# SMALL UNMANNED AIRCRAFT SYSTEM AIRCREW TRAINING MANUAL

# AUGUST 2006

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# SMALL UNMANNED AIRCRAFT SYSTEM AIRCREW TRAINING MANUAL

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# Preface

This manual applies to the Active Army, the Army National Guard (ARNG)/the Army National Guard of the United States (ARNGUS), and the U.S. Army Reserve (USAR) unless otherwise stated.

The proponent of this publication is United States Army Training and Doctrine Command (TRADOC). Send comments and recommendations on DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) through the aviation unit commander to Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES (UH-1 Branch), Building 4503, Kingsman Avenue, Fort Rucker, AL 36362-5263. Recommended changes may also be e-mailed to: ATZQES@rucker.army.mil.

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# Chapter 1

# Introduction

**The aircrew training program (ATP) focuses on individual, crew, and collective training. The design and management of an effective training program requires the commander to analyze each of these elements. The mission essential task list (METL) identifies collective training and defines the unit as a member of the combined arms team. To ensure the combat proficiency and absolute efficiency of Army small unmanned aircraft system (SUAS) operators in the combined arms effort, individual proficiency in tasks required to operate a SUAS is essential. TC 1-611 links individual and unit collective tasks.**

**1-1. APPLICABILITY.** This manual is applicable to crewmembers of all unmanned aircraft systems (UAS) that are not covered by another aircrew training manual (ATM).

**1-2. RESPONSIBILITIES**

a. **Commander.** According to FM 7-1, the commander is the primary training manager and trainer for the unit and is responsible for the ATP. The commander bases training on the unit's wartime 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 units. The commander has subordinate leaders (officers and NCOs), that help him or her plan and prepare SUAS training.

b. **Master trainer.** The SUAS master trainer is the commander's technical advisor. The master trainer (MT) helps the commander develop, implement, and manage the ATP. The MT will conduct qualification, refresher, mission, and continuation training only for personnel that have completed an institutional SUAS course. In that a TRADOC approved master trainer course does not currently exist, lieutenant colonel/O-5 commanders with organic SUAS assets have the authority to appoint master trainers.

c. **Operators.** These individuals perform duties that are essential to the operation of the SUAS.

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# Terms and Policies

**The ATM has added many terms to the SUAS vocabulary. Familiarity with these terms is necessary to understand and use this publication. Therefore, this chapter, rather than the glossary, contains the definition of terms, and policy information, where appropriate, to explain the terms.**

## 2-1. AIRCREW TRAINING PROGRAM (ATP)

a. **Applicability.** The ATP applies to SUAS master trainers (MT) and operators in designated operational positions.

b. **Integration of operators into the aircrew training program.** Upon signing into the unit, operators designated for duty as SUAS operators are members of the unit's ATP. Operators must present their training folder, if applicable, to the commander or the commander's designated representative upon signing into the unit. Determination of mission status is by a record check or by the commander's evaluation.

c. **Implementation of the aircrew training program.** This publication is the commander's guide for implementing the ATP.

## 2-2. MISSION STATUS LEVELS

a. **Individual progression.**

(1) Mission status levels are the training status classifications of the individual operator. They identify the training phase in which the operator is participating and measure readiness to perform assigned missions. The mission status levels provide a logical progression of SUAS training based on task proficiency.

(2) Operators will progress in mission status by completing tasks in all areas of the SUAS system. Once the operator begins training, he or she will have 90 consecutive days to advance to mission qualified status. Once mission qualified (MQ) the operator will have to perform the minimum requirements to maintain this status. Mission status progression will exclude days lost because of—
    (a) Temporary duty.
    (b) Medical or nonmedical suspension from operations.
    (c) Leave approved by the unit commander.
    (d) Grounding of SUAS.
    (e) Unavailable or in-transit SUASs because of unit deployment/redeployment.

(3) If the exclusion period exceeds 45 consecutive days, the operator must restart the current progression. The operator will have 90 consecutive days to progress to the mission qualified status level.

(4) An operator may progress to the mission qualified status in less time than prescribed in paragraph 2-5a (2) by demonstrating proficiency to a master trainer.

(5) When an operator has not progressed within the required period, the unit commander will investigate, and based on his or her findings take action according to appropriate directives.

b. **Mission preparation (MP).** An operator who has been initially designated MP, based on the commander's evaluation, will begin training on mission tasks as designated by the unit commander. Mission preparation programs help operators to verify and develop their ability to perform specific tasks (selected by the commander) that support the unit's METL. Because the goal is proficiency in

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mission-related tasks, commanders should tailor their task list to meet specific unit needs. An operator progresses from MP to MQ by demonstrating proficiency in all selected mission tasks to a master trainer. An operator has 90 consecutive days to progress to MQ. Semi-Annual Proficiency and Readiness Test (S-APART) requirements do not need to be completed while an operator is designated MP. The only requirements are those designated by the commander with assistance from the master trainer.

c.  **Mission qualified (MQ)**. An operator who has completed MP training is considered mission ready and designated MQ. The operator must perform those tasks designated by the unit commander for the operator's table of organization and equipment (TOE) or table of distribution and allowance (TDA) position. Once designated MQ, the operator must complete the S-APART requirements.

## 2-3.  AIRCREW TRAINING PROGRAM TRAINING YEAR

The ATP training year is divided into semiannual training periods. The first training period begins the first day following the end of the crewmember's birth month and continues for six months. The second training period begins the first day of the seventh month after the crewmember's birth month and continues through the end of the crewmember's birth month. (For example, the first training period for an operator born on 15 April begins 1 May and ends 31 October. The second training period begins 1 November and ends 30 April.)

## 2-4.  COMMANDER'S EVALUATION

The purpose of the commander's evaluation is to determine the initial mission status of newly assigned operators. This evaluation consists of a records review and possibly a proficiency flight evaluation. The commander or a designated representative will complete the evaluation within 45 calendar days after the operator is designated for duty as a SUAS operator.

a.  **Records review.** Unit commanders or their designated representative will review the operator's training folder. They will compare the individual's qualifications with the tasks required by the assigned duty position. If the appropriate mission status can be determined from the review, the commander will document the mission status on the individual's DA Form 7122-R (*Crew Member Training Record*).

b.  **Proficiency flight evaluation (PFE).** If the initial mission status cannot be determined by the records review or if the commander desires, the operator will undergo a proficiency flight evaluation. The PFE should include tasks from each flight mode in which the operator can expect to perform duties. The results of the PFE will determine the operator's mission status. The commander will document the mission status on the individual's DA Form 7122-R.

c.  **Considerations.**

(1)  Commanders may not assign an initial mission qualified status to graduates of SUAS qualification courses who are on their first utilization tour solely on the basis of a records review.

(2)  If, at the time of initial mission status designation, one year has passed since the operator has completed any element of an S-APART (standardization evaluation, or SUAS operator's manual examination), the operator must complete that element before designation as, or progression to MQ. Graduates of an SUAS course who are on their first utilization tour are exempt from this requirement.

d.  **Required training**. After determining the initial mission status, the commander will direct qualification, refresher, mission, or continuation training for the operator as applicable. Time allotted for completion of the required training will start accruing on the date of the mission status designation. If recommended by the evaluator, operators may credit the flight tasks satisfactorily completed on the PFE toward completion of their mission status training requirements.

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**2-5. FAILURE TO MEET ATP REQUIREMENTS**

When ATP requirements are not met the commander will investigate. After investigation, the commander will—

a.  Take one of the following actions:

(1)  Authorize the operator up to a 30-day extension to complete the requirements.

*Note:* The 30-day extension will start after the commander completes the investigation.

(2)  Request a waiver of requirements per paragraph 3-2.

b.  Enter restrictions imposed and extensions granted in the individual's training folder.

c.  Enter extensions and waivers granted the operator into training folder.

d.  Restrict operators from performing duties with the SUAS until ATP requirements are met.

**2-6. REMOVAL FROM MQ STATUS**

a. **Training deficiency**. An operator removed from MQ for a training deficiency must still meet all MQ ATP requirements. ATP requirements met while MP will be applied to MQ requirements.

b. **Other than a training deficiency**. An operator has until the end of the training period to complete ATP requirements. If an operator is removed from MQ for other than a training deficiency before the end of the training period (for example, a permanent change of station departure), his or her ATP requirements no longer apply.

c. **Re-designated MP.** An SUAS operator who is MQ and fails a hands-on performance test will be re-designated MP and authorized additional training.

**2-7. SUAS CURRENCY**

a. To be considered current an SUAS operator must:

(1)  Perform every 30 consecutive days in  launch and flight operations of the SUAS, or a compatible simulator(s).

(2)  Perform every 150 consecutive days in launch and recovery and 15-minute flight operations of the SUAS.

b. Tracking actual flight time is impractical and is not required. Individual flight records folders are not required; however, documentation of flight operations (sorties) for the purpose of tracking currency is required. Commanders will establish procedures for maintenance of personal flight logs. A qualified sortie is a launch and recovery and 15-minute flight operations of the SUAS.

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# Chapter 3

# Evaluations

**The conduct of flight evaluations is a principal means of assessing flight standardization and operator proficiency and is a key part of the Army standardization process.**

**3-1. EVALUATION PRINCIPLES.** The value of any evaluation depends on strict adherence to fundamental principles; anything less than strict adherence makes the evaluation meaningless. These principles are described below.

   a. **Selection of evaluators.** The selection of master trainers must not be based only on technical qualifications. Criteria for selecting evaluators should include demonstrated performance, objectivity, powers of observation, and 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 unit's mission and adhere to the appropriate standing operating procedures (SOP) and regulations.

   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 objectives. The emphasis is on all of the participants, not just the examinee.

   e. **Identification of training needs.** The evaluation must produce specific findings to identify training needs. General comments do not always provide the direction and guidance essential for improvement. The evaluation must pinpoint both strengths and weaknesses.

   *Note:* All evaluations of a master trainer will be conducted by a master trainer.

**3-2. WAIVERS TO REQUIREMENTS**

   a. **Unit waivers.** Unit waivers to primary SUAS ATP requirements may be granted only by commanders of Divisions or higher.

   b. **Waiver authorization.** Commanders (O6 and above) may grant unit waivers and/or extensions, to ATP requirements for units under their command affected by operational deployments. These Commanders may grant unit extensions for up to 180 days from their self established "start training date" after redeployment.

   c. **Individual waivers.** Individual waivers to primary SUAS ATP requirements may be granted by the first Commander, Lieutenant Colonel (O5) or above, in the individual's chain of command..

**3-3. SEMI-ANNUAL PROFICIENCY AND READINESS TEST (S-APART).** The S-APART measures an operator's proficiency and readiness. It consists of a written examination and a hands-on performance test evaluated by a master trainer. MQ operators must pass each component of the test during their S-APART periods. The S-APART periods are the two-month periods ending on the last day of the operator's first semiannual training period and the two-month period ending on the last day of the operator's birth month. While deployed to designated combat or imminent danger areas, the first Commander, Lieutenant Colonel (O5) or above, in the individual's chain of command should consider reducing this evaluation requirement to once annually. At the end of the training year, the commander must certify that each operator has completed all S-APART requirements. This action serves to recertify the operator in his designated duty position(s). An operator designated MQ at any

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time within this two-month period must complete all S-APART requirements. Operators receive credit for the operator's written examination and hands-on performance test during mission preparation if they complete the tests within the two-month S-APART period. Those operators participating in MP programs are not subject to the S-APART unless they were removed from MQ because of training deficiency. Operators removed from MQ status because of a training deficiency are subject to the S-APART.

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, local airspace, regulations, SOPs, and other pertinent topics as determined by the commander and master trainer. The minimum passing score is 70 percent corrected to 100 percent.

b.  **Hands-on performance tests.** This component consists of oral and job position evaluations. Paragraph 3-7 contains a list of oral subjects. Evaluation tasks are listed in the appropriate appendix of this manual. The operator must successfully complete all requirements during the S-APART period.

*Note:* S-APART failures. Operators who fail to meet the S-APART standards will be processed in accordance with paragraph 2-5 of this manual.

**3-4.  NO-NOTICE.** Each commander will establish a no-notice evaluation program to measure operator effectiveness. Evaluations may consist of flight, a compatible simulator, oral, or written examination.

**3-5.  PROFICIENCY FLIGHT EVALUATION**

a.  The commander directs the proficiency evaluation and administers it using the guidelines established in paragraph 2-4. This evaluation is conducted to determine—

(1)  The individual's readiness level, either MP or MQ, upon assignment to the unit if the readiness level cannot be determined through records review.

(2)  The individual's proficiency when SUAS currency has lapsed in accordance with paragraph 6-1.

(3)  The individual's proficiency when questioned by the commander.

b.  After the evaluation, the examiner will debrief the individual and complete DA Form 7122-R.

**3-6.  GRADING CONSIDERATIONS**

a.  **Oral evaluation.** The examinee must demonstrate a working knowledge and understanding of the subject areas presented. The evaluator will assess the examinee's knowledge during the oral evaluation.

b.  **Hands-on test.** Performance standards are based on an ideal situation. Grading is based on meeting the minimum standards. The evaluator must consider deviations from the ideal during the evaluation and make appropriate adjustments if other than ideal conditions exist.

**3-7.  COMMANDER'S CERTIFICATION.**  This evaluation is conducted to determine the operator's ability to perform appropriate duties. The evaluation sequence consists of the four phases given below. The evaluator will determine the amount of time devoted to each phase. When the examinee is an evaluator/trainer or a unit trainer, the recommended procedure is for the evaluator to reverse roles with the examinee. When the evaluator uses this technique, the examinee must understand how the role-reversal will be conducted and when it will be in effect.

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a. **Phase 1—Introduction.** In this phase, the evaluator—

(1) Reviews the examinee's records to verify that the examinee meets all prerequisites for the rating.

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

*Note:* If the examinee is a master trainer, he or she will be evaluated on the ability to apply the learning and teaching process outlined in the instructor's handbook. The examinee must demonstrate a working knowledge of the conditions, standards, and descriptions of the tasks he or she will be instructing/evaluating. The examinee must also demonstrate an ability to determine when tasks are not performed to standards and how to train to standards.

b. **Phase 2—Oral examination.** The examinee must have a working knowledge and understanding of all applicable topics in the respective subject areas below. As a minimum, the evaluator will select two topics from each appropriate subject area. An evaluator/trainer will also demonstrate an ability to instruct and evaluate any topic.

(1) Regulations and publications (ATM, AR 95-23, local SOPs, and regulations). Topics in this subject area are—
    (a) ATP requirements.
    (b) SOP requirements.
    (c) Weather restrictions and procedures.
    (d) Local airspace usage.
    (e) Publications required for using the SUAS.
    (f) Forms and records.

(2) Operating limitations and restrictions. Topics in this subject area are—
    (a) Battery limits.
    (b) Airspeed limits.
    (c) Environmental restrictions.
    (d) Other limitations.

(3) SUAS emergency procedures and malfunction analysis. Topics in this subject area are—
    (a) Emergency terms and their definitions.
    (b) Electrical system malfunctions.
    (c) Loss of link.
    (d) Mission equipment.

(4) Tactical and mission tasks (TC 1-611 and unit SOP). Topics in this subject area are—
    (a) Mission statement and employment methods.
    (b) Mission planning and safety.
    (c) Tactical reports and fire support.
    (d) Downed/Lost air vehicle procedures.

(5) Night mission operation use of lights.

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

(1) Briefing. The evaluator will explain the flight evaluation procedure and brief the examinee on which tasks will be evaluated. When evaluating an evaluator/trainer, the evaluator must advise the examinee that during role reversal, the evaluator may deliberately perform some tasks outside standards to check the examinee's diagnostic and corrective action skills. The evaluator will conduct or have the examinee conduct a crew briefing.

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(2)   Preflight Procedures. The evaluator will evaluate the examinee's use of the appropriate TMs/checklists (CLs)/technical bulletins (TBs), and/or the integrated electronic technical manual (ETM) as appropriate.

(a)   Flight Tasks. The evaluator will evaluate those tasks listed in the applicable appendix of this ATM. A Master Trainer must demonstrate an ability to instruct and/or evaluate the appropriate tasks. When used as part of the proficiency flight evaluation, the evaluation may include an orientation of the local area, checkpoints, and other pertinent information.

(b)   After-landing Tasks. The evaluator will evaluate the examinee's use of the appropriate TMs/CLs/TBs, and/or the integrated ETM as appropriate.

d.   **Phase 4—Debriefing.** Upon completing the evaluation, the evaluator will—

(1)   Discuss the examinee's strengths and weaknesses.

(2)   Offer recommendations for improvement.

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

(4)   Complete the applicable forms and ensure that the examinee reviews and initials the appropriate forms.

*Note.* Inform the examinee of any restrictions, limitations, or revocations that the evaluator will recommend to the commander following an unsatisfactory evaluation.

## 3-8.  LOCAL AREA ORIENTATION.

a.   **Training area orientation.** The commander will ensure that operators are given a tour of and a briefing on training area and facilities. The tour should include the mission planning procedures (location of maps and other flight planning aids), and airspace operations office. The briefing should include the items listed below.

(1)   Obtaining maps and charts.

(2)   Obtaining weather information.

(3)   Obtaining range and restricted-area information.

(4)   Information on frequencies and access phone numbers.

(5)   A review of airspace in the local area.

b.   **Range layout and facilities.** The commander will ensure that operators are familiar with range facilities.

c.   **Local area orientation flight.** Before progressing to MQ, operators should receive a local area orientation flight. Units may conduct this flight along with other training. The commander will determine which orientation items are required for the flight. Items peculiar to the local area or those that cannot be adequately covered during the ground portion will be pointed out, demonstrated, or discussed during the flight. The orientation flight should include familiarization with local—

(1)   Boundaries.

(2)   Reporting points.

(3)   Prominent terrain features.

(4)   Restricted areas and no-fly areas.

(5)   Tactical training and range areas.

(6)   Airfields, helipads, and frequently used LZs.

(7)   Obstacles or hazards to flight.

*Note:* MACOMs, particularly those operating near sensitive borders, should establish additional requirements or restrictions for local area orientations.

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# Chapter 4

# Unit Training

**Unit commanders are authorized to conduct refresher training at unit level. Operators receiving the training must have attended the initial operator qualification course for SUAS being flown.**

## 4-1. TRAINING PROGRAM REQUIREMENTS

a. **Refresher Training**. An operator entering refresher training will participate in training consisting of basic and mission type tasks. The operator must complete all training before he or she is designated MQ. The operator is designated MP during all of this training.

(1) The operator will complete the appropriate academic and tasks listed in this manual.

(2) All flight training in MP will be conducted by a master trainer.

(3) The operator will be evaluated by a master trainer.

(4) The operator will complete a qualified sortie at night (if applicable).

b. **Mission training.** The SUAS mission and operation of the mission equipment is an integral part of being an operator qualified in a SUAS. This training must be completed before an operator is qualified to perform missions within his unit with a SUAS.

## 4-2. TRAINING PREREQUISITES

An operator returning to an operator position after having been prohibited/excused from flying duties for more than 180 consecutive days will receive refresher training. When an operator enters the unit's ATP with fewer than 180 consecutive days of non-operator duties, the commander may require him to undergo refresher training based on a records check or a proficiency flight evaluation.

## 4-3. TRAINING REQUIREMENTS

Refresher training should include academic courses and practice of all tasks. During refresher training, an operator does not have semiannual proficiency and readiness test (S-APART) requirements in the SUAS in which the training is being conducted. The only requirements he has are those designated by the commander.

## 4-4. TASK CONTENTS

a. **Title.** A title identifies each task. The commander may create additional tasks if they are essential to METL accomplishment and are not included in the ATM.

b. **Conditions.** Perform the task in the situation the conditions specify. The specified conditions describe the important aspects of the performance environment.

c. **Standards.** The standards describe the minimum degree of proficiency or performance for accomplishment of the task under ideal conditions.

d. **Night Considerations.** Where applicable, night considerations are included.

e. **References.** Listed references for each task are sources of information about that particular task.

## 4-5.  TASK CONSIDERATIONS

a.   If a master trainer is part of a condition, a master trainer will be in a position near enough the operator being trained/evaluated that he or she may assist or assume control as the situation requires.

b.   Unless otherwise specified in the conditions, all in-flight training and evaluations will be conducted under visual meteorological conditions (VMC).

c.   The operator should know certain emergency procedures well enough to perform the required action from memory. Upon completion of the procedure, the checklist will be used to verify that no item(s) were overlooked.

d.   Operators will maintain operation within SUAS limitations at all times. Operation outside these limits, in other than an emergency, is unsatisfactory.

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# Chapter 5

# Individual Operator Training Record

**The commander must ensure that a training record is prepared and maintained for each SUAS operator in an operational duty position assigned or attached to the unit.**

**5-1. INDIVIDUAL OPERATOR TRAINING RECORD REQUIREMENTS.** The training record will be maintained as shown in figure 5-1.

a. DA Form 7122 will be used. It will be maintained in the operator's unit training folder.

b. Operators assigned or attached for flight duty will present their DA Form 7122 to the commander or the commander's representative on arrival into the unit.

c. DA Form 4507-R (*Crewmember Grade Slip*) should be used to document training and evaluation flights.

**5-2. DA FORM 7122-R**

a. DA Form 7122-R is used to permanently record all individual operator evaluations and summaries of DA Form 4507-R. It also is used to record any change in operator status or other significant events.

b. The DA Form 7122-R may need to be corrected for several reasons. Carefully entering events as they occur will eliminate most major errors. If an event is not entered at the proper time and several other events have been recorded, enter the date of the out-of-sequence event in red ink. If enough mistakes accrue to make the form unusable, transcribe the data to a new form. Place a diagonal across the front of the unusable form, label it "transcribed," and retain this copy of the form under the current form. DO NOT destroy or discard any DA Form 7122-R that contains an entry.

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*General Instructions*

- Type all entries or clearly print them by hand in black or dark blue ink (preferably with a fine-point pen).
- For blocks that do not require an entry, enter any commonly understood letters or symbols; for example, NA for "not applicable" or a dash (—).
- To make minor corrections, use correction fluid or line through the incorrect information and add the correct information.
- Keep entries to the form as clear and concise as possible. Use standard abbreviations and acronyms.
- Every possible event or occurrence cannot be anticipated. If situations arise that are not covered by these instructions, use sound judgment and enter the event in the most logical manner.

*Administrative and Demographic Data*
**Sheet number.** Number each sheet in numerical order.
**Name**. Enter the crewmember's full name (last, first, and middle initial).
**SSN**. Enter the crewmember's social security number.
**Rank**. Enter the crewmember's current rank.
**Birth month.** Enter the crewmember's birth month.

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***Training Event Data***

**Date**. Enter the day, month, and year of the event. After the first entry, the year may be omitted until entry of the first event of a new year.

**Acft**. Enter the alphanumeric designation of the appropriate aircraft (for example, RQ-11A or RQ-11B).

**Event**. Enter a short description of the event. The following are defined as events and must be recorded accurately and timely:

- Unit assignments and reassignments.
- Start of time-limited training programs. (These programs include, but are not limited to, mission status progressions.)
- Start and completion of Department of the Army qualification courses, both flying and nonflying.
- Completion of significant training or retraining programs. (Summarize the event on one line.)
- All evaluations.
- Master Trainer designation
- Completion of the written examination.
- All proficiency flight (oral or written) evaluations. (Specify the type of evaluation; for example a no-notice evaluation, the flight portion of a commander's evaluation, or currency evaluation.)
- All requests for waivers or extensions and their disposition.
- Involvement in any class A, B, C, or D accident or incident and the results of any post accident evaluation (if given).

***Note.*** Do not record as events on the DA Form 7122-R those flights conducted solely to accomplish task, iteration, currency, or MOPP requirements. Do not record attendance at recurring briefings such as safety meetings and weather briefings. Also do not record participation in ARTEP exercises, emergency deployment readiness exercises, or other unit-level exercises.

**Duty**. Not applicable.

**D, N, and Sim.** For the event being recorded, enter the number of qualified sorties conducted under the appropriate flight modes/conditions. The sortie number entered will be the sorties flown on any single flight event (such as an evaluation) or the total sorties flown in multiflight training programs.

**Seat**. Not applicable.

**Recorded By**. Evaluators/trainers and others (when required) will enter their first initial, last name, rank, and duty position.

**GR**. If the event was graded, enter an S for satisfactory or a U for unsatisfactory.

**CM Init.** Crewmembers will initial this block to show that they are aware of the entry on the form and any remarks. Their initials signify that they have been advised of and understand any change in status. Crewmembers must immediately initial any entry resulting in a change of status, such as an unsatisfactory evaluation. They will initial routine entries, such as assignment to a unit or completion of the written examination, as soon as practical.

**Rmk**. Enter Yes or No in this column to show whether comments are entered in the Remarks section regarding the entry. Do not enter NA in this column or leave it blank.

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| Remarks |
|---|
| • Record pertinent information not shown on the front of the form in this section. Do not restate information entered on the front of the form; for example, "This was a satisfactory evaluation." Keep all remarks clear, concise, and specific. Use standard abbreviations and acronyms or logical shortened word forms. |
| • Enter the date in the same format used on the front of the form. After the date, enter pertinent remarks. If the remarks require more than one line, do not repeat the date on the second or subsequent lines. Remarks that could be entered include the issuance of an MT qualification by an evaluator and an explanation of extension for completion of ATP requirements. |
| • Certain events on the DA Form 7122-R require the commander's approval and signature. These events are flight (or other proficiency) suspensions, the crewmember's return to duty after this event, and extensions or waivers. If the commander has certified another document for the event and the entry on the DA Form 7122-R is a summary of the event, the commander does not need to sign the DA Form 7122-R. |

### CREW MEMBER TRAINING RECORD

For use of this form, see TC 1-210; the proponent agency is TRADOC.

Sheet No: 1

Name: Moody, Dwight L.  SSN: 000-00-0000  Rank: SPC  Birth Month: Oct

| Date | Acft | Event | Duty | D | N | NG | NS | W | H | Sim | Seat | Recorded By | GR | CM Init | Rmk |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 Jan 06 | RQ-11B | Assignment | - | - | - | - | - | - | - | - | - | F. Franks,2Lt, Plt Ldr | - | DM | Yes |
| 11 Jan 06 | RQ-11B | Commanders Eval | - | - | - | - | - | - | - | - | - | C. Spurgeon, SGT, MT | - | DM | Yes |
| 26 Jan 06 | RQ-11B | Start Mission Preparation | - | - | - | - | - | - | - | - | - | B.Sunday, SGT, MT | - | DM | No |
| 23 Feb 06 | RQ-11B | Mission Qualified | - | 2 | 2 | - | - | - | - | - | - | B. Sunday,SGT MT | S | DM | Yes |
| 15 Mar 06 | RQ-11B | S-APART | - | - | 1 | - | - | - | - | - | - | C.Spurgeon, SGT, MT | S | DM | No |
| 19 Apr 06 | RQ-11B | Written Exam | - | 1 | - | - | - | - | - | - | - | B. Sunday,SGT MT | S | DM | No |
| 7 Jul 06 | RQ-11B | No-Notice | - | 1 | - | - | - | - | - | - | - | B. Sunday,SGT MT | U | DM | Yes |
| 8 JUL 06 | RQ-11B | Re-Eval | - | 1 | - | - | - | - | - | - | - | C. Spurgeon, SGT, MT | S | DM | No |
| 25 Oct 06 | RQ-11B | ATP Waiver | - | - | - | - | - | - | - | - | - | C. Spurgeon, SSG , MT | - | DM | Yes |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |

| Date | Remarks | Commander's Signature |
|---|---|---|
| 6 Jan 06 | Assigned to C trp 4-7 Cavalry, Budingen, Germany as qualified RQ-11B Operator | |
| 11 Jan 06 | Commanders Eval completed by records review. Start Mission Prep Trainin ASAP. | |
| 23 Feb 06 | Completed Msn Prep and Local Orientation. Mission Qualified effective this date | Adrian Rogers, CPT, Infantry |
| 7 Jul 06 | SM failed to ensure airspace coordination. MP status until sat re-eval. | |
| 8 Jul 06 | Retrained and re-evaluated on airspace coord. Return to MQ status | |
| 25 Oct 06 | SMs S-APART requirements waived by Bn Cdr due to deployment for combat operations | Adrian Rogers, CPT, Infantry |

**Figure 5-1 Example of a completed DA Form 7122-R**

**5-3. DA FORM 4507-R.** This form is for use with training programs that require flight. These training programs include, but are not limited to, mission status progressions and SUAS qualifications. The DA Form 4507-R is not for use as a permanent record of single flight such as a no-notice evaluation. Such flights should be recorded directly on DA Form 7122-R. The DA Form 4507-R is a temporary document. Units should maintain this grade slip until the training program is

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completed or terminated. The data on the grade slip will then be summarized and entered on the DA Form 7122-R and the grade slip will be discarded. If use of the DA Form 4507-R is not practical, units may develop locally produced temporary forms to track training of tasks.

# Chapter 6

# Risk Management

**Tough, realistic training conducted to standards is the cornerstone of the U.S. Army's warfighting skills. The potential for accidents increases as training realism increases. Thus realistic training can pose a serious drain on warfighting assets. Commanders must find ways to protect operators and equipment from accidents during realistic training. An accident loss in war is no different in its effect than a peacetime loss; the asset is gone. Commanders and staffs can use this section as a guide for developing SOPs and managing risk as it applies to their organization and mission.**

**6-1. CONCEPT**. Risk management is a tool leaders can use to make smart risk decisions in tactical operations. It allows leaders to execute more realistic training not otherwise practical because of the high probability of accidents. Risk management is a method of getting the job done by identifying the areas that present the highest risk and taking action to eliminate, reduce, or control the risk. Risk management thereby becomes a fully integrated part of mission planning and execution.

**6-2. RESPONSIBILITIES**. Risk management is not complex, technical, or difficult. It is a comparatively simple decision making process, a way of thinking through a mission to balance mission demands against risks. Once understood, risk management is a way to put more realism into training without paying a price in deaths, injuries, damaged equipment, or all three. Risk management is performed during actual combat as well as in peacetime. Leaders must learn to assess risks during training events and apply the same techniques during combat actions. During combat, risks may be taken, but only after they are evaluated and weighed as they are during training.

  a. **Commanders**. As in all other areas, commanders are responsible for effectively managing risk. Commanders—

    (1) Seek optimum, not just adequate performance.

    (2) Select from risk reduction options provided by the staff.

    (3) Accept or reject residual risk based on the benefit derived.

    (4) Train and motivate leaders at all levels to effectively use risk management concepts.

  b. **Troop Leaders**—

    (1) Develop a total commitment to mission accomplishment and welfare of subordinates.

    (2) Consistently apply effective risk management concepts and methods to operations they lead.

    (3) Report risk issues beyond their control or authority to their superiors for resolution.

  c. **Individuals**—

    (1) Understand, accept, and implement risk reduction guidance.

    (2) Maintain a constant awareness of the changing risks associated with the operation.

    (3) Make leaders immediately aware of any unrealistic risk reduction procedure.

## 6-3.  RISK MANAGEMENT PROCESS

a.  **Step 1: Identify risks.** Identify major events of the operational sequence and list them chronologically. This process will help detect specific risks associated with all specified and implied tasks. Safety can be built into an operation by first seeing the operation in its entirety. Operations invariably can be broken down into a series of phases, each with special characteristics and considerations. When the commander states the mission and concept, it is usually possible to define key events. Operations also have a time factor, a beginning to ending series of events in which the timing of events is often as significant as the events themselves. The operations analysis is a useful tool in quickly defining the flow and time sequence of events in an operation.

b.  **Step 2: Assess risks.** Determine the magnitude of risks by estimating loss probability and cost. Assess each event, determine whether it is routine, and make an initial risk assessment. Ensure that standards for routine events are adequate to provide an acceptable level of risk.

(1)  Consider the value of a risk matrix or decision guide for all or part of the operation. Risk matrices provide a quick and ready method of breaking down an operation into its major operational aspects and eliminating or controlling the risks associated with it. Like other risk assessment tools, risk matrices can be used alone or with other risk analysis techniques to provide a quick overview of the risk situation. Risk matrices are simple enough for routine use by tactical leaders in operational planning. These matrices are nearly always more effective than intuitive methods in identifying the extent of risk.

(2)  Consider using the METT-TC format as another means to assess risks. Leaders can subjectively determine the likelihood and extent of accidental loss based on this type of analysis.

c.  **Step 3: Make decisions and develop controls**. Make risk acceptance decisions by balancing risk benefits against risk assessments. Eliminate unnecessary risks. Reduce the magnitude of mission essential risks by applying controls. Controls range from hazard awareness to detailed operational procedures. Focus on high hazard events not covered by a good set of standards. Complete a preliminary hazard analysis of these events.

d.  **Step 4: Implement Controls**. Integrate specific controls into plans, OPORDs, SOPs, training performance standards, and rehearsals. Knowledge of risk controls down to the individual operator is essential for successfully implementing these controls.

e.  **Step 5: Supervise.** Determine the effectiveness of standards in controlling risk. The commander must enforce controls and standards. This is the key to loss control. The commander may have approved a number of risk reduction procedures, but approval does not mean that the procedures are carried out. Leaders must monitor the situation to ensure that action is actually being taken. The prudent leader then follows up to see that the doers understand and accept the guidance. Leaders should also monitor the effect of risk reduction procedures to verify that they really are good ideas. This is especially true for new and untested procedures.

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# Appendix A

# Raven Small Unmanned Aircraft System Tasks

| | Title | Condition | Standard |
|---|---|---|---|
| | Prepare the Raven System for an Aerial Mission | C06, C09, C13, C18, CC19 | S01-S03 |
| TASK | Assemble the Raven Air Vehicle | | |
| TASK | Assemble the Raven Ground Control Unit | | |
| TASK | Assemble the Raven Remote Video Terminal | | |
| TASK | Assemble the Raven Battery Charger | | |
| | Title | Condition | Standard |
| | Prepare Raven for Flight Operations | C02, C06, C07, C08, C09, C13, C19 | S01-S04 |
| TASK | Perform Map Analysis of the Mission Operations Area | | |
| TASK | Conduct Mission Planning/Briefing | | |
| TASK | Perform Raven System Pre-Flight Procedures | | |
| TASK | Perform Airspace Management Coordination | | |
| | Title | Condition | Standard |
| | Conduct Raven Flight Operations | C02, C03, C06, C08, C09, C13, C18, C19 | S01-S03 |
| TASK | Perform Raven Launch Procedures | | |
| TASK | Perform RQ-11B (Raven) air vehicle In-flight operations in support of a mission. | | |
| TASK | Perform Target Surveillance | | |
| TASK | Perform Recovery Procedures | | |
| TASK | Perform Post-Flight Procedures | | |
| | Title | Condition | Standard |
| | Perform Post-Flight Operations | C07, C08, C09, C13, | S01-S03 |
| TASK | Disassemble the Raven System | | |
| TASK | Perform Maintenance on the Raven System | | |

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# Appendix B

# Scan Eagle Small Unmanned Aircraft System Tasks

| | Title | Condition | Standard |
|---|---|---|---|
| | Prepare the Scan Eagle System for an Aerial Mission | C06, C09, C13, C18, CC19 | S01-S03 |
| TASK | Assemble the Scan Eagle Air Vehicle | | |
| TASK | Assemble the Scan Eagle Ground Control Unit | | |
| TASK | Assemble the Scan Eagle Launcher | | |
| TASK | Assemble the Scan Eagle Skyhook | | |
| TASK | Assemble the Scan Eagle GCS | | |
| TASK | Assemble the Scan Eagle Remote Video Terminal | | |
| | Title | Condition | Standard |
| | Prepare Scan Eagle for Flight Operations | C02, C06, C07, C08, C09, C13, C19 | S01-S04 |
| TASK | Perform Map Analysis of the Mission Operations Area | | |
| TASK | Conduct Mission Planning/Briefing | | |
| TASK | Perform Scan Eagle System Pre-Flight Procedures | | |
| TASK | Perform Airspace Management Coordination | | |
| | Title | Condition | Standard |
| | Conduct Scan Eagle Flight Operations | C02, C03, C06, C08, C09, C13, C18, C19 | S01-S03 |
| TASK | Perform Scan Eagle Launch Procedures | | |
| TASK | Perform Target Surveillance | | |
| TASK | Perform Recovery Procedures | | |
| TASK | Perform Post-Flight Procedures | | |
| | Title | Condition | Standard |
| | Perform Post-Flight Operations | C07, C08, C09, C13, | S01-S03 |
| TASK | Disassemble the Scan Eagle System | | |
| TASK | Perform Maintenance on the Scan Eagle System | | |

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# Appendix C

# TACMAV Small Unmanned Aircraft System Tasks

| | | Title | Condition | Standard |
|---|---|---|---|---|
| | | Prepare the TACMAV System for an Aerial Mission | C06, C09, C13, C18, CC19 | S01-S03 |
| TASK | | Assemble the TACMAV Air Vehicle | | |
| TASK | | Assemble the TACMAV Ground Control Unit | | |
| TASK | | Operate the TACMAV Remote Video Terminal | | |
| TASK | | Operate the TACMAV Battery Charger | | |
| | | Title | Condition | Standard |
| | | Prepare TACMAV for Flight Operations | C02, C06, C07, C08, C09, C13, C19 | S01-S04 |
| TASK | | Perform Map Analysis of the Mission Operations Area | | |
| TASK | | Conduct Mission Planning/Briefing | | |
| TASK | | Perform TACMAV System Preflight Procedures | | |
| TASK | | Perform Airspace Management Coordination | | |
| | | Title | Condition | Standard |
| | | Conduct TACMAV Flight Operations | C02, C03, C06, C08, C09, C13, C18, C19 | S01-S03 |
| TASK | | Perform TACMAV Launch Procedures | | |
| TASK | | Perform Target Surveillance | | |
| TASK | | Perform Mobile Operations | | |
| TASK | | Perform Recovery Procedures | | |
| TASK | | Perform Postfllight Procedures | | |
| | | Title | Condition | Standard |
| | | Perform Postflight Operations | C07, C08, C09, C13, | S01-S03 |
| TASK | | Disassemble the TACMAV System | | |
| TASK | | Perform Maintenance on the TACMAV System | | |

| | |
|---|---|
| **Task Condition:** | |
| **Universal Condition:** Given the SUAS, appropriate training materials, tools, and equipment. | |
| **Universal Standard:** According to the TM and training target times. | |
| Given a ground emergency scenario | C01 |
| Given appropriate map | C02 |
| Given an appropriate emergency scenario | C03 |
| Given an in-flight emergency scenario | C04 |
| Given the appropriate ancillary equipment | C05 |
| Given the appropriate personnel | C06 |
| Given the appropriate planning data | C07 |
| Given the appropriate references | C08 |
| Given the appropriate tools | C09 |
| Given the emplacement site | C10 |
| Given the mission | C11 |
| Given the mission operations site location | C12 |
| Given the SUAS (fully mission capable) | C13 |
| Given the site map analysis | C14 |
| Given the surveillance criteria | C15 |
| Given the surveillance zone | C16 |
| Given the target | C17 |
| Given the target collection criteria | C18 |
| Given varying environmental conditions | C19 |
| **Task Standards:** | |
| According to the Operators Manual | S01 |
| According to current Operator Course TSP | S02 |
| Task must be performed with 100 percent accuracy | S03 |
| According to local airspace procedures | S04 |

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# Glossary

| | |
|---|---|
| **AR** | Army regulation |
| **ATC** | air traffic control |
| **ATM** | aircrew training manual |
| **ATP** | aircrew training program |
| **DM** | demonstration |
| **FM** | field manual/frequency modulation |
| **LZ** | landing zone |
| **MACOM** | major command |
| **MP** | mission preparation |
| **MQ** | mission qualified |
| **MT** | master trainer |
| **METL** | mission essential task list |
| **METT-TC** | mission, enemy, terrain and weather, troops and support available, time available, civilian considerations |
| **NA** | not applicable |
| **NCO** | noncommissioned officer |
| **PFE** | proficiency flight evaluation |
| **S** | satisfactory |
| **S-APART** | Semi-Annual Proficiency and Readiness Test |
| **SOP** | standing operating procedures |
| **SUAS** | small unmanned aircraft system |
| **TC** | training circular |
| **TDA** | table of distribution and allowance |
| **TOE** | table of organization and equipment |
| **TM** | training manual |
| **TRADOC** | United States Army Training and Doctrine Command |
| **TSP** | training support package |
| **U** | unsatisfactory |
| **U.S.** | United States |
| **UAS** | unmanned aircraft system |
| **VMC** | visual meteorological conditions |

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# References

## SOURCES USED

These are the sources quoted or paraphrased in this publication.

FM 7-1. *Battle Focused Training*. 15 September 2003.


## DOCUMENTS NEEDED

These documents must be available to the intended users of this publication.

**Department of the Army Publications**

Form 2028. *Recommended Changes to Publications and Blank Forms*.
DA Form 759-2. *Individual Flight Record*.
DA Form 7122-R. *Crew Member Training Record*.
DA Form 4507-R. *Crewmember Grade Slip*.


## READING RECOMMENDED

AR 95-23. *SUAS Flight Regulations*. 14 May 2004
FM 3-04.300. *Flight Operations Procedures*. 26 April 2004.
JP 3-52. *Joint Doctrine for Airspace Control in the Combat Zone*. 30 August 2004.
United States Army Aviation Command (USAAVNC). *Instructor Pilot Handbook*. August 2004

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