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may 1945

CONFIDENTIAL.

Royal Artillery Training Memorandum No. 7.

Since my last report considerable advances have been made in the construction of buildings and lecture rooms which are now nearing completion. This has made possible the proper disposal of dismantled equipment. A tented camp has been established in HAWKLAND to house some additional artillery reinforcements who had originally been at CAMPBELL. Since training etc. is carried on within the camp, pressure on the accommodation at the barracks is relieved.

Course continued in my letter 1/3/42 of 17 March continued until the 17 April when the arrival of additional reinforcements made an extension of training possible. During the last month the following are the figures for purely Artillery instruction.

Other Rank.

25 for Special Reserve	34
140 for Gen Rec.	142
17 for Gen Rec.	39
40 for Gen Rec.	37
	<u>250.</u>

Officers.

29 for	29
17 for	6
40 for	7
	<u>42.</u>

A General orientation course for Senior Officers (Captains and above) was begun on 29 April and will finish 23 May. Officers from this term have been giving a series of lectures on the tactical and deployment of artillery units.

Use has been made of the School of Artillery Ranges. The 40 mm reinforcements course have been firing once a week against a sleeve and the 17 mm course against moving anti-tank targets.

Since the war in Europe continued it had been intended to send the course

EST 108
230 22 MAY Recd

Operations.

25 Apr	23
17 Apr	6
15 Apr	7
	<u>16.</u>

A general orientation course for Senior Officers (Captains and above) was begun on 29 April and will finish 23 May. Officers from this team have been giving a series of lectures on the tactical and deployment of Artillery units.

Use has been made of the School of Artillery Barron. The 40 mm reinforcements course have been firing over a week against a sleeve and the 17 mm course against moving anti-tank targets.

Now the war in Europe continues it has been intended to expand the courses on final completion of the lecture room to give courses to Officers and NCO's from the Group. Since the future policy is not clear these plans are in suspension.

Field.
20 May 65.

P A B.A.

Lt Col, G.S.
Commanding 10 The Team R.A. (for Italian Forces)

DISTRIBUTION.

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S.O.R.A. 10th PLU.	1

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TRAINING MEMORANDUM - ANTI TANK.

COPY

The Programme.

Before commencing a course of instruction very careful thought should be given to the course programme, ensuring that each lesson is in the correct sequence. For personnel who have already completed their preliminary military training the course should be of at least 3 weeks duration. The number of students for each should not exceed 25; numbers in excess of this make the course more difficult to handle and decrease the value of instruction. Attached at Appendix 'A' is a suggested programme for Anti Tank Gunners and the following suggestions are made to assist instructors in the preparation of their lessons.

Instructors should arrange their programmes to give :-

- i) Individual Training i.e. Assure that each student is fully conversant with all duties on the gun so that when joining a unit he may take his place in any gun team without upsetting the efficiency of that team.
- ii) Collective Training i.e. gun team working together particularly the No.1, layers and limit numbers. Good team work is not possible unless each member of the team is proficient in his own job.

Individual Training

1. Gun Drill. The various words of command should be clear, defined and the action of each member of the gun team clearly explained followed by a demonstration. The students should then be practised until proficient. When a drill involves a long sequence of events your explanation should be split into parts, also your demonstration and the squad practised in these parts before attempting the complete drill e.g. Coming into Action. Remember that each student must learn all the duties on the gun and therefore the detachment should be changed round so that all get the opportunity to practise. When possible towing vehicles should be used with the guns to make the drill more realistic.

2. Equipment. It is necessary that before attempting gun drill, the students should know sufficient about the gun to be able to recognise the parts referred to during the gun drill periods. This can be covered quite adequately in the time allowed in the first morning of the course.

All instruction in equipment where possible should be carried out using the actual stripped model.

The sequence of instruction recommended is

- i) Description of the parts - with names.
- ii) The function of the parts and

Individual Training

1. Gun Drill. The various words of command should be clear, defined and the action of each member of the gun team clearly explained followed by a demonstration. The students should then be practised until proficient. When a drill involves a long sequence of events your explanation should be split into parts, also your demonstration and the squad practised in these parts before attempting the complete drill e.g. Coming into action. Remember that each student must learn all the duties on the gun and therefore the detachment should be changed round so that all get the opportunity to practise. When possible towing vehicles should be used with the guns to make the drill more realistic.

2. Equipment. It is necessary that before attempting gun drill, the students should know sufficient about the gun to be able to recognise the parts referred to during the gun drill periods. This can be covered quite adequately in the time allowed in the first morning of the course.

All instruction in equipment where possible should be carried out using the actual stripped model.

The sequence of instruction recommended is

- i) Description of the parts - with names.
- ii) The function of the parts and
- iii) Assembly of the parts and revision.
- iv) Questions.

All available instructors should be used - dividing the class into small squads. This will naturally depend upon the amount of equipment available, but with intelligent use of equipment available and blackboard sketched adequate instruction is normally possible. A series of small squads on equipment instruction is to be preferred to a large class of students with one instructor.

No effort should be spared to allow each student to handle the equipment and practice dismantling and assembling.

The best students will endeavour to remember the names of **7769**, but this is not vitally important provided the student is fully conversant with the function of the part.

3. Fire Discipline & Engagement of Targets. Good fire discipline is of paramount importance to anti-tank gunners and it is recommended that at least two hours be spent describing the method of fire control and the terms used. It is an essential function of gun drill and must be practised on all subsequent gun drill parades. Special attention should be given to the clock system of target indication and all students fully conversant with its use. Booklet - Fire Discipline and Gun Drill issued by Italian M.O.W. refers.

Some reference should be made to the type of target to be engaged by Anti-Tank guns and the maximum effective range :-

- i) In the primary role {a) Moving Targets
(b) Hull down stationary targets.

ii) In the secondary role

- (a) Destruction of small pill boxes etc
by direct fire.
(b) Neutralisation of small enemy
strong points - automatic weapons etc.

4. Tank Recognition. It is recommended that the first period of instruction on this subject should be employed in describing the main characteristics of :-

- a) Enemy Tanks
b) Allied Tanks

Each country has some characteristics peculiar to its own armoured fighting vehicles. These should be stressed and constantly referred to in all other instruction on this subject. Subsequently lessons may be confined to individual models both enemy and allied. Care should be exercised to avoid unnecessary small detail. Instruction should be confined to the main recognition features. Make good use of blackboard sketches, wall diagrams and pictures from current publications.

5. Sights & Laying. Explain the function of the sight bracket and open sight with the aid of the stripped model. Demonstrate the use of telescope allowing the students to examine those parts and to become thoroughly familiar with them. Enlarged blackboard sketches will quickly facilitate a clear understanding. This lecture should be given early in the course to enable intelligent use to be made of the sights in subsequent drill periods.

6. Application of Load

a) Elevation.

It is essential that all students understand the correct application of lead and elevation and the simple rules for initial load and load and range correction. This lecture should be made as practical and simple as possible. Intricate detail and theory should be avoided, but the governing factors should be clearly explained i.e. Speed of the target and the necessity to "lay ahead" of the target, the unit of load, the approach angle of the target - Direct and Diagonal crossing targets, hull down targets etc. Demonstrate by blackboard sketches, various loads on target. The student should be practiced in the practical application of load and range on all subsequent gun drill periods. See pamphlet entitled "Theory of Load" issued by R.A. Trg Team (Italian Forces).

7. Miniature Range. This is very essential for the preliminary training of layers in accuracy and consistency. Individual records should be kept and the training continued until the layers reach the required standard of proficiency. The following sequence of training is recommended:-

sight with the aid of the stripped model. Demonstrate the use of telescope allowing the students to examine those parts and to become thoroughly familiar with them. Enlarged blackboard sketches will quickly facilitate a clear understanding. This lecture should be given early in the course to enable intelligent use to make of the sights in subsequent drill periods.

6. Application of lead

& Elevation.

It is essential that all students understand the correct application of lead and elevation and the simple rules for initial lead and load and range correction. This lecture should be made as practical and simple as possible. Intricate detail and theory should be avoided, but the governing factors should be clearly explained i.e. Speed of the target and the necessity to "lay ahead" of the target, the unit of lead, the approach angle of the target - Direct and Diagonal crossing targets, hull down targets etc. Demonstrate by blackboard sketches, various loads on target. The student should be practiced in the practical application of lead and range on all subsequent gun drill periods. See pamphlet entitled "Theory of Lead" issued by R.A.Trig Team (Italian Forces).

7. Miniature Range. This is very essential for the preliminary training of layers in accuracy and consistency. Individual records should be kept and the training continued until the layers reach the required standard of proficiency. The following sequence of training is recommended:-

i) Accuracy -- Point of Aim:- Using a "load" specified by the instructor to fire a group of 5 rounds on a stationary target traversing and elevating (or depressing) off the target after each round.

ii) Consistency (a) Using zero load to fire a group of five rounds on a moving target.

(b) Using a left or right load to fire a group of five rounds on a moving target.

In all their practice the standard to be aimed at is "group". When using the moving target the motion should be smooth and not jerky. Instructors should watch carefully for laying faults and criticize constructively errors in line and elevation and point out the probable causes with a view to improvement in subsequent practices.

e.g. Sequence of laying

Wrong point of aim etc.

Apparatus. The 125 Miniature Range is recommended for layers training; details of which can be obtained from the R.A. Trig Team (Italian Forces).

Note: No attempt should be made to instruct Nos 1 on this apparatus in lead and range correction - it is purely a training device for layers.

8. Ammunition. In addition to the essential description of the type of ammunition used with Anti Tank guns, emphasis should be made on "Care and Preservation" and correct storage of ammunition. The use of H.E. with and without muzzle brakes fitted to the guns should be carefully explained - pamphlet - "Notes on Shooting H.E. with Anti Tank guns" issued by R.A.Trig Team (Italian Forces) refers.

9. Speed and Distance Judging:- A very essential part of the Anti Tank gunners training - particularly Nos 1 and 2. A lecture can be given on the various 'aids' to range estimation but the best training is purely a question of practice. The following method of training is recommended.

From a fixed point in the training area which will represent the gun position measure accurately the ranges to various fixed points in the arc of fire (say 60°) say from 400 yards to 1200 yards. If there are no other means of identifying these points on the ground erect small flags. By joining these points we can map out a course along which a vehicle may be driven at various speeds. A small chart (in duplicate) should be made indicating the ranges to the various points, also the direction and travel and speed of the vehicle. These charts are for the instructors use only.

Procedure:- (i) The vehicle carrying one assistant instructor with one copy of the chart, will proceed to point No.1 and remain until signalled to move on.

(ii) The instructor at the gun position (with a duplicate copy of the chart) will now ask the students to estimate the range. Each student will keep a written record of his answers.

(iii) At a given signal from the instructor the vehicle will move on to point No.2 at a speed indicated on the chart- when the vehicle has attained this speed the instructor will signal with a flag.

(iv) The students will now be asked to estimate the lead.

This procedure will continue until the circuit is completed and students answers compared with the chart. The circuit should be made a second time to allow the students to reconcile the correct answers with the actual performance of the vehicle.

The circuit should be changed frequently with new ranges and different speeds.

10. Sight Testing and Zeroing:- Accurate sight testing and zeroing is absolutely necessary for accurate shooting. All students should be taught the correct procedure as described in pamphlet 'Sight Testing and Zeroing' issued by R.A.Trig Team (Italian Forces).

Sight testing should be practiced on convenient gun drill parades and zeroing should be carried out with full charge ammunition on the ranges.

11. The Quiz:- This is a useful and entertaining form of revision by the students for the students. There are many ways of conducting these but whatever method is used the competitive spirit should be encouraged - to hold the interest of the students.

Collective Training.

(i) Target Selection:- This incorporates the correct use of the clock method of target indication and should be practiced during the gun drill revision periods. Targets can be improvised by petrol cans or other suitable objects scattered in groups in front of the gun. No.1, Link Numbers and Layers should be trained together as a team. Practice may be carried out in doors on a miniature range - a convenient sized cloth model of a piece of countryside with small model

This procedure will continue until the circuit is completed and students answers compared with the chart. The circuit should be made a second time to allow the students to reconcile the correct answers with the actual performance of the vehicle.

The circuit should be changed frequently with new ranges and different speeds.

10. Sight Testing and Zeroing:- Accurate sight testing and zeroing is absolutely necessary for accurate shooting. All students should be taught the correct procedure as described in pamphlet 'Sight Testing and Zeroing' issued by R.A.F. Team (Italian Forces).

Sight testing should be practiced on convenient gun drill parades and zeroing should be carried out with full charge ammunition on the ranges.

11. The Gun:- This is a useful and entertaining form of revision by the students for the students. There are many ways of conducting these but whatever method is used the competitive spirit should be encouraged - to hold the interest of the students.

Collective Training.

(i) Target Selection:- This incorporates the correct use of the clock method of target indication and should be practiced during the gun drill revision periods. Targets can be improvised by petrol cans or other suitable objects scattered in groups in front of the gun. No.1, link numbers and layers should be trained together as a team. Practice may be carried out in doors on a miniature range - a convenient sized cloth model of a piece of countryside with small model tanks placed in groups in various parts of the landscape. Small model guns can easily be made from wood suitable mounted to allow traversing and elevating.

The practice. The No.1 will site his gun and indicate the clock code to his link No. The No.1 will then indicate a target using the clock reference and the standard drill and the link number will traverse the 'gun' on to the target as described. The instructor will check each sequence and correct the fault and errors of 'the team'. The groups of targets can be altered at will to give variety to the practice.

(ii) Bobsticker. An excellent and simple method of training Nos.1 and 7767 numbers in initial orders and lead and range corrections. This may be carried out during gun drill revision periods or inside using the blackboard.

(iii) Bren Attachment. This is an essential preliminary to full charge firing on the ranges. It should be conducted in the same way as full charge firing, with the exception that the loading number will load the Bren from the magazine charged with .303 tracer ammunition.

The range to the targets should not be greater than 400 yards. The recommended range is 100 yards using a target 4' x 1'5" travelling at a speed of 1½ m.p.h. The recommended sequence of training is as follows :-

- (i) Layers consistency - at a known range and a known lead obtain a satisfactory group on a moving target.
- (ii) Team training: Nos 1 to select his own target and observe the results of his fire and make lead and range corrections where necessary.

This practice will afford the first opportunity of tracer observation and all personnel should be practiced and tested. Tracer observation is a very important part on Nos 1 training and should be practiced on every available occasion.

Layers may be classified in accordance with the pamphlet 'Layers Tests etc' issued by R.A. Trg Team (Italian Forces).

Only good layers should be used with Nos.1 during team training. It is impossible for Nos.1 to correct fire onto the target if the layer is inaccurate or inconsistent.

(iv) Full Charge Firing:- The final test of good training. The practice should be made as realistic as possible as regards the occupation of position and coming into action.

The sequence of training will be the same as for Green attachment i.e.

- (i) Layers consistency
- (ii) Team training.

In all range practice sight testing should be carefully supervised and checked by the instructors and zeroing should be carried out in accordance with the drill laid down in the pamphlet: 'Sight Testing and Zeroing' is used by the R.A. Trg Team (Italian Forces).

The success of this practice will depend largely upon the facilities available on the range. In order to carry out the necessary training indicated above many targets will be required. For the first part of the practice i.e. layers consistency, the target should be run in a direct crosser at a known range from the gun of about 400 to 500 yds. The target should be towed at a constant speed of 7½ m.p.h. For the second practice in addition to the direct crosser, as many diagonal crossing targets as practicable should be included, also stationary targets to represent hull down tanks should be positioned at ranges varying from 600 to 1500 yds in groups. This will afford excellent practice for Nos 1 and link numbers in target selection and target indication. Instructors should criticise the detachment after each series, analysing the main faults. The criticism should not be a running commentary of the shoot. This is a waste of time and is not constructive. Confine your remarks to the main faults of the members of the detachment paying particular attention to the reasons for misses, i.e. layer's faults

Nos 1 errors in range and lead estimation
Bad tracer observation.

Detachment of alignment etc.

coming into action.

The sequence of training will be the same as for breech attachment i.e.

(i) Layers consistency

(ii) Team training.

In all range practice sight testing should be carefully supervised and checked by the instructors and zeroing should be carried out in accordance with the drill laid down in the pamphlet: "Sight Testing and Zeroing" issued by the R.A. Trg Team (Italian Forces).

The success of this practice will depend largely upon the facilities available on the range. In order to carry out the necessary training indicated above many targets will be required. For the first part of the practice i.e. Layers consistency, the target should be run in a direct crosser at a known range from the gun of about 400 to 500 yds. The target should be towed at a constant speed of 7½ m.p.h. For the second practice in addition to the direct crosser, as many diagonal crosser targets as practicable should be included, also stationary targets to represent hull down tanks should be positioned at ranges varying from 600 to 1500 yds in groups. This will afford excellent practice for Nos 1 and link numbers in target selection and target indication. Instructors should criticise the detachment after each series, analysing the main faults. The criticism should not be a running commentary of the shoot. This is a waste of time and is not constructive. Confine your remarks to the main faults of the members of the detachment paying particular attention to the reasons for misses, i.e. Layer's faults

Nos 1 errors in range and lead estimation

Red tracer observation.

Sights out of alignment etc.

These students not taking part in the shoot should be practised in tracer observation and questioned on their observations by an instructor. This must not interfere with the work of the gun detachment. Instructors should always keep an analysis board on which his own observations of the shoot may be recorded and used as an aid to memory during the criticism. Excellent value is obtained by students from constructive criticisms.

Targets:- The sizes of the targets should be as under:-

1. Direct and diagonal crossers 18 ft long x 5ft 6ins high.
2. Hull down targets 5ft long x 2ft 6ins high.

7766

Layers Tests. Layers may be classified in accordance with section 4 of pamphlet "Anti-Tank Layers Tests" issued by the R.A. Training Team, (Italian Forces).

Safety. The safety limits of the range should be clearly marked and explained to the students before commencing the practice. A Safety Officer should be made available for each gun to ensure that no rounds are fired outside the safety limits.

Manhandling. In action there will often be the need for manhandling the gun in and out of position and it is therefore desirable that the student should have

some training in the practical application of drag-ropes and wheel purchases over difficult ground and obstacles. A manhandling course is easily prepared and should include such obstacles as - ditches - steep short slopes - closely spaced trees, soft ground, etc.

Conclusion. Whilst the programme in appendix 'A' is intended to illustrate a well balanced course of instruction for anti-tank gunners, the actual time spent on any particular subject will sometimes vary according to the standard of intelligence of the students. For this reason a certain number of "spare" periods should be set aside for "extra" training in the students "weak" subject.

Field.
26 Jan 45

(Sgd) R.A. DEEM, Lt Col GS,
Comd., 10 Trg Team R.A. (For Italian Forces)

7765

Training Memorandum No. 1 for the IOWPTD.CENTRAL.

The following memorandum is written to assist instructors at the Training Depot in the initial period following its formation.

It is to serve as a guide. It should be clear that the actual allotment of times etc will depend on :-

- i) the number of instructors.
- ii) the Trg Areas at their disposal.
- iii) The time available, which should NEVER be reduced below 3 weeks.

When the programmes are prepared care must be taken that :-

- i) Instructors are notified and given programmes
- ii) issues of stores etc., required for the different periods are given to the people whose duty it is to provide them, with the times at which they are wanted.
- iii) The periods allotted for various subjects are carefully balanced to give the right amount of Gun Drill and the right proportion of other subjects.
- iv) The system for keeping individual try records of the progress of each Student is systematic and well organized.

Field,
15 Jan 45.

Commanding 10 Ssg Team R.A. (for Italian Forces)
Lt Col, G.S.

P. A. Della

File

98

the people whose duty it is to provide them, with the times at which they are wanted.

- iii) The periods allotted for various subjects are carefully balanced to give the right amount of Gun Drill and the right proportion of other subjects.
- iv) The system for keeping individual try records of the progress of each Student is systematic and well organized.

Field,
19 Jan 45.

W A DeLo

Comprising 10 Try Team R.A. (for Italian Heroes)
Lt Col, G.S.

7763

TEACHING MANUAL - ARMY TANK.The Program.

Before commencing a course of instruction very careful thought should be given to the course prepared, ensuring that each lesson is in the correct sequence. For personnel who have already completed their ordinary military training the course should be of at least 3 weeks duration. The number of students for each should not exceed 25; and there is a danger of thinning the course more difficult to handle and decrease the value of instruction. It is also at times difficult to find a suitable program for later work. Consider all the following suggestions are made to assist instructors in the preparation of their lessons.

Instructors should arrange their program to give:-

- (1) Individual training i.e. ensure that each student is fully conversant with all duties in the gun to that when firing a unit he may take place in any gun team without upsetting the efficiency of that team.
- (2) Collective training i.e. men will be working together practically the No. 1, Loader and Limbman. Good teamwork is not possible unless each member of the team is proficient in his own job.

Individual Training.

1. Gun Drill. The various words of command should be clear, distinct and the action of each member of the gun team clearly explained followed by a demonstration. The students should then be practised until proficient. When a drill involves a long sequence of events your explanation should be split into parts, also your demonstration and the speed of motion in these parts before attempting the complete drill e.g. Order into action. Remember that each member must learn all the duties in the gun and therefore the detachment should be changed round so that all get the opportunity to practice. When possible towing vehicles should be used with the gun to make the drill more realistic.
2. Gun Mount. It is necessary that before attempting gun drill, the students should know sufficient about the gun to be able to recognise the parts referred to during the gun drill work. This can be covered quite adequately in the time allowed in the first morning of the course.

All instruction in equipment where possible should be carried out using the actual stripped model.

The sequence of instruction recommended is

Individual Training.

1. Gun Drill. The various words of command should be clear, definite and the action of each member of the gun team clearly explained followed up by a demonstration. The students should then be practised until proficient. When a drill involves a long sequence of events, your explanation should be split into parts, also your demonstration and the rapid execution in these parts exercises, illustrating the complete drill e.g. Order three action. Emphasize that each student must learn all the duties on the gun and therefore the detachment should be changed round so that all get the opportunity to practice. When possible to order vehicles should be used with the gun to make the drill more realistic.

2. Equipment. It is necessary that before attempting gun drill, the students should know something about the gun to be able to recognize the parts referred to during the gun drill period. This can be covered quite adequately in the time allowed in the first morning of the course.

All instruction in equipment where possible should be carried out using the actual stripped model.

The sequence of instruction recommended is

- i) Description of the parts - with names.
- ii) The function of the parts and
- iii) Assembly of the parts and revision.
- iv) Questions.

All available instructors should be used - dividing the class into small squads. This will naturally depend upon the amount of equipment available, but with intelligent use of equipment available and blackboard sketches adequate instruction is usually possible. A series of well sound on equipment instruction is to be preferred to a large class of students with one first.

No effort should be made to allow each student to handle the equipment and practice dismantling and assembling.

The best students will endeavor to remember the names of the parts, but this is not vitally important as long as the student is fully conversant with the function of the part.

3. Fire Discipline & Movement of Targets. Good fire discipline is of paramount importance to anti-tank gunners and it is recommended that at least two hours be spent describing the method of fire control and the terms used. It is an essential function of gun drill and must be practiced on all subsequent gun drill periods. Speed of attention should be given to the clock system of target indication and all students fully conversant with its use. Booklet - Fire Discipline and Gun Drill issued by Italian M.C.W. refers.

Some reference should be made to the type of target to be engaged by anti-tank guns and the maximum effective range :-

- i) In the primary role (a) Moving Targets
(b) Hull (non stationary target)
- ii) In the secondary role
(a) Destruction of small pill boxes etc by direct fire.
(b) Neutralization of small enemy strong points - automatic weapons etc

1. Mark Recognition. It is recommended that the first period of instruction on this subject should be employed in describing the main characteristics of :-

- a) Enemy tanks
- b) Allied tanks.

Each country has some characteristic peculiar to its own armoured fighting vehicles. These should be stressed and constantly referred to in all other instruction on this subject. Subsequent lessons may be confined to individual models both enemy and allied. Care should be exercised to avoid unnecessary wall detail. Instruction should be confined to the main recognition features. Make good use of blackboard sketches, wall diagrams and pictures from current publications.

5. Sights & Levelling. Explain the function of the sight bracket and open sight with the aid of the stripogram model. Demonstrate the use of telescopes allowing the students to examine these with a view to becoming thoroughly familiar with them. Utilized blackboard sketches will quickly facilitate a clear understanding. This lecture should be given early in the course to enable intelligent use to be made of the sights in subsequent gun drill periods.

6. Application of Lead

a) Elevation.

It is essential that all students understand the correct application of lead and elevation and the simple rules for initial lead and lead and range correction. This lecture should be made as practical and simple as possible. Prior to detail and theory should be reviewed, but the governing factors should be clearly explained i.e. Speed of the target and the necessity to "lay through" of the target, the unit of lead, the approach angle of the target - Direct and Diagonal crossing targets, hull down targets etc. Demonstrate by blackboard sketches, various leads on target. The students should be practised in the practical application of lead and range, on all subsequent gun drill periods. See pamphlet entitled "Theory of Lead" issued by I.A.F. Force (Italian Forces).

7. Marking Targets. This is very essential for the preliminary training of layers in accuracy and consistency. Individual records should be kept and the training continued until the layers reach the required standard of proficiency. The following sequence of training is recommended :-

6. Application of Lead & Elevation.

It is essential that all students understand the correct application of lead and elevation and the simple rules for initial lead and lead and range correction. This lecture should be made as practical and simple as possible. Instructive detail and theory should be avoided, but the governing factors should be clearly explained i.e. Speed of the target and the necessity to "lay ahead" of the target, the unit of lead, the approach angle of the target - Direct and Diagonal crossing targets, null down targets etc. Demonstrate by blackboard sketches, various leads on target. The students should be involved in the practical application of lead and range on all subsequent gun drill periods. See pamphlet entitled "Theory of Lead" issued by R.A.Tr. Team (Italian Forces).

7. Miniature Range. This is very essential for the preliminary training of layers in accuracy and consistency. Individual records should be kept and the training continued until the layers reach the required standard of proficiency. The following sequence of training is recommended :-

i) Accuracy - Point of Aim:- Using a "Lead" specified by the instructor to fire a group of 5 rounds on a stationary target traversing and elevating (or depressing) off the target after each round.

ii) Consistency (a) Using zero lead to fire a group of five rounds on a moving target.

(b) Using a Left or Right lead to fire a group of five rounds on a moving target.

In all these practices the standard to be aimed at is 5" group.

When using the moving target the action should be smooth and not jerky.

Instructors should watch carefully for laying faults and criticize constructively errors in line and elevation and point out the probable cause with a view to improvement in subsequent practices.

c.3. Sequence of laying

Wrong point of aim etc.

Apparatus. The 125 Miniature Range is recommended for layers training; details of which can be obtained from the R.A.Tr. Team (Italian Forces).

Note: No attempt should be made to instruct Nos 1 on this apparatus in lead and range correction - it is purely a training device for layers.

8. Ammunition. In addition to the essential description of the type of ammunition used with anti tank guns, emphasis should be made on "Care and Preservation" and correct storage of ammunition. The use of H.E. with and without muzzle brakes fitted to the guns should be carefully explained - pamphlet - 'Notes on Shooting HE with Anti Tank Guns' issued by R.A.Tr. Team (Italian Forces) refers.

-3-

V. Speed and Distance Indicators:- A very essential part of the anti-tank gunners training - particularly Nos 1 and 1000 Ws. A lecture can be given on the various 'beats' to ensure satisfaction but the best training is purely a question of practice. The following method of training is recommended.

Provide a road point in the training area which will represent the gun position. Measure accurately the ranges to various fixed points in the area of this (say 500) say 1000, 1500 yards to 1000 yards. If there are no other means of identifying these points on the route, erect small flags. By joining these points we can lay out a course along which a vehicle may be driven at various speeds. A small chart (in inches) should be made indicating the ranges to the various points, also the direction of travel and speed of the vehicle. These charts are the instructions used.

Procedure:- (i) The vehicle carrying the radiation instructor with one copy of the chart, will proceed to the first point and will remain until signalled to leave it.

(ii) The instructor at the gun position (with a duplicate copy of the chart) will now ask the students to estimate the range. Each student will keep a written record of his estimate.

(iii) At a given signal from the instructor the vehicle will move on to point No. 2 at speed indicated on the chart - when the vehicle has attained this speed the instructor will signal with flag.

(iv) The students will now be asked to estimate the range.

This procedure will continue until the circuit is completed and students answers compared with the chart. The circuit should be made several times to allow the students to overcome the correct answers with the actual performance of the vehicle.

The circuit should be changed frequently with new ranges and different speeds.

10. Sight Testing or Sighting:- Accurate sight testing and sighting is absolutely necessary for accurate shooting. All students should be taught the correct procedure as described in the 'Sight Testing' section issued by A.A. The 'Sight' (British version).

Sight testing should be practiced on convenient gun drill ranges and should be carried out with full eye to identification of the ranges.

11. The Gun:- This is a useful and interesting phase of training by the students for the students. There are many ways of conducting these but whatever method is chosen the competitive spirit should be encouraged to hold the interest of the students.

Collective Training.

(i) Target Selection:- This incorporated the correct use of the chart.

(iv) The students will now be asked to continue to the drill.

This procedure will continue until the circuit is completed and students are satisfied with the circuit. The circuit should be made a second time to allow the students to reconcile the correct answers with the actual performance of the vehicle.

The circuit should be changed frequently with new number and different speeds.

10. Sight Testing and Zoning:- Accounts sight testing and zoning in absolutely necessary for accurate shooting. All students should be taught the correct procedure as described in paragraph 'Sight Testing and Zoning' issued by R.A. The 7th. (Lithium Green).

Sight Testing should be practiced on convenient gun drill ranges and ranges, and all be carried out with full charge ammunition on the ranges.

11. The Quiz:- This is a useful and entertaining means of revision by the students for the students. There are many ways of conducting them but whatever method is adopted the exacting spirit should be carried out to hold the interest of the students.

Collective Training

(i) Target Selection:- This incorporates the correct use of the clock method of target indication and should be practiced during the drill revision periods. Targets can be furnished by petrol cans or other suitable objects scattered in groups in front of the gun. No. 1, Link in front and target should be tracked together as a team. Practice may be carried out indoors on a miniature range - a convenient size cloth model of a piece of countryside with small model tanks placed in groups in various parts of the landscape. Small model tanks can easily be made from wood suitably mounted to allow traversing and elevating.

The practice. The No. 1 will sit to his own and indicate the clock code to his link no. The No. 1 will then indicate a target using the clock reference and the standard drill and the link number will traverse the 'on' on to the target as described. The instructor will check each sequence and correct the faults or errors of the team. The groups of targets can be altered at will to give variety to the practice.

(ii) Blotstick. An excellent and simple method of training Nos. 1 and link numbers in initial orders and loud and range corrections. This may be carried out during an drill revision periods or inside using the blotstick.

(iii) Bren Attachment. This is an essential preliminary to full charge firing on the ranges. It should be conducted in the same way as full charge firing, with the exception that the loading number will load the Bren from magazine charged with .303 tracer ammunition.

The range of the targets shall not be greater than 400 yards. The target shall range is 100 yards using a target 4' x 15' in size. It is placed at the end of the range.

The recommended sequence of training is as follows :-

- (4) Internal consistency - the internal consistency and coherence of the data and the consistency of the data with the external data.
- (11) Mean deviation - the average deviation of the data from the mean.

This provision offers the first opportunity for the new team and all personnel to establish the direction and control. The new team will be responsible for the selection of the new team and the appointment of the new team. The new team will be responsible for the selection of the new team and the appointment of the new team.

Exposure to the chlorination in our relation with municipal sewage plants (not shown).

Only 20-40 persons should be used with Nov. 1 during road training. It is impossible to get 1000 on the track at the same time. The 1000 is a large number.

- (iv) Full Charge Training:- The final test of a unit training, the exercises should be made as realistic as possible as regards the occupation or situation that would arise in action.
- The equipment of training will be the same as for basic equipment i.e.
- (i) Improvisation.
 - (ii) Team training.

In all future practice audit testing should be carefully supervised and checked by the instrument and covering should be carried out in accordance with the drill laid down in paragraph "Audit Testing and Covering" issued by the R.C.A. Team (October 1956).

The success of this practice will depend largely upon the conditions available on the range. In order to carry out the necessary training incident to above-mentioned targets will be required, over the short part of the practice i.e. before consistency, the target should be run as a direct course at a distance of 100 yards. The target should be lower at a constant speed of 70 m.p.h. For the accuracy of the target, in addition to the direct course, as any (small) crossing targets or practice should be included, also at 100 yards targets. The present will show that the conditions at large ranges from 60 to 1500 yards in range. This will result in excellent practice for the target in target collection and target identification. Instructors should emphasize the fact that after each series, analyzing the main results. The instructor should not be a member of the target. This is a matter of time and target consistency. Consistency is a matter of the main results of the target and target consistency. Attention to the results for targets, i.e. target's faults.

14th Street NW Atlanta 1 5017

(i) anyone suffering from tuberculosis.

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The success of this practice will depend largely upon the facilities available on the range. In order to carry out this course of training incidentally many targets will be required. For the first part of the practice i.e. before completion, the target should be run in a direct course at a range never less than 400 yds. The target should be taken at a constant angle of 75° i.e. for the exact practice, in addition to the direct course, an easy diagonal course in targets on practice should be included, also stationary targets to be run at various angles. Additional at ranges varying from 60 to 150 yds. This will afford excellent practice for Nos 1 and 2nd marksman in target selection on target in the tank. Instructors should criticize the marksman after each series, analyzing the main faults. The criticism should not be a running commentary of the mark. This is a waste of time and is not constructive. Your remarks to the main faults of the members of the detachment require particular attention to the reasons for errors, i.e. Laver's faults.

[illegible]

These students not taking part in the short drill, or parading in their phoriviti or some question on their observations or on instruction. This part not interfere with the work of the student or not. Instruction should always keep an analysis toward on which his own observations of the short way to proceed and make an analysis to every one, the criticism. Excellent value is obtained by students from a constructive criticism.

11-2-2009: - The above is the top of the page in the book

1. Direct and Indirect measures for Lit 6 are high.
2. Full moon for the Lit 6 are high.

Every Time. Letter may be classified in accordance with section 4 of booklet "Anti-Communist Test" issued by the R.A. Thining Trust, (Italian Forces).

Safety. The safety limits of the range should be clearly marked and explained to the students before commencing the practice. A Safety Officer should be made available for each gun to ensure that no rounds are fired outside the safety limit.

Unimpeachable. In action there will often be the need for unimpeachable, the man in and out of position and it is therefore desirable that the student should have

-5-

some training in the practical application of long-jumps and wheel purchases over difficult terrain and obstacles. A handling course is usually prepared and should include such obstacles as - ditching - steep short slopes - closely spaced trees, butt scrub, etc.

Conclusion. While the program in Appendix 'I' is intended to illustrate a well learned course of instruction for anti-tank warfare, the actual time spent on any particular subject will vary according to the situation. Of importance of the students. In this program a combat number of "gears" periods should be set aside for "action" training in the students "actual" subject.

WdL:

26 Jan 45.

at 01, 4.30.
 Occurring 10 PM, 10.11.45. (See It from Forward)

7760

CONFIDENTIAL.Royal Artillery Training Memorandum No. 6.

The Courses arranged to train the Instructors who are to teach at the School and Depot at BRAXELAND have now finished. The duration of Courses was as follows :-

<u>COURSE.</u>	<u>DEPARTURE.</u>	<u>DATES.</u>
Anti Aircraft	3 1/2 weeks	31 Jan - 24 Feb.
Anti Tank	3 1/2 "	31 Jan - 24 Feb.
25 pr.	5 1/2 "	31 Jan - 9 Mar.

Students attention as follows :-

	<u>25 pr.</u>	<u>40 mm</u>	<u>17 pr.</u>
Officers from ICERTD	10	8	5
NCO's from ICERTD	53	24	25
Officers from LANTANA	-	-	4
Gruppo	-	-	6
NCO's from LANTANA Gruppo -	-	-	-
NCO and O.R. from	2	-	-
POLGORE Gruppo -	-	-	-

On termination of the Courses recommendations were made as to which Officers and NCO's would, from the technical point of view be best suited for the posts of permanent instructors. The quality of the 40 mm and 17 pr Courses was high and the selection of suitable instructors easy. The standard of the 25 pr Course was disappointing. Only 1 Officer and 8 NCO's reaching the modest standard required by us to qualify them as instructors at Depot Artillery School. In order to deal with the try problem it was recommended that a further 5 Officers from among the students be appointed as Instructors in a temporary capacity. Seven other NCO's were considered to be capable of instructing in one or other branch of the art and their nomination as instructors was recommended on the understanding that their instruction in the early stage be limited to those spheres in which they were considered proficient. In this manner all the Officer vacancies for instructors can be filled and 15 out of the 25 vacancies for Sergeant Instructor. I am examining the Instructor situation and in view of the extent of garrison officers shall probably recommend that part of the W.E. of NCO's be filled by young officers. The instructional difficulties will be overcome in a short period and the standard of Instructors is being regarded as a stimulus to increased activity rather than as a cause

Gruppo - 4
 NCO's from LANTOVA Gruppo - 6
 NCO and C.S. from -
 FOLGORE Gruppo - 2
 -

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On 13 & 14 Mar this unit arrived at BRACCIANO to supervise the training of reinforcements and is now established here. Signals etc are collected daily from the Signal Office RASC Rome.

Field.
 16 Mar 45.

Lt Col, C.S.
 Commanding 10 Trg Team R.A. (for Italian Forces)

DISTRIBUTION.

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