



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
E COMPANY, 2<sup>ND</sup> BATTALION 29<sup>TH</sup> INFANTRY REGIMENT  
197<sup>TH</sup> INFANTRY BRIGADE  
BUILDING 74, 6650 WILKIN DRIVE  
FORT BENNING, GEORGIA 31905-4420



ATSH-INB-E

4 March 2012

## MEMORANDUM OF INSTRUCTION

SUBJECT: U.S. Army Small Unmanned Aircraft System (SUAS) School, Raven Operator Course Mobile Training Team Package Requirements.

1. Purpose: To identify the support assets required to conduct a Raven Operator MTT and inform U.S. Army units so they can accurately plan for a Raven Operator MTT.

2. Concept: A 10-day MTT package that teaches the Basic Raven Operator Course at a unit's home station resulting in the certification of 12 RQ-11B, RQ-11DDL Raven Operators.

3. Course Description:

a. This training includes 80 hours of instruction and evaluation consisting of 22 Lessons. Course includes UAV Operations, Techniques, and Problem Solving, Air Space Command and Control, Safety, Equipment Setup, Maintenance, Developing Individual and Team Skills, plus Exercises and Training tasks. These skills will be used effectively in a Combat Environment.

b. This is NOT a "train the trainer" course.

4. Request Process: Before an MTT can be reserved a formal request must be submitted through the requesting unit's MACOM to HRC. HRC will send the request to TRADOC, who sends it to the United States Army Infantry Center G-3. The USAIC and the 29<sup>th</sup> Infantry Regiment will approve the request and task SUAS School to begin necessary coordination. The only initial coordination the U.S. Army SUAS School is authorized to conduct is providing an interested unit with the MOI and the contact information for United States Army Infantry Center G-3 and the 29<sup>th</sup> Infantry Regiment S-3.

a. USAIC G-3 Tasking Office – (706) 545-7616.

b. 29<sup>th</sup> Infantry Regiment S-3 – (706) 545-8660.

5. MTT Request Timeline:

a. 90 days out – U.S. Army SUAS School is notified by the 2d Battalion, 29<sup>th</sup> Infantry Regiment S-3 of tasking and is provided a POC for the requesting unit.

b. 90 days out – U.S. Army SUAS School establishes contact with the receiving unit POC and ensures the POC has received all of the support requirements.

c. 45 days out – a fund site established by receiving unit. (MIPR Received)

d. 7 days out – final coordination with receiving unit.

e. 1 day out – U.S. Army SUAS School cadre arrive at site and begin preparing for execution of MTT.

6. Funding: All funds required for instructor travel and billeting should be placed in a MIPR type fund site and the 29<sup>th</sup> Infantry Regiment will make all necessary arrangements (we will send a mixture of civilian contractors and active duty personnel). Any questions regarding the establishment of the fund site should be directed to SSG Patrick Kulp, 2<sup>nd</sup> Battalion 29th Infantry Regiment TDY, at (706) 545-8597, DSN 835 or [Patrick.kulp@conus.army.mil](mailto:Patrick.kulp@conus.army.mil).

7. 2/29 Responsibilities: The 2/29 IN Regt will provide enough instructors to complete the required training. A minimum of three instructors will be used to train 12 students. Units should plan on receiving 4 instructors per 12 man class. 2/29 will provide all course materials for the class to include student handouts and slide presentations. Some of these course materials may need to be locally reproduced so that enough are on hand for the completion of the course.

8. Facilities: The Host unit will be responsible for coordinating for ALL necessary facilities to include:

a. Range: Host unit will be required to conduct all range coordination with their respective Range Control Division for all ranges and any requirements necessary to operate those ranges.

1) Range “ground area” should be no smaller than 400 meters by 400 meters per site. One site is used to train 6 soldiers (full class size is 12 students or two sites).

a) RQ-11DDL sites need to be a minimum of 500 meters apart if operating in proximity to other DDL systems.

b) RQ-11DDL sites need to be 800 meters apart if operating in proximity to non-DDL systems.

2) More training sites can be obtained given the number of students to be trained, the area available to train, and the number of instructors available to train.

3) If two sites are needed, range area should be no smaller 800 by 800 meters. Ground control stations can be no closer than 400 meters to prevent frequency “bleed over”.

4) Unit will conduct all coordination with their post airspace control agency to obtain an area no smaller than 400m by 400m square for one site or 800m by 800m for two sites.

5) Instructors will not begin course until all airspace management actions are taken in accordance with using unit’s air space controlling authority.

6) Unit will conduct all communications actions as necessary to successfully run the range to include providing range safety officer or other duty position as required by the using unit’s post procedures.

7) Host unit will provide full time personnel to handle all range communications with range control should this be needed. This person should **NOT** be a member of the class to prevent any training distracters to the student.

8) 2/29 personnel will not be held accountable for any deficiencies in range space or air space coordination.

b. Classroom: Host unit will coordinate for class room space large enough to accommodate a class of at least 12 students. (Normal class size).

1) Class room will be set up with “one eye” capabilities provided by the Host unit.

9. Frequency Deconfliction: Host unit will be responsible for insuring that there are absolutely no conflicts with the frequencies used by the RAVEN A/B/DDDL UAV. Frequency conflicts will result in the loss of air vehicles. Prior coordination should be made with other units on post to insure that no other RAVEN A/B/DDDL or SHADOW is flown at the same time or in proximity of the unit’s systems.

10. Equipment: Host unit will be responsible for providing all equipment necessary to conduct the course.

a. The unit will provide one complete RAVEN A/B system per 6 students trained with suitable spares on hand as necessary. Keep in mind that new operators tend to cause some damage to the actual air vehicle during training.

b. Provisions will be made to allow for the ability to re-charge air vehicle batteries on site. A small generator per site is ideal.

c. Provisions will be made to re-charge CGS/GCU batteries over night or in such a manner as to allow for a sufficient number to be available for the days training.

d. Host unit will provide one RSTA kit per site. If this is not available, the SUAS training personnel must be notified well in advance to help facilitate the procurement of this equipment. The SUAS School has very limited supply in this area.

e. Host unit will need to coordinate the securing of M2 transceiver Modules and M2 RF units, if host unit has been refitted with DDL systems. 3 M2 transceiver modules, 2 M2 RF units are optimal for training.

f. Host unit can contact PM Shop in Huntsville, AL for the M2 equipment  
POC: [Conyers, John W Contractor/CSC" <john.conyers@us.army.mil>](mailto:john.conyers@us.army.mil) , Telephone: Office (256) 313-5313 (DSN Prefix 897), Cell (256) 425-4775. **If equipment can not be obtained SUAS schoolhouse needs to know immediately.**

g. Host unit will be responsible for the secure storage of all equipment during training.

h. 2/29 Personnel will NOT provide any RAVEN systems for training. All units will train on their own equipment.

11. Administrative: The SUAS training team will need assistance from the Host unit for the following:

- a. Host unit will provide access to a high quality printer for the production of course certificates and operator certification cards.
- b. Host unit will provide access to lamination equipment to facilitate the lamination of operator certification cards.
- c. Host unit will provide access to a photo copier as needed for the reproduction of limited course materials.
- d. Should any school owned equipment be needed for the training, the unit will assist and provide for return shipping of that equipment to Ft. Benning.
- e. Host unit will provide a non-student Liason to assist instructors, with student issues or incidents that may arise throughout the duration of the course. Liason needs to be in the grade of E-5 or above.

12. Transportation and Lodging: Host unit will be responsible for the transportation of students, equipment, and possibly instructors, to and from the training site each day

- a. Host unit will assist 2/29 personnel in obtaining suitable lodging for the duration of the course
- b. Host unit may be required to fund the rental of a vehicle for instructor transportation. This vehicle will be a 4 wheel drive SUV type vehicle.

13. Course Schedule: Course schedule is attached. The course schedule is highly adaptable and can be changed to suit the unit's needs. While scheduling courses, allowance should be made to accommodate for inclimate weather. (The RAVEN A/B cannot be operated in inclimate weather.) Instructors will complete a days training and then proceed into the next days training when possible. This will allow for the successful completion of the course should unforeseen incidents occur

14. Reporting: The Host unit will be responsible for reporting all incidents IAW with post policy and regulations should they occur. 2/29 staff can assist in this if necessary but will not be held accountable for reporting requirements.

15. Official Tasking: The unit is responsible for obtaining official tasking, through their operations chain of command. The SUAS School cannot make any plans or conduct any type of training without official tasking through TRADOC.

16. Funding: The SUAS School will NOT deploy to any location (CONUS) without funding in place a minimum of 45 days from start date of training. Most mobile training teams will include contract civilians which require funding well in advance of training.

17. Informal Coordination: Informal coordination directly with the SUAS School should begin as soon as possible. While this coordination is extremely important, the school cannot mobilize without funding and a tasking, regardless of the amount of informal coordination that has been conducted

18. Students:

a. Pre-requisites: Students should be operationally experienced individuals, with unit retainability, who are expected to perform SUAV operator duties (not unit trainer/subject matter expert duties) as part of an operational unit while deployed in support of OEF/OIF.

1) Students will not be on profile or have any physical limitations.

2) Individuals who do not meet these general basic prerequisites (staff/support personnel not expected to perform operationally, individual near retirement/PCS, junior/inexperienced personnel, etc.) should not be sent to this course, as they will not be allowed to attend training.

3) Students should be relieved of any details or any type of duty's while attending the course to prevent any missed blocks of instruction.

b. Graduation Requirements:

1) Students must be able to assemble, conduct the pre-flight, launch, land, and recover the Air vehicle

2) Students will be given two written exams. If you fail the first attempt, you will be re-trained and re-tested

3) Students must demonstrate steady progress from basic skills to advanced skills. If you miss a step in one and cannot make the transition to the higher skill level you could be dropped from the course

4) Students must maintain "situational awareness" at all times. You demonstrate this by rapid response to your instructor's comments and questions. When the instructor gives instructions, and you cannot immediately follow those instructions, then you could be dropped from the course.

5) Students will conduct 5 launches during daylight hours for launch training. Students will also launch AV for normal flight profiles on days 2-4. Students must successfully launch the AV 50% of these launches.

6) Students will conduct 5 launches during night conditions. Students will also launch AV for two night profiles. Students must successfully launch the AV for 50% of these launches. Night launch is considered to be an AV with night payload and "zero wind" conditions. (less than 1 mph) Night launches can be conducted during the daylight if necessary as long as these two conditions are met.

7) Consumption of alcohol 12 hours before UAV operations is prohibited (IAW AR 95-23) and will cause immediate dismissal from the course.

19. Point of contact for this memorandum is SSG Peek, William at 706-545-2837 or jose.blanco2@us.army.mil

Alan Chartier  
CPT, IN  
Commanding

Sample Training Schedule:

TD 0	5 Jan/TD 1/Mon	6 Jan/ TD 2/Tues	7 Jan/ TD 3/Wed	8 Jan/ TD 4/Thur	9 Jan/ TD 5/Fri
<b>Class Start</b>	<b>0900 Classroom</b> Intro & History Manual/Flt. Log Desc. & Theory Assembly/Disassembly Pre-Flight/ Recovery Controls & Indicators Raven SIM	<b>0900 Classroom</b> Mapping GPS Theory Basic Aero/Piloting Range and Bearing Maint & TS Airspace Mngt. Emergency Proc.	<b>0900 Classroom</b> FalconView & & Toolbar Advanced Aero Mobile Ops Night Ops. Basic Mission Plan	<b>0900 Classroom</b> Remote Launch Hand Off Untrained Asst. Incident Reports Imagery Process.	<b>0900 Classroom</b> Quiz 1 *Will work through the training holiday
<b>Class End</b>	<b>2000</b>	<b>1100</b>	<b>1200</b>	<b>1100</b>	<b>1030</b>
<b>Range Start</b>		<b>1130</b>	<b>1230</b>	<b>1130</b>	<b>1100</b>
<b>Range End</b>	No Range.	Launch Training  Lesson 1-1 Lesson 1-2  <b>1800</b>	Lesson 2-1 Lesson 2-2  <b>1800</b>	Lesson 2-3  <b>1800</b>	Lesson 2-4  <b>1800</b>

	10 Jan/ TD 6/Sat	12 Jan/ TD 7/Mon	13 Jan/TD 8/Tues	14 Jan/TD 9/Wed	15 Jan/TD 10/Thur
<b>Class End</b>	<b>No Classroom</b>  *Will work through the training holiday	<b>No Classroom</b>  *Will work through the training holiday	<b>No Classroom</b>	<b>0800 Classroom</b> Quiz 2 End of Course Review  <b>1200</b>	<b>0900 Classroom</b> Course Critique Graduation (Additional Weather Days may be added as needed)  <b>UMC</b>
<b>Range Start</b>	<b>0900</b>	<b>0900</b>	<b>1100</b>	<b>1200</b>	
<b>Range End</b>	Lesson 3-3 (Team 1) Lesson 3-1 (Team 4)  <b>1800</b>	Lesson 3-3 (Team 4) Lesson 3-1 (Team 1)  <b>2300</b>	Lesson 3-4 (Night) Lesson 3-5 (Night) Lesson 3-2 EPs. (Sim)  <b>2300</b>	(Make – Up)  <b>1800</b>	(Make-Up)  (Additional Weather Days may be added as needed)