planning Tool for Information Collection (OPTIC).

e. For organizations equipped with Group 3 UAS:

(1) Ensure assigned personnel who perform Uncrewed Aircraft Crewmember (UAC) duties comply with the qualification, evaluation, currency, and medical requirements IAW AR 95-1, *Flight Regulations*, AR 40-501, *Standards of Medical Fitness*, and Appendix E of this circular.

(2) Ensure Group 3 UAS are acquired IAW Appendix E of this circular.

11. Master Trainer

The MT will have all the responsibilities of an operator and in addition will:

a. Manage ATP IAW Appendix B, as required.

b. Conduct initial qualification training when authorized by the USACE APM.

c. Serve as the commander/director’s technical advisor.

d. Assist and advise the commander/director to integrate USACE Group 1 and Group 2 SUAS into projects and emergency response.

e. Manage training records of USACE Group 1 and Group 2 SUAS operators IAW Appendix B.

f. Assist the commander/director to identify, assess, and mitigate risks associated with USACE Group 1 and Group 2 SUAS operations.

12. Unit Trainer

The UT will have all the responsibilities of an operator and in addition will:

a. Train Group 1 and Group 2 SUAS operators on the organizational processes and procedures.

b. Document and record operator training and evaluation on individual tasks in the individual flight training records in USACE approved digital planning resources and an electronic back up.

c. Report all incidents, personnel injury and equipment damage to the commander/director and MT IAW Appendix C.

13. Aircraft Operator

The USACE Group 1 and Group 2 SUAS Aircraft Operator (AO) will:

a. Complete SUAS qualification requirements as required IAW the USACE Aviation Program Office approved Program of Instruction (POI).

b. Will be current, qualified IAW the system category that they will perform operator duties.

c. Operate SUAS equipment in a safe and prudent manner.

d. Report unsafe operating conditions of SUAS equipment.

e. Report all accidents and incidents to their chain of command IAW command policy, applicable rules, and regulations, and this circular.

f. Comply with all applicable laws and regulations as required.

g. Ensure equipment is approved, authorized, properly serviced, and Fully Mission Capable (FMC).

h. Maintain individual training records, plan, execute, debrief, and maintain all missions in USACE approved digital resources.

i. Comply with applicable health and medical requirements and ensure ENG Form 6150 (Small Unmanned Aerial Systems Operator Health Self-Assessment Tool) is completed prior to flight.

14. Visual Observer

The Visual Observer (VO) is trained to assist the Aircraft Operator (AO) in the duties associated with collision avoidance, including but not limited to, avoidance of other traffic, clouds, obstructions, and terrain. They are responsible for the see-and-avoid requirement for Uncrewed Aircraft (UA) of any size or weight while operating in the National Airspace System (NAS).

a. A Visual Observer must:

(1) Be a qualified SUAS Aircraft Operator.

(2) Always maintain effective communication with the Aircraft Operator.

(3) Be able to see the uncrewed aircraft without any aids to vision, such as binoculars, field glasses, or telephoto television.

(4) Scan the airspace where the small uncrewed aircraft is operating for any potential hazard.

(5) Maintain awareness of the position of the small uncrewed aircraft through direct visual observation.

b. If there are not sufficient crewmembers available to perform both AO and VO duties, the commander/director or delegated representative may authorize an unqualified individual to conduct VO duties. Prior to conducting VO duties, the unqualified individual must be familiarized with the following topics:

(1) Identifying hazards to flight and communication

(2) Directional, steering, and flight path cues to avoid hazards

(3) Crew coordination

(4) Two-way radio communication

(5) Emergency coordination

(6) System limitations

(7) Medical requirements

Frequent utilization of unqualified VO’s requires and exception to policy from the USACE Aviation Program Manager.

15. Personnel Authorized to Operate US Army Corps of Engineers Group 1 and Group 2 Small Uncrewed Aircraft Systems

The following personnel may operate USACE Group 1 and Group 2 SUAS:

a. Any person in the Regular Army (RA), U.S. Army Reserve (USAR), U.S. Army National Guard (ARNG), USACE, or Department of the Army Civilians (DACs) who are current in the system type you are attempting to operate who:

(1) Received authorization from the owning commander/director or government civilian equivalent.

(2) Completed the qualification, evaluation, proficiency, and approval requirements of this regulation for SUAS operation.

b. Government contractors who:

(1) Completed the qualification, evaluation, proficiency, and approval requirements of this regulation for SUAS operation.

(2) Complied with the contract and statement of work for SUAS operation.

(3) Complied with Government Flight Representative approved, contractor flight procedure requirements listed in AR 95–20 to include medical requirements.

c. Meet the medical standards outlined on the ENG Form 6150.

d. Personnel who have not completed the qualification, evaluation, proficiency, and approval requirements on this circular for SUAS operation must be directly supervised by an MT and/or UT who is in compliance with all requirements to operate the UA when receiving training. This supervision must allow for the MT and/or UT to immediately access and control the UA.

16. Minimum Uncrewed Aircrew Member requirement

The minimum personnel required to operate USACE Group 1, and 2 SUAS is one qualified operator and one VO unless specifically stated otherwise in the respective SUAS operator's manual and FAA Certificate or Authorization or Waiver (COA).

17. Uncrewed Aircrew Member Qualification and Evaluation

a. The commander/director identifies individuals for SUAS qualification training based on their potential to operate the systems and accomplish the mission safely and effectively.

b. The minimum training requirements will be captured in the syllabus for Uncrewed Aircrew Member (UAC) training.

c. USACE SUAS Initial Qualification Training (IQT) is a non-system specific USACE approved POI that satisfies FAA certification requirements as well as DoD minimum UAS training requirements IAW CJCSI 3255.01, *Joint Uncrewed Aircraft Systems Minimum Training Standards*. USACE SUAS IQT must be conducted either at the USACE SUAS qualification course or by an approved MT or UT.

d. A qualified MT may be designated to conduct Initial Qualification Training IAW USACE approved SUAS qualification POI. Those MTs will be designated by the APO.

e. An initial evaluation is given by an approved MT and/or UT after IQT to certify the UAC abilities as qualified on the SUAS.

f. System specific qualification for non-standard SUAS will be conducted IAW manufacturer guidance, TC 3-04.62. and Appendix B of this circular.

g. The commander/director approves SUAS that the UAC is authorized to operate.

18. Non-standard Non-Tactical Small Uncrewed Aircraft System Procurement

a. Non-standard non-tactical (NSNT) SUAS are acquired, operated, and utilized by Federal employees and contractors to meet USACE operational/mission requirements when Army program of record aircraft is not sufficient to meet the needs of the mission. Requests for NSNT SUAS and SUAS Critical Electronic Component (CEC) Configuration not included in a current USACE Exception to Policy (ETP) Waiver will be submitted through the USACE Aviation Program Office Fleet Manager for evaluation and subsequent approval on the USACE ETP Waiver.

b. Requests for nonstandard nontactical aircraft will primarily be completed in USACE approved digital resources and include the following:

(1) Make and Model of Aircraft.

(2) Configuration Specifications. Additional documentation may be requested.

(3) Justification for new SUAS or CEC Configuration to include how existing USACE ETP Waiver-approved aircraft and/or aircraft configuration does not adequately meet mission requirements.

(4) Point of Contact for Request.

c. All operating costs and procurement of aircraft and spare parts associated with the acquisition and operation of non-standard nontactical aircraft will be the responsibility of gaining USACE Division, District, Laboratory, or Center.

d. All USACE SUAS inventory and acquired SUAS and CEC configurations must be added to the configuration and fleet management module in approved USACE digital resources (MARS/OPTIC) in the appropriate USACE Organization by the USACE APO to be authorized for operation.

e. The USACE APO will be the proponent for all USACE Aviation Operations Enterprise-wide to ensure consistent, standardized, and controlled operations and compliance with DoD/FAA/NDAA/OSD/Army/USACE SUAS Policy, Regulations, Operations, and Training requirements.

19. Maintenance

a. Maintenance of USACE Group 1 and Group 2 SUAS equipment shall meet the USACE standard outlined in ER 750-1-1, *Material Maintenance Policies.*

b. Maintenance of USACE Group 3 UAS and Crewed aircraft shall meet the USACE standard outlined in ER 750-1-1 and AR 95-1 or AR 95-20, as applicable.

20. Operations

a. Personnel engaged in the operations of USACE aircraft or contractor aircraft with USACE equipment installed shall comply with the applicable:

(1) International Civil Aviation Organization (ICAO) regulations.

(2) Host country regulations, laws, and rules.

(3) Applicable FAA rules and circulars.

(4) Military regulations and policies.

(5) Non-aviation federal and state laws applicable to USACE UAS operations.

(6) Approved Technical Manuals, Operator's Manuals, AWRs, and/or safety releases.

b. Multiple Uncrewed Aircraft. An operator may not operate more than one Uncrewed Aircraft at the same time unless authorized by a COA, AWR, and specified in the operator's manual.

c. Weather Planning. Weather information will be obtained from a U.S. military weather facility or approved weather forecasting providers. SUAS must comply with Visual Flight Rules (VFR) minimums.

(1) USACE UAS will not be flown into known or forecasted icing conditions.

(2) USACE UAS will not be intentionally flown into thunderstorms.

(3) VFR operation. Weather must be forecasted to be equal to or greater than VFR minimums from mission start through one hour after completion. When there are intermittent weather conditions, the predominant weather will apply.

d. Air Traffic Hazards. Missions employing UASs must consider hazards from a high volume of air traffic within urban areas includes rotary-wing, tilt-rotor, fixed-wing aircraft, commercial and military UAS, and civilian traffic. Electromagnetic effects and vertical obstacles also pose hazardous within the urban environment.

e. Flight Violations: Flight violations are defined as an act, regardless of intent, which results in airspace intrusion, an unauthorized mode of flight, and failure to comply with Air Traffic Control (ATC) or an approved COA. Flight violations are reported by crewmembers as soon as practicable IAW Appendix B of this circular.

21. Flight Operations in Federal Aviation Administration Managed National Airspace System

a. USACE UAS flights that occur within the NAS, DoD controlled airspace, or on DoD installations require prior approval through the appropriate FAA Department of the Army Regional Representative (DARR). For USACE UAS flights that take place inside a Restricted Area and do not stray outside the boundaries of that restricted area, approval is obtained through direct coordination with the controlling agency/range control.

b. When tasked to accomplish a mission in the NAS the request for a COA will be sent to the USACE APO via approved USACE digital resources (MARS/OPTIC). If the request cannot be authorized at the APO level, the APO will forward to the request to the appropriate FAA DARR for further review and routing to the appropriate approval authority.

c. Flights in the FAA managed airspace without a COA are prohibited unless specifically stated in this circular.

d. USACE crewed aircraft flights will be conducted IAW 14 CFR Part 91 and AR 95-20, as applicable.

22. Uncrewed Aircraft System Flight Operations Outside the Continental United States (OCONUS)

a. For USACE aircraft.

(1) Aircraft/system configurations shall be submitted to the APO for verification as NDAA, Army, and host-nation compliant.

(2) Mission planning, flight debriefs, and mishap reporting shall be completed in approved USACE digital resources (MARS/OPTIC).

b. For aircraft with USACE owned equipment installed:

(1) Aircraft/system configurations shall be submitted to the APO for verification as NDAA, Army, and host-nation compliant

(2) Cyber security and data safeguards shall be IAW Appendix D of this circular.

23. Public Aircraft Operations

USACE Aviation is a Public Aircraft Operation (PAO). This designation applies to all flights conducted by USACE personnel and contractors utilizing USACE-owned aircraft. It also applies to contractor owned and operated aircraft that meet the criteria of a PAO, per Title 49 of the United States Code, Section 40125, *Qualifications for Public Aircraft Status,* and as determined by the Aviation Program Manager. USACE PAOs shall be monitored by a USACE GFR IAW AR 95-20.

24. Civil Aircraft Operations

A Civil Aircraft Operation (CAO) is a flight activity which does not meet the qualifications for public aircraft status in 49 USC 40125, Q*ualifications for Public Aircraft Status.* SUAS CAOs on USACE lands and projects are prohibited unless monitored by a USACE Project Representative (PR) and/or qualified UAS Master Trainer (MT) with delegated authority. PRs/MTs are appointed in writing for the particular contract action by the Contracting Officers Representative (COR) to validate the contractor's SUAS fleet and periodically monitor flight operations for compliance with the cybersecurity rules, documentation of flights, compliance with aircraft configuration requirements, and airspace authorizations. As a CAO, the contractor assumes all operational risk and responsibility for flying Group 1-2 SUAS IAW 14 CFR Part 107, and Group 3 UAS IAW 14 CFR Part 91. To effectively monitor the contractors UAS activity, PRs and MTs will:

a. Conduct an initial site visit, and additional visits as required, to confirm the contractors UAS configuration and cyber security practices are IAW appropriate guidance.

b. Utilize the proper Contractors UAS Flight Request forms.

25. Oversight of Crewed Aviation

The USACE Aviation Program Office will maintain oversight of all contractor flight activities regardless of their status as a Civil or Public Aircraft Operation. This requirement shall not interfere with the duties and responsibilities of Program Managers, CORs, or GFRs assigned to MSCs with aviation contracts.

26. Aircraft Operation on USACE Lands, Projects, or Facilities

Title 36, Chapter III, Section 327.4 of the Code of Federal Regulations prohibits flying aircraft, including SUAS, on USACE projects and facilities without permission from the commander/director. This restriction does not apply to Federal, state, and local government aircraft on official business, emergency rescue aircraft, or aircraft forced to land due to an emergency.

a. Unauthorized flight activity: aircraft activity is characterized by prolonged orbiting flight and unsafe actions within proximity to USACE projects, lands, and facilities at very low altitude.

b. SUAS flights, conducted by individuals other than USACE employees and contractors, are not authorized without permission from the commander/director. FOAs should coordinate with the APO to identify local SUAS flight areas and airspace restrictions. Individuals who witness unauthorized SUAS activity should contact local law enforcement for assistance.

27. Safety

Safety, mishap reports, investigation, and release of information.

a. Procedures for investigating and reporting UA accidents are referenced in AR 385-10, DA Pam 385-40, and Appendix C of this circular

b. Commanders/Directors with organic UAS assets will integrate them into their accident prevention program.

28. Risk Management

a. Many UAS are not visible to the airspace controlling authority through radar, also known as positive control. Coordination measures and basic deconfliction methods (e.g., time, lateral, altitude, or combination thereof) that are used to procedurally control crewed aircraft can be used to control UAS. Simple routing of UAS transiting the airspace (e.g., paralleling roads, train tracks, power lines, lower transit altitudes, etc.) may help aircrew avoid UAS collisions and avoid airspace congestion.

b. Commander/Directors will integrate risk management into mission planning and execution at every level. Guidance on risk management in TC 3-04.62, ADP 5-0, ATP 5-19, DA Pam 385-30, and Appendix C of this circular.

c. All USACE UAS flights will be flown under an approved set of missions specified by a Daily Tasking Order (DTO), Operations Order (OPORD), or commander/director.

d. All USACE UAS flights must be approved by the appropriate risk level approval authority.

e. USACE UAS flights may have risk factor conditions, risk levels, and mitigations approved for a series of flights or missions within a definitive date range and geographical area. Examples include a specific mission or operation lasting several days with multiple separate flights, specific risk factors are approved with a low residual risk.

Note: The crew must request reapproval when risk factors are added, risk levels are changed, or mitigations are changed in respect to what has been approved.

29. Mission Environment Assessment

All data collection missions, regardless of location and aircraft type, require a documented terrain analysis of the area within 5 Nautical Miles of the intended flight path. Critical Infrastructure exposure risk is defined in a three-tiered criticality index based on Department of Homeland Security (DHS) and other Federal agency definitions. Mission Environment Assessments for all USACE operations will be conducted IAW Appendix C of this circular.

30. Safeguarding Privacy and Civil Liberties

Aircraft operations, either conducted by USACE employees or contractors supporting USACE, are prohibited from purposefully collecting data that is not directly related to the mission. Due to the proliferation of USACE aviation activity and the nature of airborne data collection, aircraft operators and crewmembers must remain vigilant against the inadvertent

collection of non-mission data. Non-mission data cannot be stored, examined, or disseminated.

31. Mandatory Airworthiness Release

Personnel shall only operate a USACE UAS or crewed aircraft with an Army AWR, safety release, or other Army recognized airworthiness approval IAW AR 70-62. AWRs will list all airspace that the UAS is authorized to fly in.

Note: Any modification to the UAS to include but not limited to CEC, software or hardware changes requires a new AWR.

32. System Security

UAS components, due to their technical nature, require security control measures to protect the hardware, software, firmware, and data, including connecting cables.

a. Classification. UA may be operated as an unclassified, sensitive, or classified system. Operators and organizational personnel will protect and safeguard their systems at the appropriate classification level designated in the respective operator's manual.

b. Access mechanisms. Consists of sensitive information such as interface control data, security keys, and user credentials.

(1) Access mechanisms will be protected from unauthorized use or disclosure.

(2) Remote access to underlying software beyond control software, to include privileged commands, is prohibited.

c. Processes and procedures for physical and cyber security are addressed in Appendix D of this circular.

33. Uncrewed Aircraft System Data Safeguards

USACE SUASs are maintained in a Closed Restricted Network (CRN) and data transfer is restricted to approved Air-Gapped machines. As part of the CRN, Ground Control Stations (GCS) will **NOT** be:

a. Connected to the internet or any other network.

b. Used to download basemaps or any other data from the Internet.

c. Connected to any USACE Information Technology Network.

d. Used for any purpose other than as the GCS of its associated UAS.

34. Information Assurance Measures

a. Commanders/Directors or Government Civilian Equivalent:

(1) Establish reasonable procedures to protect USACE UAS equipment and data from compromise, theft, or damage.

(2) Implement safeguards through policy to ensure USACE UAS ports are only connected to the same network levels of classification.

(3) Ensure operator security training requirements are met.

b. Aircraft Operators:

(1) Safeguard USACE UAS from unauthorized transmissions of data and manipulation of the hardware, resident software, and application software.

(2) Comply with established safeguards to ensure USACE UAS ports are not connected in any way to unauthorized networks.

(3) Ensure aircraft cameras are covered at all times before and after mission execution.

(4) Report to their immediate supervisor, any attempt to gain unauthorized access to sensitive information, any system failure, or any suspected defect leading to the unauthorized disclosure of sensitive information.

35. Publications

Approved Field Manuals, Technical Manuals, Training Circulars, Engineer Regulations, Engineer Pamphlets, and USACE training publications shall be referenced as required. When differences exist between other Army approved publications and this regulation, this regulation takes precedence. To submit recommended changes to training publications, DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) will be submitted through the unit commander to the proponent of the publication.

36. Mandatory Training Program

a. The UAS training program ensures readiness through achievable, repeatable, operator qualification utilizing all levels of training in the unit.

b. The ATP is mandatory for all USACE UACs. USACE Soldiers and civilian employees performing aviation duties will be trained and evaluated as specified in writing by the commander. They will complete the approved aircrew training task iteration and evaluation requirements as determined by the commander/hiring authority. Contractor requirements will be IAW AR 95-20.

c. All USACE UAS operators must complete their organizations training requirements prior to assuming operator duties.

d. Exceptions to the mandatory training program Include:

(1) USACE UACs assigned or attached to another Service shall meet the requirements of that Service.

(2) Unassigned contractors acting as visual observers must comply with para 14.

37. Training and Timeline Failure

a. When a training or evaluation time period requirement other than currency is exceeded, the MT will notify the commander and a remedial course of action along with a timeline will be recorded in the operators training record.

b. Remedial course of action may include but is not limited to:

(1) Waivers or extensions.

(2) Restricting operations or including mitigations until requirement is met.

(3) Removal from operations.

38. Training Waivers

a. Authorities listed below may grant waivers to USACE Group 1 and Group 2 SUAS training requirements to both assigned military and civilian UACs:

b. USACE Division, District, Labs, Centers, and Field Operating Activity (FOA) Commanders.

(1) Unit waivers. Unit waivers for primary Group 1 and 2 training requirements may be granted only by the first general officer in the chain of command or higher.

(2) Individual waivers. Individual waivers to primary Group 1 and 2 training requirements may be granted by the first commander, O-6 or above in the individual's chain of command.

(3) Waivers will indicate the specific requirement waived for the specified period.

39. Annual Evaluation

Each operator will complete one evaluation, every 12 months IAW Appendix B of this circular, to measure qualified, authorized operators' knowledge and application of academic subject areas as well as currency and readiness across all applicable systems.

40. Currency

Being current with a SUAS is having the minimum skill for the safe operation of the equipment. Proficiency usually degrades with time. USACE routinely utilizes non-standard SUAS to accomplish its mission. Currency in an aircraft of the same category will satisfy the requirement for all SUAS within the same category. Separate currency is required for all other SUAS outside of the category. SUAS can be classified into 3 categories listed below:

a. Multi-rotor.

b. Fixed wing.

c. Tilt Rotor/Vertical Takeoff and Landing (VTOL).

(1) If currency requirements for a SUAS are not specified, the following minimum requirements will apply:

(a) Assemble, prepare, and preflight the SUAS for operation every 180 days.

(b) Perform a launch, recovery, and flight using each flight mode in which the operator is expected to perform duties with the SUAS every 180 days.

41. Currency Lapse

An operator whose currency has lapsed for a SUAS type cannot operate the SUAS without the presence of a MT and/or UT. The operator must demonstrate proficiency to the MT and/or UT to reestablish currency**.** After 365 days of not operating, refresher training must be conducted IAW Appendix B.

42. Remedial Training

Commanders/directors or the government civilian equivalent will establish a remedial training program for personnel who have had operator at-fault accidents, misused equipment, or otherwise demonstrated a need for additional training. This training will be directed towards identifying and correcting individual weaknesses and not as a form of punishment.

43. Aviation Resource Management Survey

a. The USACE Aviation Resource Management Survey (ARMS) program is designed to assist the commander/director in assessing the readiness and resource management of all their aviation programs and assets. The ARMS evaluates the resource management of organizational aviation programs, provides staff assistance, and identifies internal and systemic issues for resolution.

b. ARMS will be conducted in each district's aviation program every 24-36 months, or as necessary, to assess organizational readiness.

c. The ARMS program lead will:

(1) Plan the ARMS schedule through quarterly and annual synchronization sessions.

(2) Maintain and store data metrics.

(3) Maintain program business rules.

(4) Outline specific functional areas for the survey, focusing the inspection on aviation specific functions that require additional scrutiny above the established command inspection program: flight operations, standardization, logistics, maintenance, safety, operations, and training.

d. The ARMS findings are confidential communications between the ARMS team and commanders/directors that are critical to ensure an open, candid exchange of information. They will be provided to the surveyed units upon completion, and an executive summary of the survey results will be forwarded to the organization through command channels.

44. Simulators

Simulation is very useful in the conduct of training. Simulators are excellent resources in training emergency procedures, maneuvers that are infrequently conducted with the uncrewed aircraft (UA), and as a rehearsal tool for complex portions of operations. They can also be used to correct negative trends found through analysis of accidents, and to practice those skills in a low-risk environment. As the fidelity of our simulators improves, environmental training can be very beneficial to our crews. The USACE APO will publish a list of approved SUAS simulators that can be used for training, rehearsals, and no-notice evaluations.

Appendix A
References

This section contains no entries

Section I

Required Publications

Unless otherwise indicated, all U.S. Army Corps of Engineers publications are available on the USACE website at https://publications.usace.army.mil. Army publications are available on the Army Publishing Directorate website at https://armypubs.army.mil. DoD Publications are available on the ESD website at https://www.esd.whs.mil.

ADP 5-0
The Operations Process

AR 25-1
Army Information Technology

AR 25-55
Army Freedom of Information Act Program

AR 40-501
Standards of Medical Fitness

AR 70-62
Airworthiness of Aircraft Systems

AR 95-1
Flight Regulations

AR 95-20
Contractors Flight and Ground Operations

AR 385-10
The Army Safety and Occupational Health Program

AR 750-1
Army Material Maintenance Policy

ATP 5-19
Risk Management

CFR Title 14, Part 91
General Operating and Flight Rules

CFR Title 14, Part 107
Small Uncrewed Aircraft Systems

DA PAM 385-30
Risk Management

DA PAM 385-40
Army Mishap Investigations and Reporting

EM 385-1-1
Safety and Occupational Health Requirements

ER 25-60-1
Record and Information Management Program

Public Law 114-322
Water Infrastructure Improvements for the Nation Act

TC 3-04.11
Commanders Aviation Training and Standardization Program

TC 3-04.62
Small Uncrewed Aircraft System Aircrew Training Program

Section II

Prescribed Forms

DA Form 2028
Recommended Changes to Publications and Blank Forms

ENG Form 6308
SUAS Air Mission Plan

ENG Form 6309
Daily Flight and SUAS Status Log

ENG Form 6310
SUAS Flight Mishap and Incident Report

ENG Form 3062
Contractor SUAS Flight Request

ENG Form 6311
SUAS Crewmember Grade Slip

ENG Form 6150
Small Uncrewed Aerial Systems Operator Health Self-Assessment Tool

ENG Form 6312
Aircrew Training Program Managers SUAC Task List

ENG Form 6313
SUAS Crewmember Training Record

Appendix B
Small Uncrewed Aircraft Systems Aircrew Training Program

The goal of the ATP is to produce mission ready SUAS operators. The ATP outlined in this circular is mandatory for all USACE SUAS crewmembers that perform duties controlling the flight of a SUAS or the operation of its mission equipment, as well as preparation, launch, and recovery tasks essential to operate the SUAS. The ATP includes requirements for tasks, qualifications, evaluations, and standards. The ATP is the commander's/director's set of policies for maintaining crewmember proficiency and mitigating risk.

B–1. Commander/Director

The commander/director is the primary training manager and trainer for the unit and is responsible for safety programs, standardization programs, and the ATP. The commander/director bases training on the organizations mission, maintains standards, and evaluates proficiency. The commander also provides the required resources and develops and executes training plans that result in proficient individuals, leaders, and organizations. The commander/director has subordinate leaders that help him or her plan and prepare SUAS training.

B–2. Master Trainer

a. The SUAS Master Trainer (MT) is the commander/director's technical advisor. The MT helps the commander develop, implement, and manage the ATP. The MT designated to conduct initial qualification training will conduct this training IAW a USACE APO approved training package.

b. Those MTs selected to conduct initial qualification training will be designated by the USACE Aviation Program Office.

B–3. Unit Trainer

Unit Trainers (UT) are experienced Aircraft Operators designated by the commander/director, or MT to train and evaluate crewmembers.

B–4. Visual Observer

The Visual Observer (VO) is trained to assist the Aircraft Operator (AO) in the duties associated with battery life monitoring and collision avoidance, including but not limited to, avoidance of other traffic, clouds, obstructions, and terrain. They are responsible for the see-and-avoid requirement for Uncrewed Aircraft (UA) of any size or weight while operating in the NAS.

B–5. Aircraft Operator

These individuals perform duties that are essential to the operation of the SUAS. The Aircraft Operator (AO) is responsible for safe mission execution and is the final authority for operating, servicing, and securing the UA.

B–6. Mission Briefing Officer

Mission Briefing Officers (MBO) are experienced aviation personnel that interact with the mission crew to validate the flight plan, risk assessment, and risk mitigation measures for the Final Mission Approval Authority.

B–7. Mission Coordinator

The commander/director may appoint a Mission Coordinator (MC) to act as the overall SUAS mission leader and operational authority. MCs are selected for their level of aviation proficiency, judgement, and communication skills. The AO is the automatic MC unless otherwise directed. MC and AO duties may be performed simultaneously.

B–8. Training Year

a. The ATP Year. Crewmember annual requirements are divided into two semi-annual periods that align with their birth month. For example, the first semi-annual period for crewmembers born in September begins on 1 October and ends on 31 March. The second semi-annual period begins on 1 April and ends on 30 September.

b. Adjustments to the ATP year. Commander/Directors, or Master Trainers may adjust a crewmember's ATP Year to begin on the first day of a different month by submitting justification to the USACE Aviation Program Office. A copy of the approved request will be included in the Crewmember's Individual Flight Training Records.

B–9. Failure to Meet Aircrew Training Program Requirements

When ATP requirements are not met, the commander/director will conduct an investigation. The commander/director will complete the investigation within 30 days of notification of the failure. After the investigation the commander/director will take one of the following actions:

a. Extensions of up to 30 days may be given on a one-time basis by the ATP commander/director to complete the requirements. The 30-day extension will start after the commander completes the investigation.

b. Extensions of up to 60 days may be given on a one-time basis by the USACE Aviation Program Manager to complete the requirements.

c. Request a waiver of requirements IAW this circular.

d. Enter restrictions imposed and waivers/extensions granted on ENG Form 6313 in the individuals training folder via approved USACE digital resources (OPTIC/MARS).

e. Restrict AOs from performing duties with the SUAS until ATP requirements are met.

f. Restrict AOs who fail a hands-on performance evaluation from performing the duty for which they were evaluated and failed. The restriction will apply to all SUAS within the same category. Restrictions will be entered on the operators ENG Form 6313 and will remain in effect until successful re-evaluation.

B–10. Suspension and Terminations

A suspension can either be done medically or non-medically and a termination can be done medically or non-medically.

a. Temporary medical suspension. A temporary medical suspension exists when an operator does not meet the medical fitness standards for flying duties IAW this circular, AR 40-501, *Standards for Medical Fitness*, and ENG Form 6150, *SUAS Operator health self-assessment* tool. Temporary medical suspensions are generally minor, self-inflicted, and likely to result in requalification within 365 days. UAS operators medically suspended will be considered qualified for aviation service unless such suspension continues for more than 12 months. UAS operators under temporary medical suspensions may not be assigned flying duties or operate the flight controls of a USACE aircraft.

b. Medical Termination. Medical termination from aviation service is required for medical suspensions that are not likely to result in requalification with or without a medical waiver within 365 days. Medical termination will result in the operator's termination of authority to operate any USACE aircraft or synthetic flight training system. Termination from aviation service will be affected on the first day following a period of 365 days that commences on the date of incapacitation or on the date a competent medical authority determines the medical incapacitation to be permanent, whichever is earlier.

c. Non-medical suspension. Any commander, director, or MT in the organization may impose a non-medical suspension. The commander/director/MT must determine whether the operator is unfit for flying duty because of one or more of the conditions in this regulation.

d. A temporary suspension is mandatory when the commander/director/MT intends to terminate an operator's aviation service. The leader imposing the suspension will inform the UAS operator, in writing, of the effective date and the reason that the operator will be suspended. The operator will then promptly acknowledge the suspension in writing.

e. While suspended, an operator will not be assigned flying duties.

f. Any Commander, director, or MT that is authorized to impose a temporary suspension may remove the suspension and restore the operators to flying status.

g. Non-medical termination. Terminations are serious matters and must be considered carefully at all levels of command. In the final analysis, the best interest of USACE remains the prime consideration in evaluating each case.

(1) Operators may be non-medically terminated voluntarily at the operators' request.

(2) UAS operators may be non-medically terminated for cause at any time after completion of the SUAS Initial Qualification Course for the following reasons.

(a) Disciplinary actions taken.

(b) Failure to meet ATP requirements unless waived.

(c) Failure to maintain medical certification for flying duty.

(d) Flagrant violations of flying regulations. Flagrant, including but not limited to intentional or repeated, violations may show a lack of judgement or proficiency that renders the operator unfit or unqualified to perform duties.

(e) Undesirable habits or traits of character. Evidence that shows that the operator is emotionally unstable or has undesirable personality traits that may affect duties as a UAS operator. These traits include, but are not limited to alcohol abuse, illegal use of hallucinogenic, narcotic, federally controlled drugs or substances, incarceration as the result of judicial action: or willful concealment or disqualifying medical history.

(f) Unsatisfactory duty performance. Evidence that shows the overall duty performance is unsatisfactory. This may result from performance that may or may not involve operation of the UA and may be the result of lack of motivation, improper attitudes, or inability to perform the duties of a UAS Operator. The individual's overall demonstrated performance as a UAS Operator is to be considered and a judgment made as to whether the facts are such that he or she should be removed from continued aviation service.

(g) Insufficient motivation. Lack of motivation is any self-imposed deficiency not covered under medical unfitness in AR 40–501 and ENG Form 6150 that limits the duty of the operator or the organizations mission. The underlying cause may, but need not, be determined. Insufficient motivation may be proven by unjustified deficient conduct, such as refusing to fly a specific aircraft or category, type, or model of aircraft or refusing to fly certain missions. This should not be confused with valid safety concerns.

(3) Requalification. Operators may request requalification and restoration of aviation service when the original reason(s) for the disqualification no longer exists. If the request is approved, the UAS Operator may be reassigned to a position of UA flying duty.

B–11. Currency

Frequency. To be considered current a SUAS operator must meet both of the following two actions:

a. Assemble, prepare, and preflight the SUAS for operation every 180 days.

b. Perform a launch, recovery, and 10-minute flight using each flight mode in which the operator is expected to perform duties with the SUAS every 180 days.

c. Currency lapse. a SUAS operator whose currency has lapsed must complete a Proficiency Flight Evaluation (PFE) IAW this circular.

d. Waivers. Waivers to currency may only be granted by the USACE Aviation Program Manager, HQ USACE.

e. Currency in an aircraft of the same category will satisfy the requirement for all SUAS within the same category. Separate currency is required for all other SUAS outside of the category. SUAS can be classified into 3 categories listed below:

(1) Multi-rotor.

(2) Fixed Wiring.

(3) Till Rotor/VTOL

B–12. Evaluation Principles

The value of any evaluation depends on strict adherence to the fundamental principles described below.

a. Selection of MTs. The selection of MTs must not be based only on technical qualifications. Criteria for selecting MTs should include demonstrated performance, objectivity, powers of observation, maturity, judgment, the ability to effectively mitigate risk, and the ability to provide constructive comments.

b. Method of evaluation. The method of evaluation must be based on uniform and standard objectives. In addition, the evaluation method must be consistent with the organization's mission and adhere to the appropriate standing operating procedures (SOPs) and regulations. Evaluations may be conducted during a mission in which the MT observes and evaluates the UAC.

c. Participant understanding. Complete understanding of the purpose of the evaluation, by all concerned, is essential. Moreover, the evaluation must be conducted in a manner that is purpose oriented.

d. Participant cooperation. Cooperation by all participants is necessary to fulfill the evaluation’s objectives. The emphasis is on all of the participants, not just the examinee.

e. Training needs identification. MTs will use the ENG Form 6311 to identify specific findings and associated training needs. General comments do not always provide the direction and guidance essential for improvement. The evaluation must pinpoint both strengths and weaknesses.

f. Purpose of evaluation. The evaluation will determine the examinee's ability to perform essential hands-on/academic tasks to prescribed standards IAW this circular and the organizations SOP. Flight evaluations also will determine the examinee’s ability to exercise crew coordination in completing these tasks.

Note. All evaluations of an MT will be conducted by an MT.

B–13. Annual Proficiency and Readiness Test

Purpose and components. The Annual Proficiency and Readiness Test (APART) consists of a written examination and a hands-on performance test evaluated by an MT as follows:

a. SUAS operator's written examination. This open-book exam is prepared at the local level and consists of 25 objective questions that cover the SUAS operator's manual, Aircrew Reading File, local SOP, and other pertinent topics as determined by the commander and MT. The minimum passing score is 70%.

b. Hands-on performance tests. This component consists of oral and flight position evaluations.

c. APART periods. Operators must complete each component of the test during their APART period. The APART period is the 3-month period ending on the last day of the operators' birth month. At the end of the APART period the commander/director must certify that the operator has completed all APART requirements.

d. Commanders/Directors may establish a different APART period when integrating a new UAC into the TAP. Subsequent adjustments must be approved by the USACE APM.

B–14. No Notice Evaluation

A comprehensive no-notice evaluation program is a valuable tool that allows commanders/directors to monitor training effectiveness at all levels. Each commander/director must establish a no-notice proficiency evaluation program in their organizations SOP. No-notice evaluations may be written, oral, or hands-on flight evaluation in a UA/approved flight simulator, or a combination thereof. This program measures the effectiveness of USACE SUAS operator training. Commanders/Directors use the results of no-notice evaluations to ensure the organizations standardization and readiness and to tailor the organizations training programs. Each operator will receive at least one no-notice evaluation every two years.

B–15. Proficiency Flight Evaluation

The Proficiency Flight Evaluation (PFE) is an evaluation to determine operator proficiency and/or regain currency. The PFE should include tasks from each flight mode in which the operator can expect to perform duties. The results of the PFE will be documented on the operators ENG Form 6313.

B–16. Conducting Evaluations

Purpose, sequence, and procedures. Evaluations are conducted to determine the operator's ability to perform appropriate duties. Phase 1 and phase 4 are always required. The MT will determine the amount of time devoted to each phase.

a. Phase 1 – Introduction. In this phase the MT:

(1) Reviews the examinees records to verify that the examinee meets all prerequisites for the qualification.

(2) Confirms the purpose of the flight evaluation, explains the evaluation procedure, and discusses the evaluation standards and criteria to be used.

b. Phase 2 – Academic/Oral examination. The examinee must have a working knowledge of all applicable topics in the respective subject areas. At a minimum, the MT will select two topics from the subject areas below:

(1) ATP requirements.

(2) SOP requirements.

(3) Weather restrictions and procedures.

(4) Forms and records.

(5) Operating limitations and restrictions.

(6) SUAS emergency procedures and malfunction analysis.

(7) USACE mission tasks.

(8) Mission planning steps.

(9) Safeguarding data.

(10) Airspace considerations.

c. Phase 3 – Flight evaluation. If this phase is required, the following procedures apply:

(1) Briefing. The MT will explain the evaluation procedure and brief the examinee on which tasks will be evaluated. The MT will conduct or have the examinee conduct a crew briefing.

(2) Before flight procedures. The MT will evaluate the examinees use of the appropriate Technical Manuals (TMs), checklists (CLs), and other required documents/publications.

(3) Flight tasks. The MT will evaluate all required tasks. An MT must demonstrate the ability to instruct and/or evaluate the appropriate tasks.

(4) After landing tasks. The MT will evaluate the examinees use of appropriate TMs, CLs, and other required documents/publications s appropriate.

d. Phase 4 – Debriefing. Upon completion of the evaluation, the MT will:

(1) Discuss the examinees strengths and weaknesses.

(2) Offer recommendations for improvement.

(3) Inform the examinee if he or she passed or failed the evaluation and discuss any tasks not performed to standards.

(4) Complete the applicable/appropriate forms, and ensure the forms are reviewed and initialed by the examinee.

(5) Inform the examinee of any restrictions, limitations, or revocations that the MT will recommend to the commander/director following an unsatisfactory evaluation.

B–17. Individual Operator Training Record

a. The commander/director must ensure that a training record is prepared and maintained for each SUAS operator within the organization. Individual operator training records are permanent records of the crewmembers training and operational history. Individual training record forms are:

(1) ENG Form 6150, SUAS Operator Health Self-Assessment Tool.

(2) ENG Form 6312, Aircrew Training Program Managers SUAS Task List.

(3) ENG Form 6313, SUAS Crew Member Training Record.

(4) ENG Form 6311, SUAS Crewmember Grade Slip.

(5) Miscellaneous Certifications.

b. Individual Operator Training Record storage and maintenance. The MT maintains up to date training records in each crewmembers MARS/OPTIC profile and will save a second copy elsewhere to protect against data loss. The MT will ensure that the backup records are updated at the end of every semi-annual period.

B–18. ENG FORM 6312, Master Trainers Small Uncrewed Aircraft System Task List

The MT uses this form to designate flight duties, flight modes, currency requirements, and evaluations. Crewmembers must sign the ENG Form 6312 prior to flying in the new ATP year, certifying that they understand the requirements.

Following are Instructions for completing ENG Form 6312:

a. Part I, Biographical:

(1) NAME: Enter Crewmember’s name (Last, First, M.I.).

(2) ORGANIZATION: Crewmember’s Organization / FOA.

(3) MONTH ATP YEAR BEGINS: Select the first month of the ATP year from the pull-down menu on the electronic form, or write it in the space provided, in accordance with PARA B-9.

b. Part II, Authorized duties (Check box for each authorized duty position):

(1) VO: Visual Observer

(2) AO: Aircraft Operator

(3) UT: Unit Trainer

(4) MT: Master Trainer

c. Part III, Authorized flight modes (Check box for each authorized mode of flight):

(1) DAY: No flights during periods of civil twilight (30 minutes before official sunrise and 30 minutes after official sunset)

(2) NIGHT: Period between official sunset to sunrise.

(3) BVLOS: Beyond Visual Line of Sight.

(4) Single Crew: Must be authorized by the APM.

d. Part IV, Currency Requirements:

(1) ATP Year: Enter the last two digits of the beginning year and ending year in the spaces provided using the following format: YY to YY.

(2) 1st Semi-Annual Period: This period begins on the first day of the ATP Year. Select the appropriate dates from the pull-down menu on the e-form or write them in the space provided in the following format: DD-MMM.

(3) Flights (required): Enter number of flights (minimum of 1) for each period of the ATP Year.

(4) Flights-Required Adjustments: MTs may increase from the base-standard of one flight per Semi-Annual Period. Select the appropriate justification from the pull- down menu on the e-form or write one in the space provided.

(5) Flights-Actual Adjustments: If the Crewmember did not complete the required flights for a semi-annual period, the MT selects the appropriate entry from the pull- down menu in the events column on the Crewmember’s ENG Form 6313, SUAS Crewmember Training Record.

(6) Flights (actual): Enter the number of flights during that period.

e. Part V, Evaluation requirements: Enter the dates (dd-mmm-yy) of the completed evaluation.

f. Part VI, Certification/Remarks: The MT generates and signs a new ENG Form 6312 at the beginning of each ATP year or resuming flight duties.

B–19. ENG FORM 6313, Small Uncrewed Aircraft System Crewmember Training Record

The ENG Form 6313 is a permanent record of significant events throughout a crewmember's operational history. Event entries are selectable from the event line pull-down menu and divided into four categories. Those categories and their associated events are:

a. Mandatory entries at the beginning of each ATP year:

(1) New ENG Form 6312, Aircrew Training Program Manager's SUAS Task List, signed and posted to the individual Training Record.

(2) New ENG Form 6150, Small Uncrewed Aerial Systems Operator – Health Self-Assessment Tool, signed and posted to the Individual Training Record.

b. Additional entry for new crewmembers: SUAS Qualification complete.

c. Mandatory entry at the end of each ATP year (choose one; explain action taken if ATP requirements not met):

(1) ATP annual requirements met.

(2) ATP annual requirements not met (requires additional free-text entry explaining circumstances and path forward).

d. Additional entries as required:

(1) Night flight authorized

(2) BVLOS-Day flight authorized

(3) BVLOS-Night flight authorized

(4) FOA-Specific mission training complete (add further details if applicable

(5) 30-day extension for (enter ATP requirement) – approved by commander/director.

(6) 60-day extension for (enter ATP requirement) -approved by APM.

(7) Proficiency flight evaluation complete

(8) Crewmember involved in accident or incident ENG Form 6310, SUAS Flight Mishap and Incident Report, posted.

(9) Post-Mishap Flight Exam completed; return to flight duty authorized.

(10) Designated as Unit Trainer for (enter FOA)

(11) Designated as Master Trainer for (enter FOA)

(12) Designated as Mission Briefing Officer for (enter FOA)

(13) Designated as Final Mission Approval Authority for (enter FOA)

(14) Transferred from (enter FOA)

(15) Removed from ATP

(16) (Enter Free text)

Appendix C
USACE Aviation Operations and Safety

Section I

Operations

C–1. Aviation Operations

USACE Aviation conducts a variety of missions in both the NAS and DoD controlled airspace. USACE SUAS operations will be conducted IAW the operating limits of 14 CFR Part 107.

C–2. Online Resources

a. USACE primarily utilizes approved digital resources (OPTIC/MARS) to plan, approve, and archive missions. Online resources are also the primary tool to manage the ATP and maintenance programs.

b. When digital resources are not available operators must complete and submit all required forms outlined within this Appendix. The data from the forms will be input into online resources as soon as they become available.

C–3. Prohibited Missions

USACE owned and contracted aircraft will be used for authorized purposes only. USACE owned aircraft will not be used in any manner outside of the definition of PAO.

C–4. Operating Limits

SUAS operations within the NAS must adhere to the following limitations:

a. SUAS cannot exceed 87 knots or 100mph ground speed.

b. SUAS cannot exceed 400 ft above ground level (AGL), unless within a 400-foot radius of a structure and its uppermost limit.

c. SUAS must adhere to VFR minimums:

(1) Visibility of 3 statute miles (SM).

(2) Ceilings of 500 ft above mission altitude.

(3) 2000 ft horizontal separation from clouds.

(4) SUAS crewmembers must be able to see and avoid other aircraft.

(5) SUAS operations must not occur BVLOS of the VO.

(6) Prolonged SUAS flights over people require prior written permission from the APO.

(7) Simultaneous control of multiple UAs by a single AO is prohibited unless specifically authorized in the UAs operator's manual and approved by the APM.

(8) Visual observation of multiple UAs by a single VO is prohibited.

C–5. Flight Modes

USACE SUAS flight modes are divided into two categories. Standard flight modes do not require any additional authorization or training. Special flight modes require additional training and approval prior to execution.

a. Standard flight modes

(1) Day – the period between 30 minutes prior to official sunrise and 30 minutes after official sunset.

(2) Visual Line of Sight – visual contact with the UA is maintained by the AO or the AO can determine the location of the UAS with assistance of the VO.

(3) Flight over people when the UA maintains lateral separation from personnel IAW this Appendix.

b. Special flight modes

(1) Night – the period between 30 minutes after official sunset and 30 minutes before official sunrise. UAs not equipped with anti-collision lights that are visible at a minimum of 3 Nautical Miles (NM) will not be flown at night. UAS night lighting requirements will be IAW CFR 91.209.

(2) Beyond Visual Line of Sight – any point of the mission when the AO and/or the VO cannot maintain visual contact with the UA. All BVLOS operations must be approved by the Aviation Program Manager.

C–6. Lateral Separation from People

a. Risk to personnel and property on the ground from SUAS operations can vary significantly based on the weight, altitude, airspeed, and design of the airframe. Risk increases exponentially as size, weight, and airspeed of the SUAS increases. USACE SUAS operations will not be conducted over people not participating in the mission. Commanders/Directors must ensure that risk mitigation measures are implemented to the greatest extent possible to minimize the probability and severity of SUAS operational risks.

b. Risk mitigation measures can include:

(1) Lateral separation.

(2) Adjusted altitudes.

(3) Personnel working under cover.

(4) Personal protective equipment.

(5) Adjusting timeframes.

C–7. Minimum Crew

The minimum crew to operate an USACE UAS in an AO and a VO. Exceptions to this rule are granted via waivers from the USACE APM.

C–8. Aircrew Information Reading File

The Aircrew Information Reading File (AIRF) is managed by the Aviation Program Office and supplemented for local operations by the organizations MT. The AIRF will contain reference material pertinent to USACE aviation policy, operations, standardization, and safety. The APO will post new information as it is received or developed to ensure all operators and crewmembers have access to and are aware of current procedures, policies, and directives.

a. Approved USACE digital resources will be utilized to access the AIRF.

b. All operators and crewmembers must verify that all items within the AIRF are read and understood prior to conducting any flight operations.

C–9. Aircrew Information Reading File

Operator and crewmember checklists (CLs) will be used for preflight through post flight checks. While the UA is airborne and time does not permit utilization of the checklist or when its use would cause a safety hazard, such as an emergency or potential airspace violations, required checks may be accomplished from memory.

Section II

Mission Planning

C–10. Mission Approval Process

USACE Aviation mission planning is an iterative process that is primarily completed in via approved USACE digital resources (MARS/OPTIC). Mission planning begins when an order, mission, or tasking is issued and continues until execution of the mission. Commanders, directors, and MTs will monitor and oversee the planning process by utilizing a 3-step mission approval process.

a. Initial mission approval. When an order, tasking, or mission is received the commander, director, and MT will review the task to ensure that it is an authorized mission for USACE aviation, the availability of operators, crewmembers, aircraft, and equipment. This is not a detailed hazard or risk analysis but rather an assessment of the organizations ability to accomplish the mission. Upon completion of initial mission approval, the mission or task will be assigned crewmembers who will complete more detailed mission planning.

b. Mission planning and briefing. This step involves detailed planning, risk assessment and risk mitigation by the aircrew, and review by the MBO. Briefers are authorized to brief missions regardless of the level of mitigated risk. Self-briefing is not authorized unless approved by the USACE APM. Interaction between the crew and the briefer is paramount to identify, assess, and mitigate risk for the specific mission. At a minimum, briefers will review and assess the following key areas.

(1) The flight is in support of an authorized mission.

(2) The aircrew thoroughly understands all mission details.

(3) Assigned crewmembers are allocated appropriate mission planning time. The mission is adequately planned to include airspace considerations, Notice to Air Missions (NOTAMS), and coordination with the supported element.

(4) Crewmembers are current, qualified, medically fit, and the AIRF is reviewed.

(5) Forecast weather conditions for the duration of the flight period meet the requirements of this circular.

(6) Risk management is completed, and risk is mitigated to the lowest level feasible.

(7) Required equipment is authorized, approved, and fully mission capable.

c. Final mission approval. Based on the resulting mitigated risk, the appropriate final mission approval authority reviews the mission validity, planning, risk mitigation, and authorizes the operation. If a crew or mission parameter change increases the resultant risk the AO will be re-briefed, and the mission reapproved as required.

d. Final Mission Approval Authority. Members of the chain of command who are responsible for accepting the risk and approving all aviation operations within their organization. They approve missions for a specific risk level. Final mission approval authorities may only approve those missions whose assessed risk level is commensurate with their command level. Commanders in the grade of O–5 or their civilian equivalent and above will select final mission approval authorities from the chain of command and designate them in writing along with the level of risk (low, moderate, high, extremely high) they are authorized to approve. At a minimum, O-3 level commanders, or their civilian equivalent are the final mission approval authority for low-risk missions, O-5 level commanders, or their civilian equivalent and above for moderate-risk missions, O-6 level commanders, or their civilian equivalent and above for high-risk missions, and the first general officer in the chain of command for extremely high-risk missions. Approval authorities are based upon levels of command authority and not rank. For organizations lacking these positions, the first O-6 or above in the Chain of Command may adjust them within these guidelines.

C–11. Mission Planning Considerations

The following are some considerations that should be addressed during mission planning. All missions will have different variables and complexities that should be addressed on a

case-by-case basis. The following are considerations that are suitable for a majority of UAS flights.

a. Determine airspace classifications and associated requirements.

b. Submit COA requests through MARS/OPTIC, if necessary.

c. Submit NOTAMS through the FAA.

d. Evaluate forecasted weather conditions during mission timeline.

e. Assessing the mission environment.

f. Selecting the appropriate equipment.

g. Proper completion of the mission packet in USACE approved digital resources or on paper forms.

C–12. Uncrewed Aircraft System Mission Forms

a. USACE Aviation utilizes standardized forms for UAS air mission planning, debriefing, and mishap reporting. Proper utilization of the mission planning functions in MARS/OPTIC will automatically populate required forms.

b. If MARS/OPTIC is not available, crewmembers will use paper forms to plan and record air missions. The paper forms will then be uploaded into MARS/OPTIC when the system becomes available. Current versions of all USACE Aviation forms can be found in the MARS/OPTIC reference library.

c. The following is a list of USACE Aviation forms that are used for mission planning, debriefing, and reporting.

(1) ENG Form 6308, SUAS mission plan. ENG Form 6308 is the basis for the digital resources Mission Planning Module. Proper utilization of ENG Form 6308 will ensure the mission plan meets USACE and FAA regulatory requirements.

(2) ENG Form 6309, Daily flight and SUAS status log. ENG Form 6309 is the basis for the digital resources debrief function. Proper utilization of ENG Form 6309 will ensure the mission debrief will populate all applicable sections of MARS/OPTIC for personnel and equipment status.

(3) ENG Form 6310, SUAS flight mishap and incident report. ENG Form 6310 is a standalone form that crewmembers submit within seven days of a mishap, incident, or near miss. A mishap is an event which results in destruction or loss of a UA, property damage, or personal injury. An incident is an event that results in airspace violations, unauthorized use of land, prolonged flight over people not involved with the mission, and inadvertent collection of data not associated with the mission. A near miss is an unplanned event that has the potential to cause but does not actually result in any of the events listed above. Reports of a mishap or incident are mandatory. A near miss report is optional but highly encouraged to help prevent future mishaps or incidents.

Section III

Safety

C–13. Aviation Safety Policy

The USACE Aviation Safety Program is based on AR and DA PAM 385-10, The Army Safety Program. The APO will implement the USACE Aviation Safety Program and provide oversight through the USACE ARMS program. Commanders, Directors, and MTs will implement local safety programs that promote risk management during all phases of aviation operations and crewmembers will actively participate in the risk management process.

C–14. Aviation Safety Oversight

The APM is responsible for overseeing, tasking, and resourcing the USACE ARMS program to examine trends, standardize operations, and identify organizational risk. The ARMS will be conducted by a team of subject matter experts to examine all aspects of USACE aviation operations. USACE organizations with an aviation program will be assessed every 24-36 months, or as necessary, to assist commanders/directors in assessing their program.

C–15. Contractor and Crewed Aviation Policy

USACE aviation GFRs are the APMs point of contact for contractor aviation safety and will conduct oversight and assessments IAW AR 95-20 and this circular.

C–16. Aviation Pre-Accident Plan

USACE Aviation pre-accident plans are based on guidance provided in DA PAM 385-10, Army Safety and Occupational Health Program Procedures. They will be incorporated into the Aircrew Information Reading File and at a minimum will cover:

a. Duties and responsibilities of each crewmember immediately following an incident.

b. Incident notification and reporting procedures.

c. Duties and responsibilities for the Commander/director, MT, and AO.

d. Guidelines for collection of biological examples from crewmembers following a mishap.

e. Preliminary data collection to aid in accident investigations.

f. Guidelines for coordinating with the tenant activity and external agencies, as necessary.

C–17. Risk Management

Risk Management (RM) is the process to identify, assess, and control risks and make decisions that balance risk costs with mission benefits. USACE RM to help maintain resources while ensuring mission accomplishment in current and future operations. There are 4 principles to RM:

a. Integrate RM into all phases of operations. USACE should integrate RM throughout planning, preparation, execution, and assessment activities.

b. Make risk decisions at the appropriate level. A risk decision is a commander, director, leader, or individuals' determination to accept or not accept the risks associated with an action. RM is only effective when specific information about hazards and risks is passed to the appropriate level of authority for a risk decision.

c. Accept no unnecessary risk. An unnecessary risk is any risk that, if taken, will not contribute meaningfully to mission accomplishment or will needlessly endanger lives or resources.

d. Apply risk management cyclically and continuously.

C–18. Risk Management Responsibilities

a. Leaders:

(1) Managing risks is a leadership responsibility. At the crewmember level, MTs and instructors are the principal risk managers. Planning must incorporate considerations for known hazards and must address appropriate control measures to minimize exposure to these hazards. RM is introduced in the planning phase of a mission but for MTs, RM is not complete until debriefing is complete.

(2) To meet these responsibilities, leaders do not accept unnecessary risk. If the risk can be eliminated or reduced and the mission can still be accomplished, the risk is mitigated and acceptable. Find ways to mitigate the risk that will still allow completion of the mission. Once hazards are identified and controls recommended, compare, and balance the residual risk against the mission expectation.

(3) Make decisions at the proper level. Decisions made at the proper level eliminate the involvement of commanders/directors not normally in the mission or commanders/directors that are not authorized to accept the level of risk. AOs must know the appropriate level of approval authority based on the level of risk. The risk approval authority will vary between organizations.

b. Aircrews: Crewmembers are a critical part of the RM process. They perform the mission and their involvement in the planning phase is crucial to the identification of hazards and controls. Crewmembers must clearly understand the controls implemented to mitigate risks.

c. Individuals: Self-discipline is critical to mission accomplishment and an effective RM program. The best RM plan is worthless if individuals performing the mission do not adhere to established controls or do not perform the tasks to standard. While performing the mission, conditions, hazards, and risks change by necessity, RM controls may change. The individual must constantly assess the conditions and apply the principles of RM to ensure minimum risk to themselves, the aircraft, and the mission.

Appendix D
Safeguards, Physical, and Cyber Security

Section I

Small Uncrewed Aircraft Systems Data Safeguards

D–1. Aviation Pre-Accident Plan

USACE Aviation safeguards data through a combination of DoD, Army, USACE, National Institute of Standards and Technology (NIST), and NDAA compliant software, hardware, and procedural controls.

D–2. Data Safeguard Procedures

USACE SUAS are maintained in a CRN and data transfer is restricted to approved Air Gap machines and procedures. As part of the CRN, GCSs will:

a. Not be connected to the internet or any other network.

b. Not be used to download basemaps or any other data from the internet.

c. Not be connected to any USACE information technology network.

d. Not be used for any purpose other than as the GCS of its associated UA.

D–3. Data Transfers

Data transfers to and from USACE information system networks must be completed via a CIO or G6 approved Air-Gap computer. The Air-Gap computer is a standalone type II system used solely to screen for cyber threats prior to entering the USACE information system network and:

a. Must not be connected to any other system or network such as the internet, Internet Service Provider (ISP), Defense Research and Engineering Network (DREN), Non-classified Internet Protocol Router Network (NIPRNet), or Secret Internet Protocol Router Network (SIPRNet).

b. Must not transmit, receive, route, or interchange information outside of the system.

c. May have removable or external media capability which includes but is not limited to, electrically erasable/programmable flash media (for example, USB drives, and compact flash), external magnetic media (for example, floppy disk, and external hard drive) and optical drives (for example Compact Disk), or a single purpose printer.

d. Must operate in a single mode: sensitive but unclassified.

e. May be designed to process any type of information.

D–4. Closed Restricted Network Mobile Map Server

The Mobile Map Server (MMS) is a standalone encrypted Wi-Fi Direct Server that provides basemap services within a CRN for mission planning with GCS that do not support air-gapped basemaps. Regardless of GCS-type, the MMS is a best practice because it allows crewmembers to make real-time routing changes in the field.

D–5. Safeguarding Responsibilities

a. MTs are responsible for verifying SUASs and associated media storage are kept in a locked case or secure area. The MT also coordinates with the USACE APO to:

(1) Receive or transfer new SUASs, including the GCS, and software updates.

(2) Receive and transfer MMS software updates.

(3) Monitor proper use of the Air-Gap computer.

(4) Sanitize relevant data prior to transferring or destroying SUAS components.

(5) Load necessary software/data sanitized by the transferring organization, as necessary, prior to operating the SUAS.

b. Operator Requirements.

(1) Ensure UA and components are not connected to the internet.

(2) Cover the camera when not in use.

(3) Treat all data collected as sensitive.

(4) Never operate over people, sensitive facilities/equipment/activities unless authorized by the APO.

(5) Address safeguarding responsibilities in crew briefing.

(6) Utilize and adhere to the appropriate operators' checklists.

c. Requirements when operating over DoD facilities.

(1) All C2 links must be encrypted to a minimum of AES 128.

(2) Cover the camera when not in use.

(3) Use only SUAS configurations approved on the DIU Blue cleared list or current USACE ETP waiver. (Approved configurations can be found on MARS/OPTIC or by contacting the APO).

D–6. SUAS Cyber Security Risk Mitigation

USACE uses a cyber security risk mitigation strategy designed by the USACE APO and approved by the USACE Cyber Approving Official (AO) to prevent potentially malicious

code from being introduced into USACE networks. NDAA compliant stand-alone laptop/tablet computers provided by USACE, or the SUAS vendor, that are in the approved configuration for the associated SUAS, are used as GCSs.

a. USACE GCS computers have the following procedural constraints:

(1) Must be NDAA Compliant and operated within an approved configuration for the SUAS.

(2) Must be encrypted for all controlled environment missions.

(3) Frequency Hopping Spread Spectrum (FHSS) for all benign environment missions.

(4) GCS is not permitted to be connected to the internet.

(5) GCS is not permitted to be connected to any Information Technology (IT) Network.

(6) GCS will not be used for any other purpose.

b. Flight data collected during the SUAS mission is recorded on a removable memory medium; then must be scanned for malicious code using an Air Gap Process before being brought into USACE networks. The Air-Gap computer can only be operated by individuals who have completed Information Assurance (IA) fundamentals training.

c. Radio modem links between GCS and the SUAS use FHSS technology on transmitted signals, protecting the command and data links. Backup Radio Controlled (RC) radios also use FHSS and are uniquely paired to each aircraft. Pairing a different RC with the SUAS requires physical possession of the SUAS effectively preventing malicious backup RC intervention of the SUAS flight.

Section II

Battery Handling, Storage, and Maintenance

D–7. Battery Handling, Storage, and Maintenance Policy

Battery Handling, Storage, and Maintenance. Crewmembers will comply with EM 385-1-1, *Safety and Health Requirements*, and manufacturers' recommendations for handling, storage, and maintenance of SUAS batteries. Failure to do so increases the risk of inflight emergencies and personal injury. MTs will ensure that each organization conducts annual battery safety training on, at a minimum, the following topics:

a. Recommended charging methods.

(1) Always follow manufactures specifications.

(2) Charge batteries in a fireproof bag or cabinet.

(3) Continuously monitor charging batteries.

(4) Charge and discharge batteries before long-term storage or transport IAW manufacturer instructions.

(5) Disconnect batteries immediately if the emit an unusual smell, radiate heat, change shape, or behave abnormally.

(6) Remove cells and pack from chargers promptly after charging is complete.

(7) Do not use the charger as a storage location.

b. Recommended storage methods.

(1) Always follow the manufacturers specifications.

(2) Store batteries in a climate-controlled area away from combustible materials.

(3) Remove batteries from the device and charger for storage.

(4) Store batteries in a fireproof storage cabinet or fireproof battery storage bags.

(5) Avoid storage in non-laboratory areas such as offices or desks.

(6) Visually inspect batteries and battery storage areas weekly.

(7) Charge batteries in storage to its manufacture specification capacity at least once every six months.

c. Recommended handling methods.

(1) Keep batteries from contacting conducive materials, water, seawater, strong oxidizers, and strong acids.

(2) Do not place batteries in direct sunlight, on hot surfaces, or in hot locations.

(3) Inspect batteries for signs of damage before use. Never use and properly dispose of damaged batteries.

(4) Transport batteries in a fireproof battery bag with covered leads.

d. Travel limitations:

(1) Lithium-ion Polymer (LiPo) batteries rated at, or below 100-watt hours can travel on a commercial airplane.

(2) LiPo batteries rated between 101 and 160-watt hours require airline approval before allowed on a plane.

(3) Any LiPo battery that is not installed securely in the aircraft must be carried in your carry-on luggage.

(4) LiPo batteries that exceed 160-watt hours are prohibited from air transport.

(5) The airline may require proof of your battery’s watt-hour rating if it’s not clearly marked on the label.

Note: Confirm battery restrictions with commercial and military air carriers while arranging travel.

Appendix E
Group 3 UAS Requirements

Section I

Acquisition and Use

E–1. Approval Of Nonstandard Non-Tactical Group 3 UAS

a. Non-standard Non-Tactical (NSNT) UAS are acquired, operated, and utilized by Federal employees and contractors to meet USACE operational/mission requirements when Army program of record aircraft is not sufficient to meet the needs of the mission. Requests for NSNT UAS will be submitted through the USACE APO Fleet Manager for evaluation, analysis, and approval.

b. Requests for NSNT aircraft will primarily be completed in approved USACE online resources and include the following:

(1) Make and Model of Aircraft.

(2) Configuration Specifications. Additional documentation may be requested.

(3) Justification for new UAS or Configuration to include how existing USACE ETP Waiver-approved aircraft and/or aircraft configuration does not adequately meet mission requirements.

(4) Point of Contact for Request.

c. All operating costs and procurement of aircraft and spare parts associated with the acquisition and operation of non-standard nontactical aircraft will be the responsibility of gaining USACE Division, District, Laboratory, or Center.

d. All USACE UAS inventory and acquired UAS must be added to digital resources in the appropriate USACE Organization by the USACE Aviation Program Office to be authorized for operation.

e. The USACE APO will be the proponent for all USACE Aviation Operations Enterprise-wide to ensure consistent, standardized, and controlled operations and compliance with DoD/FAA/NDAA/OSD/Army/USACE SUAS Policy, Regulations, Operations, and Training requirements.

Section II

Training and Standardization

E–2. Group 3+ Uncrewed Aircraft Systems Aircrew Training Program

USACE Group 3 UAS are not exempt from the qualification, evaluation, and currency requirements of AR 95-1. Therefore, the USACE SUAS Initial Qualification Course is not sufficient to qualify group 3 UAS operators for USACE operations. U.S. Army group 3 UAS

qualification courses are airframe specific and must be approved by the appropriate authority prior to use. The contents of this Appendix will apply to all USACE UAS operations for aircraft that weigh over 55 pounds.

E–3. Waiver Authority

Nonstandard Group 3 UAS training and standardization requests for waivers will be forwarded through the USACE APO to DCS, G-3/5/7 (DAMO-AV) for approval.

E–4. Technical Publications

a. Operator's manuals, checklists, maintenance manuals, and related publications for nonstandard aircraft will be obtained from the Original Equipment Manager (OEM) supplying the UA.

b. Organizations will also prepare or revise technical literature for NSNT not supported by official publications or when they wish to modify official publications. These publications will be submitted through the USACE APO, through the U.S. Army Aviation Center of Excellence (USAACE) Directorate of Evaluation and Standardization (DES), to DCS, G 3/5/7 (DAMO-AV) for approval.

E–5. Qualification Training and Standardization Publications

The POI, Flight Training Guides (FTG), and Aircrew Training Manuals (ATM) will be approved by USAACE before they can be used. Organizations will submit POIs through the USACE APO to USAACE Directorate of Training and Doctrine (DOTD) for approval. ATM will be submitted through the USACE APO to USAACE DES for review, then to DOTD for approval.

E–6. Qualification Requirements for Instructor Operators

a. The USACE APO in coordination with USAACE DES will help establish the content of UAS Instructor Operator (IO) training in NSNT for which no IO training program exists. The proposed POI will be approved by USAACE before they can be used.

b. When a UAS Standardization Operator (SO) is not available to administer a flight evaluation in the aircraft in which an IO designation is sought, the evaluation may be conducted in another aircraft in the same category. The examinee must be qualified and current in the aircraft to be used.

E–7. Currency

To be considered current, an AO must, every 60 days, perform a takeoff and landing while operating on the controls of the UAS or an approved simulator and every 120 consecutive days, perform a takeoff and landing while operating on the controls of a UAS. The AO whose currency has elapsed must complete a PFE IAW this circular. Simulators may not be used to reestablish currency.

E–8. Medical Standards

a. All USACE Group 3+ organic and DAC UAS operators who are authorized to perform operator duties will undergo and successfully satisfy the requirements of at least a class IV flight medical examination in AR 40-501 while authorized to perform crewmember duties.

b. Army contract UAS operators. The FAA has determined that in order to control a UAS within federal airspace, an operator must have an FAA Class 2 medical certificate. The FAA allows the DoD to define their physical standards so long as they are not less restrictive than the second-class FAA medical standards. If required by the contract, an Army Class 4 flight physical will be completed.

Section III

Responsibilities

E–9. Commander/Director Will:

a. Approve risk assessment and mitigation measures for USACE aircraft employment when the risk is commensurate with their position and the mission is standard, aligned with the organizational mission, and conducted IAW an approved AWR.

b. Designate in writing the Standardization Operator/Instructor Operator (SO/IO) IAW this circular and AR 95-1.

c. Provide SO/IO with a UAS training program for individual and mission tasks for the year.

d. Integrate USACE UAS into civil works and emergency support project and mission planning.

e. Ensure assigned personnel who perform UAC duties comply with the qualification, evaluation, currency, and medical requirements of this Appendix.

E–10. Aircraft Commander

The Aircraft Commander (AC) will be:

a. Responsible and have final authority for operating, servicing, and securing the UAS they operate.

b. Qualified and current in the UAS system to be flown.

c. At a crew station with access to the flight controls.

d. The UT, IO, SO when evaluating or instructing with access to the flight controls.

e. Approved according to the mission approval process before each mission.

E–11. Instructor Operator

The Instructor Operator (IO) will train and evaluate all operators in their designated aircraft per approved aircrew training tasks.

a. The IOs must be designated in writing by the organization's commander/director and be current as an AC in the aircraft to be operated.

b. To become qualified as an IO, the AO must complete one of the following:

(1) A Department of the Army (DA) approved IO course in the UAS group in which IO duties are to be performed.

(2) An IO equivalency evaluation administered by a SO selected by USAACE, DES in the aircraft in which IO duties are to be performed.

(3) In the absence of a course of instruction for a local qualification can be accomplished through an USAACE DOTD approved Training Support Package IAW Para E-5 by a current and qualified SO or an OEM training team.

E–12. Standardization Instructor Operator

The SO may train and evaluate all operators as well as other personnel in the designated aircraft per approved aircrew training tasks. SOs have technical supervision of the unit UAS standardization program as specified by the commander/director.

a. Qualified IOs IAW Para E-11 will be designated in writing as SOs by the commander/director and be qualified and current in at least one aircraft operated by the unit.

b. A SO can only be evaluated by another SO or standardization personnel authorized by the USACE APM.

Glossary of Terms

Section I

Abbreviations

Term	Definition
AC	Aircraft Commander
ADP	Army Doctrine Publication
AGL	Above Ground Level
AIRF	Aircrew Information Reading File
AO	Aircraft Operator
APART	Annual Proficiency and Readiness Test
APM	Aviation Program Manager
APO	Aviation Program Office
AR	Army Regulation
ARNG	Army National Guard
ARIMS	Army Records Information Management System
ARMS	Aviation Resource Management Survey
ASAM	Aviation Safety Action Messages
ATC	Air Traffic Control
ATM	Aircrew Training Manuals
ATP	Aircrew Training Program
AWR	Airworthiness Release
BVLOS	Beyond Visual Line of Sight
CAO	Civil Aircraft Operation
CEC	Critical Electronic Component
CFR	Code of Federal Regulations
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CL	Checklist
COA	Certificate or Authorization or Waiver
COR	Contracting Officers Representative
CRN	Closed Restricted Network
DA	Department of the Army
DAC	Department of the Army Civilians
DARR	Department of the Army Regional Representative
DES	Directorate of Evaluation and Standardization
DHS	Department of Homeland Security
DoD	Department of Defense
DOTD	Directorate of Training and Doctrine
DREN	Defense Research Engineering Network
DTO	Daily Tasking Order
EC	Engineer Circular
ENG FORM	Engineer Form
ER	Engineer Regulation
ETP	Exception to Policy

FAA	Federal Aviation Administration
FHSS	Frequency Hopping Spectrum
FMC	Fully Mission Capable
FOA	Field Operating Activities
FTG	Flight Training Guides
GCS	Ground Control Station
GFR	Government Flight Representative
HQ	Headquarters
IA	Information Assurance
IAW	in accordance with
ICAO	International Civil Aviation Organization
IO	Instructor Operator
ISP	Internet Service Provider
IT	Information Technology
IQT	Initial Qualification Training
MBO	Mission Briefing Officer
MC	Mission Coordinator
MMS	Mobile Map Server
MOS	Military Occupational Specialty
MSC	Major Subordinate Commands
MT	Master Trainer
NAS	National Airspace System
NDAA	National Defense Authorization Act
NIPRNet	Non-classified Internet Protocol Router Network
NIST	National Institute of Standards and Technology
NM	Nautical Mile
NOTAM	Notice to Air Missions
NSNT	Non-standard non-tactical
OEM	Original Equipment Manager
OPTIC	Operator Planning Tool for Information Collection
OPORD	Operation Order
OSD	Office of the Secretary of Defense
PAO	Public Aircraft Operation
PFE	Proficiency Flight Evaluation
POI	Program of Instruction
PR	Project Representative
RA	Regular Army
RC	Radio Controlled
RM	Risk Management
RRS-A	Records Retention Schedule – Army
SAUS	Small Uncrewed Aircraft System
SIPRNet	Secret Internet Protocol Router Network
SM	Statute Mile
SO	Standardization Operator
SOF	Safety of Flight

TC	Training Circular
TM	Technical Manual
UA	Uncrewed Aircraft
UAC	Uncrewed Aircraft Crewmember
UAS	Uncrewed Aircraft System
USACE	U.S. Army Corps of Engineers
USAACE	U.S. Army Aviation Center of Excellence
USAR	U.S. Army Reserve
UT	Unit Trainer
VFR	Visual Flight Rules
VO	Visual Observer
VTOL	Vertical Takeoff and Landing

Section II

Terms

Small Uncrewed Aircraft System (SUAS)

The term SUAS refers to group 1 and group 2 Uncrewed Aircraft that weigh less than 55 pounds.

Uncrewed Aircraft (UA)

The term UA refers to the actual uncrewed aircraft only and not the associated systems.

Uncrewed Aircraft Crewmember (UAC)

UAC refers to all qualified crewmembers involved in the operation of the UA.

Uncrewed Aircraft System (UAS)

The term UAS refers to all Uncrewed Aircraft regardless of weight.