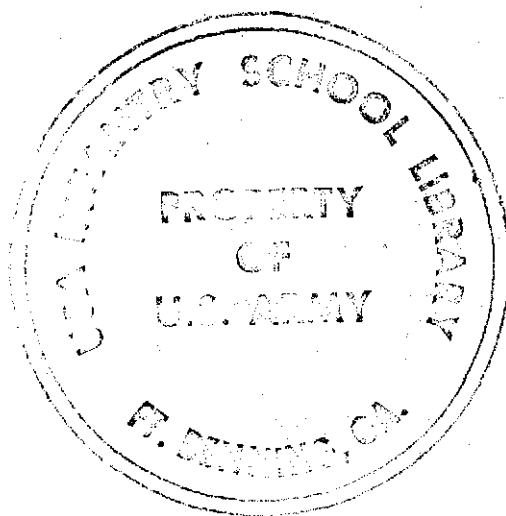


TEACHING THE ADJUSTMENT OF ARMED HELICOPTER FIRE TO INFANTRY  
OFFICER BASIC COURSE AND INFANTRY OFFICER CANDIDATE STUDENTS

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3 May 1971



The United States Army Infantry School  
Fort Benning, Georgia 31905  
3 May 1971

ADV 4-71

SUBJECT: Teaching the Adjustment of Armed Helicopter Fire to Infantry Officer Basic Course and Infantry Officer Candidate Students.

1. PROBLEM. To determine the best method of teaching Infantry Officer Basic Course (IOBC) and Officer Candidate School (OCS) students adjustment of armed helicopter fires at the United States Army Infantry School (USAIS).

2. FACTS BEARING ON THE PROBLEM.

a. The current instructional time allocated to teach the IOBC officer student the employment of armed helicopters and adjustment of armed helicopter fire cannot be expanded. (Annex B)

b. The current instructional time allocated to teach the OCS student the employment of armed helicopters and adjustment of armed helicopter fire can possibly be expanded 1 hour. (Annex B)

c. In fiscal year 1972, a total of 6,110 IOBC officer students and OCS students are scheduled to attend instruction at the USAIS. (Annex C)

d. There are 2 range facilities at Fort Benning which can be used for live fire by armed helicopters. (Annex B)

3. DISCUSSION.

a. In determining the best method to teach the adjustment of armed helicopter fire at the USAIS, the present course of instruction, range facilities at Fort Benning, time available for instruction, and size of the class to be instructed were all considered. At the present time both the IOBC officer student and the OCS student receive a total of 3 hours of instruction on armed helicopters. (Annex B and Annex D) Two of the three hours are taught in the classroom and cover a basic knowledge of the armed helicopter and the methods of adjusting armed helicopter fire. Since this is the student's only instruction on armed helicopters in the program of instruction (POI), and since the student must be taught the rudiments of aerial adjustment prior to actual adjustment, these 2 hours of instruction cannot be changed. (Annex B) The maximum time that can be devoted to teaching the employment of armed helicopters and adjustment of armed helicopter fire is 3 hours for the IOBC officer student and 4 hours for the OCS student. (Annex B) Therefore, the problem evolves down to determining the best method of teaching adjustment in the remaining available time. (Annex A)

b. To solve this problem, 4 alternative courses of action were considered.

(1) Course of action one - continue the present 1 hour of instruction in the field with no change. In this 1 hour, the students make adjustments of simulated armed helicopter fire by use of panels in the field and transmit these corrections to helicopter pilots on the ground with them. (Annex A)

(a) Significant advantages are as follows:

1 Each student makes a minimum of 1 request for fire or adjustment to a combat experienced pilot.

2 Time required for instruction would make it suitable for both the IOBC and OCS course.

(b) Significant disadvantages - normally each student will make only 1 adjustment of simulated fire and no adjustment of live fire.

(2) Course of action two - teach 2 hours of adjustment of live armed helicopter fire at Ferguson Range, wherein the students would make actual adjustments. (Annex A)

(a) Significant advantage - the student would receive more realistic training.

(b) Significant disadvantages are as follows:

1 Only 1 out of 10 students would be able to adjust live fire for 5 minutes.

2 Time required for instruction would make it unsuitable for the IOBC course.

(3) Course of action three - conduct a 1-hour practical exercise on adjustment of armed helicopter fire through the use of a television tape in the classroom. The student would be shown a problem, given a chance to pick a response, and then shown the recommended solution and another problem. (Annex A)

(a) Significant advantages are as follows:

1 Each student would be able to make several simulated adjustments.

2 Time required for instruction would make it suitable for the IOBC and OCS course.

(b) Significant disadvantage - the student would make no actual adjustments of simulated fire or live fire.

(4) Course of action four - conduct a 1-hour demonstration of live armed helicopter fire at North Ruth Range with the radio transmissions between the observer and the helicopter pilot heard by the students.

(a) Significant advantages are as follows:

1 The student could see live fire being adjusted by the methods he was taught in the classroom.

2 Time required for instruction would make it suitable for both the IOBC and OCS course.

(b) Significant disadvantages are as follows:

1 The student would make no adjustments of aerial fire.

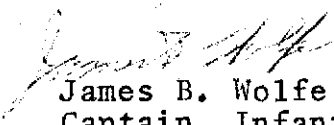
2 Weather would be a limiting factor.

#### 4. CONCLUSIONS.

a. Since the IOBC POI is limited to 1 hour of instruction to teach the adjustment of aerial fire, only courses of action one, three, and four are suitable. Only course of action one allows the student to make actual adjustments of simulated aerial fire.

b. Since the OCS POI can possibly be expanded from 1 hour to 2 hours to teach the adjustment of aerial fire, all 4 courses of action are suitable. However, course of action two and any combination of 2 of the other courses of action are based on the premise that the additional hour of instruction time will be made available. Of the 4 courses of action, only courses of action one and two allow the student to make adjustments of live or simulated aerial fire.

5. ACTION RECOMMENDED. The present course of instruction (course of action one) be continued with no change.

  
James B. Wolfe  
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ANNEXES: A - Discussion  
B - Interview  
C - Classes at USAIS  
D - POI - OCS, and IOBC (Extracts)  
E - Bibliography

CONCURRENCES: (Omitted)  
NONCONCURRENCES: (Omitted)  
CONSIDERATION OF NONCONCURRENCES: (Omitted)  
ANNEXES ADDED: (Omitted)  
ACTION BY APPROVING AUTHORITY:

DATE:

Approved (disapproved), including (excluding) exceptions.

\_\_\_\_\_  
Signature

## ANNEX A - Discussion

1. In order to determine the best method for teaching adjustment of armed helicopter fire to IOBC and OCS students at USAIS the following factors were considered.

a. The present course of instruction - the POI for the IOBC ~~students~~ officers and OCS students allows a total of 3 hours of instruction on armed helicopters. Two of those are taught as one block of instruction in the classroom and cover a basic knowledge of armed helicopters and adjustment of armed helicopter fire. (Annex D) In this 2-hour block of instruction, the student is taught the capabilities and limitations of armed helicopters, their weapon subsystems, and techniques of fire. He is also given instruction on how to adjust armed helicopter fire. The 3rd hour of instruction is presented in the field where the students make adjustments of simulated aerial fire. (Annex B)

b. Range facilities at Fort Benning - there are 2 ranges which can be used for live fire by armed helicopters; they are North Ruth Range and Ferguson Range. Both of these ranges have been surveyed in the begin-fire line, cease-fire line, left boundary, and right boundary. North Ruth Range is a demonstration range with bleachers that can seat 2,060 people. (Annex B) Ferguson Range utilizes bunkers to teach close-in adjustment of artillery fire and can accommodate approximately 190 students in 5 bunkers. (Annex B)

c. Time available for instruction - at present both the IOBC officer student and the OCS student receive a total of 3 hours of instruction which were described in paragraph 1. a. above. Because the 2-hour block of instruction taught in the classroom is the student's only instruction on employment of armed helicopters in the course and is where the student receives instruction in the rudiments of aerial fire adjustment prior to actual adjustment, this 2-hour block of instruction cannot be changed. (Annex B) There is no possibility of adding additional hours to teach the IOBC officer student adjustment of aerial fire, which will leave just 1 hour of instruction time available. There is a possibility of adding a maximum of an additional 1 hour to teach the OCS student adjustment of aerial fire, which will leave 2 hours of instructional time available. (Annex B)

d. Size of the class to be instructed - for fiscal year 1972 a total 6,110 IOBC officer students and the OCS students are programmed to attend instruction at the Infantry School. There will be a total of 24 IOBC classes with between 204 and 205 students per class, and 6 OCS classes with 200 students per class. (Annex C)

2. In determining the best method of teaching adjustment of armed helicopter fire the following 4 alternative courses of action were considered.

a. Course of action one - continue the present 1 hour of instruction in the field with no change. In this 1 hour, the student makes adjustments of simulated aerial fire by using panels as a reference point. He transmits his corrections by radio to a combat experienced pilot sitting at a table behind him. The pilot then tells the student where his next round has landed based on the correction he was given; this process will continue until the fire has been adjusted onto the target. The students work in a group, with 12 being the maximum number of students in a group. Each student will make at least 1 radio transmission during the problem. Prior to the start of the class the students are refreshed on the methods of adjusting armed helicopter fire. (Annex B)

(1) Significant advantages are as follows:

(a) Each student is able to individually use the instruction on adjustment of aerial fire he received in the classroom.

(b) A large training area is not required in presenting the instruction.

(c) The training can be conducted concurrently with other suitable training.

(d) The time required for instruction makes it suitable for both the IOBC and OCS POI.

(2) Significant disadvantages are as follows:

(a) The student receives no training in adjustment of live aerial fire.

(b) There is a lack of realism in the problem.

(c) The students are not able to make very many adjustments.

b. Course of action two - teach 2 hours of adjustment of live armed helicopter fire at Ferguson Range. One out of ten students would be able to adjust armed helicopter fire for five minutes. This 5 minutes would include the time required for adjustment and flight time for the helicopter. The other students would be observing the adjustment of the fire through M17 periscopes and listening to the transmissions between the helicopter pilot and the student making the adjustments.

(1) Significant advantages are as follows:

(a) The student would receive more realistic training.

(b) The student would be able to observe the impact of aerial fire and understand how adjustments can move that fire onto the target.

(2) Significant disadvantages are as follows:

(a) Weather would be a limiting factor.

(b) Only 10 percent of the class would be able to make actual adjustments.

(c) The time required for instruction makes it unsuitable for the IOBC POI.

(d) The student would receive only the classroom practical exercise prior to adjustment of live fire.

c. Course of action three - conduct a 1-hour practical exercise in adjustment of armed helicopter fire through the use of a television tape in the classroom. The tape would begin with a combat situation showing a rifle platoon in contact with an enemy force. The rifle platoon leader would request armed helicopters and then adjust their fire onto enemy positions. The student would then be shown series of problems. After each problem was presented the student would select 1 of several different adjustments as the adjustment he would make, and the television would then show the recommended adjustment and another problem. The instruction could be adapted to 1 of the classrooms which has the student's response equipment and the instructor could get an immediate read-out on how well the class understood adjustment techniques.

(1) Significant advantages are as follows:

(a) Each student would be required to make an individual response.

(b) The instructor could tell if the students understood the instruction.

(c) Time required for instruction would make it suitable for both the IOBC and OCS course.

(2) Significant disadvantages - the student would make no actual adjustment of live or simulated aerial fire.

d. Course of action four - a 1-hour demonstration of adjustment of live aerial fire at North Ruth Range. However, prior to the live fire, the students would receive a brief refresher class on the methods of adjustment. The students would then watch an observer make actual adjustments of live fire by using the methods presented in the classroom. The students would be able to hear all of the radio transmissions between the observer and the helicopter pilot by use of loud speakers in the bleacher area.

(1) Significant advantages are as follows:

(a) The student would observe his classroom instruction put into use in adjusting live aerial fire.

(b) Realism would be added to the instruction.

(c) The time required for instruction would make it suitable for both the IOBC and OBC course.

(d) An IOBC and an OCS class could receive the training at the same time.

(2) Significant disadvantages are as follows:

(a) Weather would be a limiting factor.

(b) The students would make no adjustments of live or simulated aerial fire.



## ANNEX B - Interviews

1. On 15 April 1971, I interviewed MAJ George A. Dean, operations officer for the Brigade and Battalion Operations Department (BBOD), USAIS, as to the possibility of adding additional hours to the IOBC and OCS POI for teaching adjustment of aerial fire. He stated that there would be no possibility of adding additional hours to the IOBC course, however, there would be a possibility of adding 1 additional hour to the OCS course.
2. On 13 April 1971, I interviewed Mr. Robert T. Lands, range and terrain specialist, Operations and Logistics Department, USAIS, concerning ranges at Fort Benning which could be used for live fire by armed helicopters. He stated that there were 2 ranges at present which had been surveyed; these are Ferguson Range and North Ruth Range. He said that a begin-fire line, cease-fire line, right boundary, and left boundary of fire had been surveyed and established at both these ranges. Mr. Land said the bleachers at North Ruth Range could seat 2,060 people.
3. I interviewed CPT Joe Pullano on 15 April 1971, an instructor in the Aerial Employment Committee, BBOD, USAIS, who instructs the 1 hour of adjustment on simulated armed helicopter fire presently being taught in the field. CPT Pullano said that the students are divided into groups with a maximum of 12 students per group. He said that the students make adjustments by using panels in the field as a reference point and transmit these adjustments by radio to a combat experienced pilot sitting at another table. CPT Pullano also said that each student would normally make only 1 radio transmission during the class but they did observe the entire fire mission being completed.
4. On 15 April 1971, I interviewed LT Robert E. Bossell, operations officer Television Division, Director of Instruction, USAIS. I asked LT Bossell the feasibility of making a television tape that would show an adjustment of aerial fire in a combat situation, and would then present an adjustment problem to the student, give the student a chance to solve the problem, present the recommended solution, and another problem. I also stated that the tape would last approximately 1 hour. I then asked him if it was feasible, how long it would take to produce the tape, and how much it would cost. LT Bossell said that it was feasible, it would cost approximately \$160.00 to produce, and would take approximately 7 days to shoot and edit the tape.
5. I interviewed MAJ Robert J. Quesinberry, instructor Aerial Employment Committee BBOD, USAIS, concerning the 2-hour block of instruction on employment of armed helicopters which is taught in the classroom. He said that the general knowledge of armed helicopters which is taught in the classroom is not essential for adjustment of aerial fire, but the methods of adjustment taught in the 2-hour block are essential. However, he further stated that, since this was the student's only instruction on employment of armed helicopters at the Infantry School, there could be no change in this 2-hour block of instruction.

6. On 14 April 1971, I interviewed CPT James A. Pongonis, instructor Field Artillery Committee, Combat Support Group, BBOD, USAIS, concerning the facilities at Ferguson Range. He teaches the close-in adjustment of 105 millimeter artillery fire to IOBC officer students and OCS students by using the bunkers at this range. CPT Pongonis stated that the 5-bunker complex could accommodate approximately 38 students per bunker for a total of 190 students at the range. This figure was based on the number of M17 periscopes in each bunker, through which the student could safely observe the impact of the artillery rounds.

ANNEX C - Classes at USAIS (Extract)

LEADER CLASSES

<u>Course</u>	<u>Cl No.</u>	<u>Report</u>	<u>Close</u>	<u>Prog Input</u>
2-7-C20 Inf Off Basic (9 Weeks)	<u>FY 72</u>			
	1	8 Jul 71	13 Sep 71	205
	2	22 Jul 71	27 Sep 71	205
	3	5 Aug 71	12 Oct 71	205
	4	19 Aug 71	27 Oct 71	205
	5	2 Sep 71	10 Nov 71	205
	6	16 Sep 71	23 Nov 71	205
	7	30 Sep 71	9 Dec 71	205
	8	21 Oct 71	11 Jan 72	205
	9	4 Nov 71	24 Jan 72	205
	10	18 Nov 71	7 Feb 72	205
	11	2 Dec 71	18 Feb 72	205
	12	6 Jan 72	13 Mar 72	205
	13	20 Jan 72	27 Mar 72	205
	14	3 Feb 72	11 Apr 72	205
	15	17 Feb 72	25 Apr 72	204
	16	2 Mar 72	6 May 72	204
	17	16 Mar 72	19 May 72	204
	18	30 Mar 72	5 Jun 72	204
	19	13 Apr 72	19 Jun 72	204
	20	27 Apr 72	3 Jul 72	204
	21	11 May 72	18 Jul 72	204
	22	25 May 72	1 Aug 72	204
	23	8 Jun 72	14 Aug 72	204
24	22 Jun 72	28 Aug 72	204	
			<u>4,910</u>	
2-7-FL Inf Off Candidate (23 Weeks)	<u>FY 72</u>			
	1	25 Jul 71	21 Jan 72	200
	2	12 Sep 71	10 Mar 72	200
	3	17 Oct 71	13 Apr 72	200
	4	30 Jan 72	12 Jul 72	200
	5	19 Mar 72	29 Aug 72	200
6	23 Apr 72	4 Oct 72	200	
			<u>1,200</u>	

ANNEX D - POI-OCS and IOBC (Extracts)

ANNEX A6

AIRBORNE/AIRMOBILE OPERATIONS

Peacetime: 12 Hours  
Mobilization: 10 Hours

PURPOSE: To provide the student with a general knowledge of Army aviation and of the duties of the air movement control officer at company level; and of the fundamentals of rifle platoon and company airmobile operations; and the factors affecting its employment.

Employment of Armed Helicopters (BP051)	U	.75 L .50 C .50 PE .25 F	.75 L .50 C .50 PE .25 F	Instruction to include selected film clips covering the capabilities and limitations of armed aircraft, weapons subsystems, and armament terms and techniques used by armed helicopters and the coordination and control aspects to include the "call for fire" and the adjustment of armed helicopter fire.
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ANNEX A5

AIRBORNE/AIRMOBILE OPERATIONS

Peacetime: 7 Hours  
Mobilization: None

PURPOSE: To provide the student with a working knowledge of the fundamentals of rifle platoon and company airmobile operations; the factors affecting its employment; and the employment of armed helicopters; to provide the student with a general knowledge of the missions and capabilities of Army aviation units organic to the Army division.

Employment            U        .75 L  
of Armed                .50 C  
Helicopters            .50 PE  
(BPB51)                 .25 F

Instruction to include:  
selected film clips cover-  
ing the capabilities and  
limitations of armed air-  
craft, weapons subsystems,  
and armament terms and  
techniques used by armed  
helicopters and the coor-  
dination and control as-  
pects to include the "call  
for fire" and adjustment of  
armed helicopter fire.

ANNEX E - Bibliography

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*Army*
2. Critical Combat Performances, Knowledges, and Skills Required of the Infantry Rifle Platoon Leader - Airmobile Operations (Washington, D. C.: The George Washington University, Human Resources Research Office, June 1969).
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6. FM 21-6 Techniques of Military Instruction (Washington, D.C.: Department of the Army, January 1967) Uncataloged FM files USAIS Library.
7. FM 57-35 Airmobile Operations (Washington, D.C.: Department of the Army, October 1967) Uncataloged FM files USAIS Library.

UNITED STATES ARMY INFANTRY SCHOOL  
LEADERSHIP DEPARTMENT  
Management Committee  
Fort Benning, Georgia 31905

ATSIN-L

12 April 1971

MEMORANDUM FOR: DIRECTOR, LEADERSHIP DEPARTMENT

SUBJECT: Classified Information

1. This memo has been read and signed by the content evaluator, a person with expertise in the subject area.

2. To the best of my knowledge, this staff study (Roster number 202 ADV 4-71) contains no classified information, and in the opinion of the undersigned requires no classification IAW AR 380-5.

*John S Davis*  
CAPT JOHN S DAVIS  
(NAME)

INSTR  
(TITLE)

ABOD  
(DEPARTMENT)