NATIONAL CADET CORPS

SPECIALISED SUBJECTS SD/SW

ALL WINGS

Directorate General of NCC

Ministry of Defence

RK Puram, New Delhi,110066

May 2013

By Order

Director General NCC

ARMED FORCES -1
BASIC ORGANISATION OF ARMED FORCES

Code - AF-1

Period - One

Type - Lecture

Term - I

Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction.	-	05 mins
	(b)	Command and control	-	10 mins
	(c)	Headquarters and formation headquarters	-	10 mins
	(d)	Navy and Air Force	-	10 mins
	(e)	Conclusion	-	05 mins

INTRODUCTION

1. As a Cadet of the NCC, it is very important to understand the basic organisation of the Indian Army at a macro level. A look at the command and control structure shows how finely it has been tuned to meet India's threat perception based on the major wars that it has fought and the present day geo-political scenario.

AIM

2. To acquaint the cadets about basic organization of Armed Forces.

PREVIEW

3. The lecture will be conducted in the following parts:-

(a) Part I - Command and Control.

(b) Part II - Headquarters and Formation Headquarters.

(c) Part III - Navy and Air force

PART I-COMMAND AND CONTROL

4. **Command.** The President of India is the Supreme Commander of all the Armed Forces of the Country. The Chief of Army Staff is the head of the Indian Army and is responsible for the command, training, operations and administration. He carries out these functions through Army Headquarters. (Army HQ) of the 1.1 million strong force. A number of Staff Officers assist him, such as Principle Staff Officers(PSOs),Head of Arms and Services, etc. A Vice Chief and two Deputy Chiefs of Army Staff handle coordination.

PART II : HEADQUARTERS AND FORMATION HEADQUARTERS

5. **Command Headquarters.**The whole country is divided into seven Commands. These are Northern, Western, Central, Southern, South Western, Eastern and Training Command. The Command HQ exercises operational responsibility. It is commanded by an officer of the rank of Lt General who is called Army Commander.

6. **Field Formation.**Combat formations are grouped asCorps, Divisions and Brigades. These are commanded by an officer of the rank of Lt General, Maj General and Brig respectively. These are field forces. The Corps are further divided as" Holding' and "Strike" Corps depending on their role. A defence oriented Corps is the "Holding" Corps whereas the "Strike" Corps is for offensive operations.

The Corps Head Quarters handles 03 to 05 Divisions. The Army has in its Order of Battle, Mountain Divisions, Infantry Divisions, Armoured Divisions and Mechanised Divisions. Independent Brigade Groups and Brigades which may be Armoured, Mechanised, Parachute, Engineer, Air defence, Field Artillery or Infantry/Mountain Brigades.

7. **Static Formations (**Area and Sub Area Headquarters) . These are commanded by an officer of the rank of Lt General and Maj General respectively. These span the length and breadth of the Country. These look after infrastructural assets, lines of communications, civil-military liaison etc.

PART III : NAVY AND AIR FORCE

8. Enveloping the country from almost three sides and stretching over 6000 Kms of our coast line, the sea has always exerted decisive influence of India's freedom, trade, commerce, and culture.

Constituents of the Navy.

9. The Indian Navy is equipped with several ships of different types and naval aircrafts. Shore facilities have been provided at various places in the country to train personnel for the Navy, repair ships and aircrafts, and provide the fleets with logistic support.

Organisation and Administration.

10. The Naval Headquarters at New Delhi exercises administrative and operational control over the Navy through various "Administrative Authorities". For this purpose the Navy is divided into three commands. These are : -

(a) Western Naval Command with HQ at Mumbai.

(b) Eastern Naval Command with HQ at Vishakhapatnam.

(c) Southern Naval Command with HQ at Cochin.

11. The Navy has at present two fleets, viz the Western Fleet and the Eastern Fleet, each commanded by Flag Officer of the rank of a Rear Admiral. The Southern Naval Command is basically a Training Command governing the Training Establishments in the Indian Navy. It has under its command an afloat Training Squadron. It is also allotted operational ships or aircraft from time to time as the situation warrants.

12. Indian Air Force is the youngest of the three Services. It was in 1932 that an Act was passed in Indian Legislature for establishing the Indian Air Force on the recommendations of Skeen Committee.

Organisation.

13. **Air Headquarters.**

(a) Air Headquarters comprises the Chief of the Air Staff and his principal staff officers.

(b) The staff of Air Headquarters consists of three branches, viz the Air Staff, Administrative and Maintenance branches, each being organized into Directorates.

Commands.

14. The Air Force is organized into seven commands which are functionally and administratively control by Air HQ. Each Command is placed under the command of an Air Officer Commanding-in-Chief. The Commands are : -

(a) Western Air Command.

(b) Central Air Command.

(c) Eastern Air Command.

(d) South Western Air Command.

(e) Southern Air Command.

(f) Training Command.

(g) Maintenance Command.

15. These commands have a number of formations under them.

CONCLUSION

16. Thus, the Organisation of the Army is structured in a manner to facilitate ease of coordination of the functioning of the Army with the nucleus being the Army Head quarters and the various Formations down the Chain of Command.

ARMED FORCES 2:
BASIC ORGANISATION OF ARMY

Code - AF-2

Period - Two

Type - Lecture

Term - I

Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction	-	05 mins
	(b)	Part I-Command and control	-	10 mins
	(c)	Part II-Fighting Arms	-	20 mins
	(d)	Part III-Supporting Arms	-	15 mins
	(e)	Part IV-Supporting Services	-	20 mins
	(e)	Conclusion	-	10 mins

INTRODUCTION

1. The present day Indian Army owes its origin to British days. It was then used as an instrument for the expansion and preservation of the British Empire.At the time of independence in 1947, due to partition of the sub-contingent, the old Indian Army was also divided. Since then the Army has continued to be re-organised and modernised.The Army since independence has taken part in the following major operations in defence of our borders.-

(a) Kashmir Operations against Pakistan 1947-48.

(b) Sino-Indian Operations in NEFA (Arunachal) and Ladakh 1962.

(c) Indo-Pak war 1965.

(d) Indo-Pak war 1971.

(e) Kargil conflict 1999.

AIM

2. To acquaint cadets about the basic organization of the Army.

PREVIEW

3. The lecture will be conducted in the following parts: -

(a) Part I - Command and control

(b) Part II - Fighting Arms

(c) Part III - Supporting Arms

(d) Part IV - Supporting Services

PART I: COMMAND AND CONTROL

Command and Control

4. In addition, Army has taken part in peace keeping missions under United Nations in various parts of the world. Services of the Army have been extensively utilised in aid of civil authorities during natural calamities like floods, cyclones and earthquakes.

5. The Army today is self-reliant in respect of its requirements of conventional weapons and is fully geared to meet any external aggression on our borders.

6. **Command.** The President of India is the Supreme Commander of all the Armed Forces of the Country. The Chief of Army Staff is the head of the Indian Army and is responsible for its command training, operations and administration. He carries out these functions through Army Headquarters. (Army HQ).To the entire army, now some 1.1 million strong, he is the Chief. A number of Staff Officers assist him, such as Principle Staff Officers(PSOs),Head of Arms and Services, etc. A Vice Chief and two Deputy Chiefs of Army Staff handle coordination.

7. **Command Headquarters.** The whole country is divided into seven Commands. These are Northern, Western, Central, Southern, South Western, Eastern and Training Command. The Command HQ exercises operational responsibility. It is commanded by an Officer of the rank of Lt General called Army Commander.

8. **Field Formation.** The Combat Commands are grouped as Corps,Divisions and Brigades . These are commanded by an officer of the rank of Lt General , Maj General and Brig respectively. These are field forces. The Corps are further divided as" Holding' and "Strike" Corps depending on their role. A defence oriented Corps is the "Holding" Corps whereas a Reserve is the "Strike" Corps.The Corp Head Quarters handle 03 to 05 Divisions. The Army has in its Order of Battle, Mountain Divisions, Infantry Divisions, Armoured Divisions and

Mechanised Divisions. Independent Brigade groups may be Armoured, Mechanised, Parachute, Engineer, Air defence, Field Artillery or Infantry/Mountain Brigades.

9. **Static Formations.** Area and Sub Area Headquarters . These are commanded by an Officer of the rank of Lt General , Maj General and Brig respectively. These span the length and breadth of the country. These look after infrastructural assets, Lines of Communications, Civil-military Liaison etc.

PART II: FIGHTING ARMS

10. **Armour.** Armour by virtue of its mobility, fire power protection and shock action is most aptly suited for present day battle field environment. The basic role of amour is to destroy the enemy by relentless, mobile offensive action, both in offensive and defensive operation. An Armd Regt has 45 tanks. In India we have TK T-72,TK T-90 & MBT Arjun tanks.

11. **Infantry.** Infantry is essentially an arm of close combat. Its role in attack is to close in with the enemy and destroy or capture him and hold ground. In Defence it is to hold ground against all forms of attack. It is also employed in counter insurgency and counter terrorism operations.

12. **Mechanized Infantry.** It is infantry with enhanced mobility and fire power. Mechanized Infantry moves in armoured personnel carrier (APC) which has adequate protection against small arms fire . Their mobility in conjunction with Armour enables own troops to obtain most favorable decision in battle. The emphasis is on mobility fire power and maneuver rather than manpower. The eqpt used are BMP- I & II.

PART III: SUPPORTING ARMS

13. **Artillery.** Artillery provides heavy volume of fire at long ranges to damage and destroy enemy position before it can be physically captured and occupied by own ground forces.

14. **Engineers.** The Corps of Engineers consists of three major constituents namely Combat Engineers, MES and Border Roads. The Corps also provides Officers to the military survey and DRDO. In wars they provide mobility to own forces by constructing bridges, tracks and helipads. They also deny the same to the enemy by creating obstacles such as laying of mine fields and demolition of bridges.

15. **Army Air Defence.** Army Air Defence is equipped with air defence guns and Short and Medium range surface to air missile systems. Alongwith air force it provides air defence to mobile forces, Vulnerable Areas and Vulnerable Points.

16. **Army aviation Corps.** The role of Army Aviation corps is reconnaissance and observation by controlling artillery and infantry mortar fire from air and also to provide commanders and staff, rapid means for liaison visits and recce. It is ideally suited for evacuation of battle casualties. They use the Chetak helicopters for logistic tasks and the Cheetahs for aggressive tasks.

17. **Signals.** The role of Signals is to provide radio, Radio Relay and line communication and establish Signal centres during war and peace. It also monitors enemies

communication systems. It is also responsible for cyber security. Its vision in the 21st century is to achieve electronic and information superiority for effective functioning of the Army.

PART III: SUPPORTING SERVICES

18. These elements provide administrative cover to the fighting and supporting arms thus enabling them to carry out their task. The services and their functions are .-

(a) **Army Service Corps.** It constitutes that part of the Army which is concerned with the planning and execution of logistic support for the fighting formations. It is primarily responsible for provisioning, procurement and distribution of Supplies, Fuels, Oils & lubricants, hygiene Chemicals and miscellaneous items to Army, Air Force and where required to Navy also. The operation of mechanical transport, (except 1st line) and the provision and operation of Animal transport is also a responsibility of the Army Supply Corps.

(b) **Army Medical Corps.** It provides medical cover during operations as well as in peace stations to troops and their families.

(c) **Army Ordnance Corps.** It is responsible to provide logistic support to the Army during war & peace . The logistic function involves the provisioning & procuring of all stores required for operations and maintenance.

(d) **Corps of Electronics and Mechanical Engineers.** The major role of EME is repair ,recovery and maintenance of all vehicles ,arms, electrical, electronics and mechanical equipment .

(e) **Remount and Veterinary Corps.** The role is breeding, procurement, caring and training of Animals. It is also involved in disease diagnosis and treatment of animals. It trains Army Dog trainers and also carries out inspection of foods of animal origin.

(f) **Army Education Corps.** It is involved in human resource development through imparting higher education to the troops.

(g) **The Intelligence Corps.** Its role is to gather intelligence of the enemy and prevent leakage of own information to the enemy.

(h) **The Corps of Military Police.** Its role is to preserve good order and discipline and to prevent breaches of the same by persons in or attached to regular Army. It also assists in movement of men, material and vehicles during peace /war.

(j) **Judge Advocate General Branch.** It deals with legal matters relating to Armed Forces.

(k) **Army Physical Training Corps.** Its role is to impart physical education and develop sports in Armed Forces.

(l) **The Pioneer Corps.** Its role is to provide disciplined and well trained manpower where civilian labour is either not available or its employment is not desirable for security reasons. They are mostly committed in operational areas.

(m) **Defence Security Corps.**Its role is to protect Defence /installations under specific instructions of the Govt of India against minor sabotage and pilferage. The DSC provides armed security staff, static guards, searchers, escorts and mobile patrols by day & night**.**

ARMED FORCES-3:
BADGES AND RANKS

Code - AF-3

Period - One

Type - Lecture

Term - I

Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction.	-	05 mins
	(b)	Badges of rank-Army	-	10 mins
	(c)	Badges of rank –Navy	-	10 mins
	(d)	Badges of rank-Air force	-	10 mins
	(e)	Conclusion	-	05 mins

INTRODUCTION

3. **Commissioned Officers.** Officers of the Army are leaders who lead everything from a company all the way to a corps and higher. Field Marshal is a honorary rank given to a General for his invaluable service and will continue to serve the rest of his term with the honorary rank. S.H.F. Manekshaw was Army Chief when India went to war in 1971 against Pakistan. In recognition of his services, he was elevated to the rank of Field Marshal.The first in post-independent India, on 01 January 1973. Field Marshal Manekshaw completed his term of office, as Army Chief, just a fortnight later on 15 January 1973. Field Marshal K.M. Crappa was also elevated to this honorary rank in 1986, after he had retired in 1953. The badges of ranks worn by commissioned officers is as given under :-


Field Marshal


General


Lieutenant General


Major General


Brigadier


Colonel


Lieutenant Colonel


Major


Captain


Lieutenant

2. **<u>Junior Commissioned Officer (JCO).</u>** The second set of Officers in the Army are Junior Commissioned Officers. The soldiers who become JCOs join the Army as sepoys and come up through the NCO ranks. The ranks of Sub Maj , Sub and Nb/Sub are used in the Infantry while the ranks of Risaldar Major, Risaldar and Nb Risaldar are used in the Armd Corps. The badges of rank worn by the JCOs are :-

Subedar Major / Risaldar Major

Subedar / Risaldar

Naib Subedar / Naib Risaldar

3. **<u>NON COMMISSIONED OFFICER (NCO).</u>** The Third set of Officers are the Non Commissioned Officers (NCOs). These ranks are given to Jawans according to their merit and seniority. The rank badges for NCOs are :-

Regimental Havildar Major / Regimental Daffadar Major

Regimental Quarter Master Havildar / Regimental Quarter Master Daffadar

Company Havildar Major / Squadron Daffadar Major

Company Quarter Master Havildar / Squadron Quarter Master Daffadar

Havildar / Daffadar

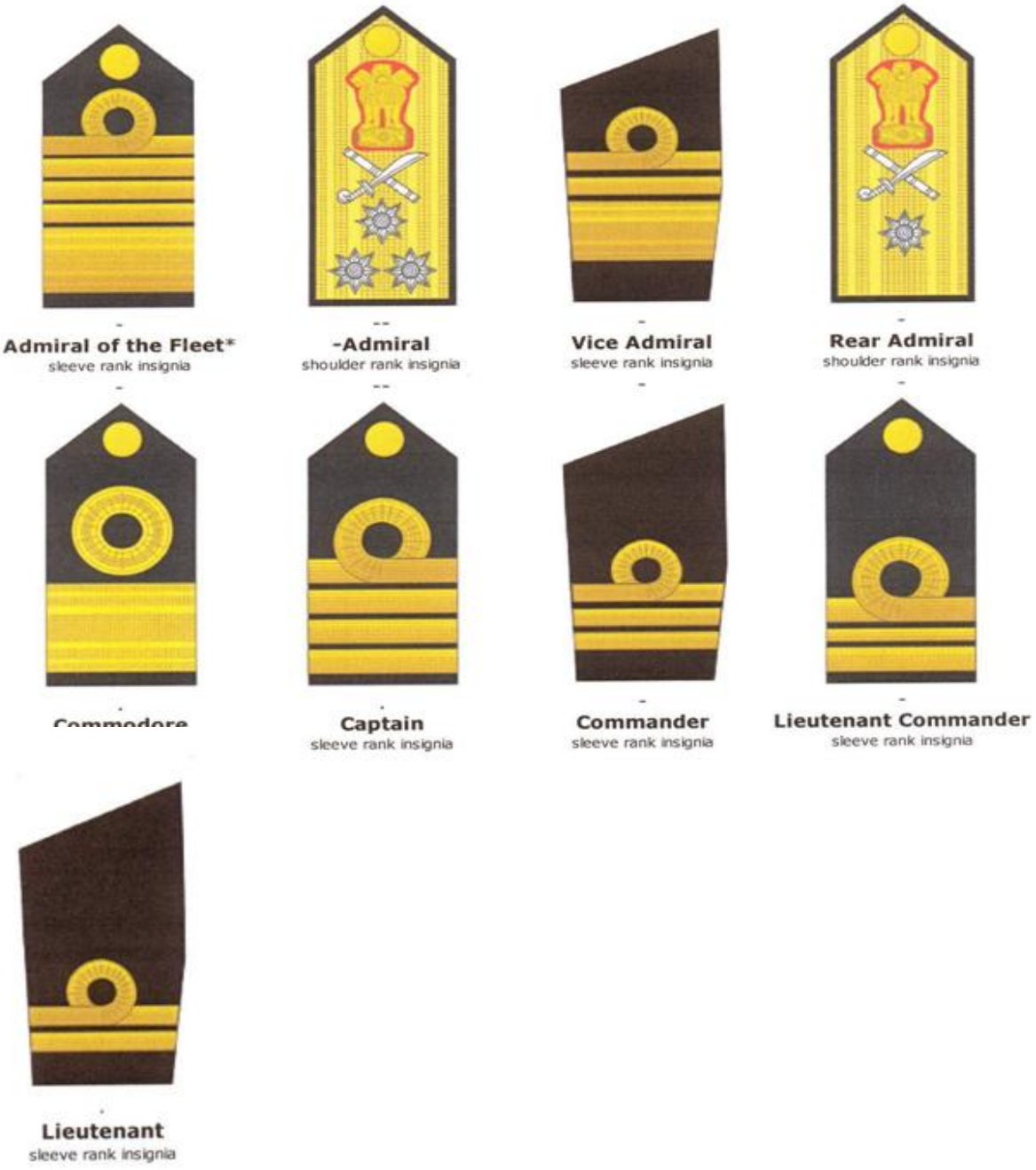
Naik / Lance Daffadar

Lance Naik / Acting Lance Daffadar

Sepoy / Sowar

NAVY

4. **Commissioned Officers.** Admiral of the Fleet is a honorary rank given to an admiral for his invaluable service and will continue to serve the rest of his term with the honorary rank. The rank has not been used in the Indian Navy. The badges of rank worn by Naval Officers are:



5. **<u>Junior Commissioned Officers.</u>** The badges of rank worn by these Officers are :-

Master Chief Petty Officer I
shoulder rank insignia

Master Chief Petty Officer II
shoulder rank insignia

Chief Petty Officer
shoulder rank insignia

6. **Non Commissioned Officers.**

Petty Officer
sleeve rank insignia
worn on left sleeve

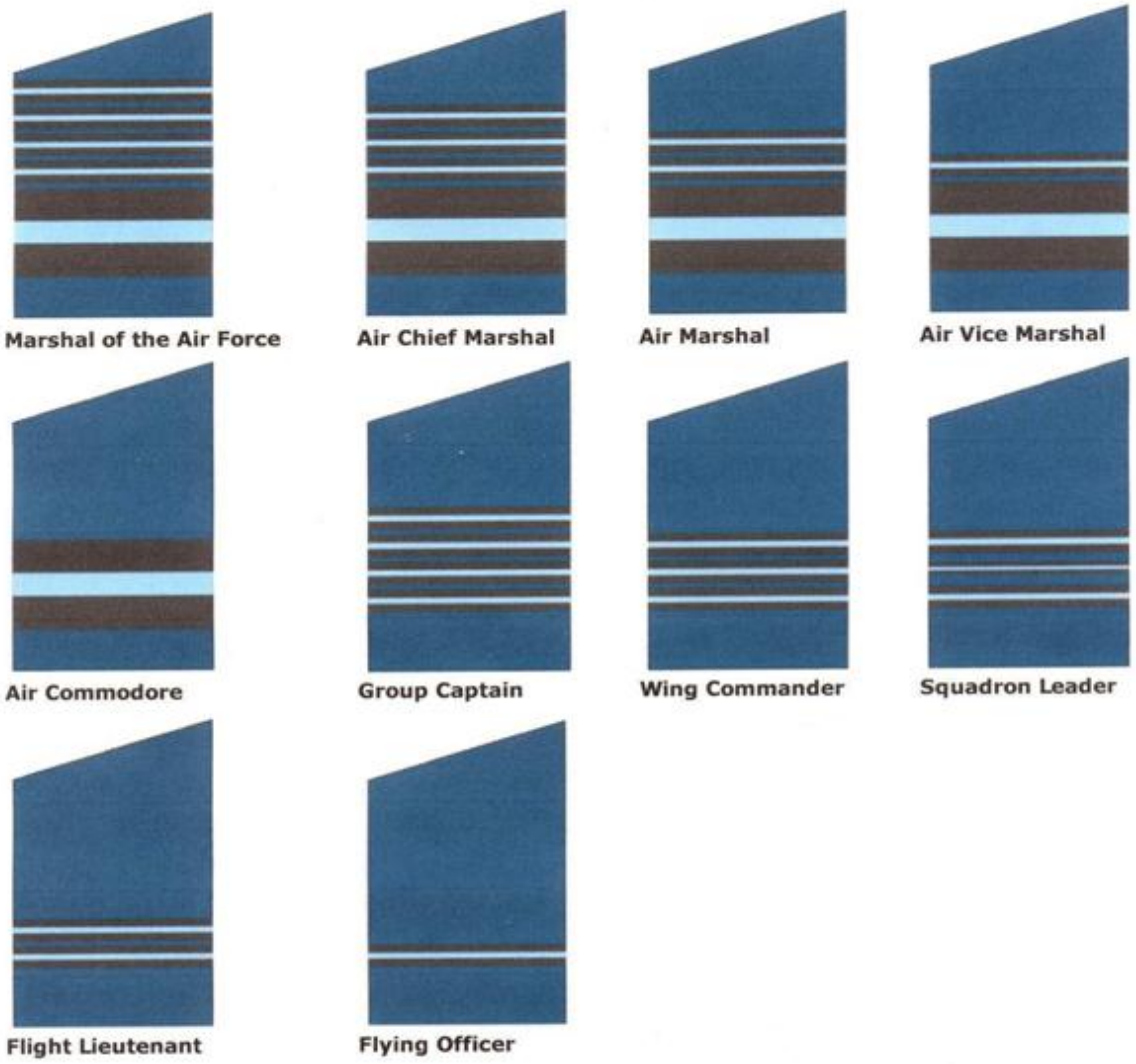
Leading Seaman
sleeve rank insignia
worn on left sleeve

Seaman I

Seaman II

AIR FORCE

7. **Commissioned Officers.** Marshall of the Air Force is the honorary rank given to an Air Chief Marshall for his invaluable service. In recognition of his services the Government of India conferred the rank of Marshall of the Air Force to Arjan Singh in January 2002 making him the first and the only 'Five Star' rank officer with the Indian Air Force. The badges of rank worn by officers are :-



8. **<u>Junior Commissioned Officers.</u>** The badges of rank worn by these officers are:-

9. **Non Commissioned Officers.**

Sergeant

Corporal

Leading Aircraftsman

NO INSIGNIA

Airman

ARMED FORCES 4:
TASK AND ROLE OF FIGHTING ARM

Code - AF-4

Period - Two

Type - Lecture/video

Term - II

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Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction.	-	05 mins
	(b)	Part I- Infantry	-	25 mins
	(c)	Part II-Armour	-	25 mins
	(d)	Part III-Mechanised Infantry	-	20 mins
	(d)	Conclusion	-	05 mins

PART I- INFANTRY

INTRODUCTION:

3. In the ultimate analysis, defeat of the enemy implies the destruction or disarmament of his fighting forces and physical occupation of his territory and coordinated effort of the land, sea and air forces but ultimately it is infantry that captures and occupies ground and destroys the enemy in his fortifications.

ROLE OF INFANTRY:

4. Infantry is essential an arm of close combat. Its role in attack is to close with enemy and destroy or capture him; in defence it is to hold against all forms of attacks by the enemy.

CHARACTERISTICS:

5. **Self Reliance:** This is the basic and most important characteristic of the infantry. Although maximum support by other arms will normally be available, there will be numerous

occasions when infantry will have to close with the enemy with no support other than the provided from within the battalions.

6. **Ability to Hold Ground:** Infantry is the arm best suited for this task. The more support it can be given, the more efficient and economically it can carry out this task.

7. **Adaptability:** Infantry is highly adaptable and can operate over any type of ground, by day or by night and under almost any climatic conditions. The infantry soldier and his equipment are readily transported by land, sea or air to the battlefield.

8. **Mobility:** Infantry mobility should not be measured in terms of marching speeds over easy country. The characteristics of the infantry in this respect is that, unlike other arms, it has a degree of mobility over almost any kind of country and given appropriate transport, it can travel as other arms.

9. **Vulnerability:** Infantry is responsible for its own protection at all times. It is vulnerable to the following: -

(a) **Ground Action:** To tank and small arms fire especially machine guns. Protection against artillery and small arms fire is obtained by careful siting, concealment, dispersion, digging, skilful use of ground, by utilising periods of poor visibility and darkness and by maximum neutralising fire including smoke. When dug in, infantry is capable of defending itself against tanks with is integral antitank weapons. When on the move and during initial reorganization, it normally require the support of armour against a tank threat.

(b) **Air Attack:** Infantry in the open is vulnerable to air attack. Casualties can, however, be reduced by dispersion, concealment and digging. If adequate measures are taken, infantry is less vulnerable than other arms, for example, armour and artillery.

(c) **Anti Personnel Mines:** A minefield with a density of three blast type of anti-personnel mines will cause about 10 percent casualties and a minefield of similar density consisting of blast and fragmentation types of mines laid in the ratio of 3:1 will cause approx 25% Casualties. Though Infantry will normally be provided engineer resources, when anti-personnel mines are encountered in large numbers, it should be trained to negotiate a minefield either by rushing through it or after creating a lane by its own effort.

Employment And Tactics:

10. **Employment:** Infantry may be employed in any operation of war but whatever the nature of the operation, with the possible exception of withdrawal, the basic role of infantry remains the same, that is, to close with the enemy to destroy or capture him and to hold ground.

11. **Tactics:** Fire and movement is the basis of all infantry tactics. Infantry organisations from section upwards are based on this principal. To cover its movement, the infantry requires supporting fire from within its own resources and from other arms. Infantry units and sub units must, however, be trained to continue their movement in the face of enemy opposition without entirely depending on support from other arms, by skilful use of ground entirely depending on

support from other arms, by skilful use of ground or by movement under cover of darkness, smoke or fog.

Infantry Weapons

12. The basic infantry weapons are the rifle and bayonet, the light machine gun and grenades. In addition certain personnel are armed with the carbine or pistol. Support weapons are the 2 inch and 81 mm mortars, machine guns and infantry anti-tank weapons.

Training

13. The basic training of the infantryman must be more flexible than that of any other arm. The training of infantry must cultivate skill at arms, endurance, courage, initiative, adaptability and skillful use of ground.

PART II-ARMOUR

Role of Armour

14. The role of armour is to destroy the enemy by relentless, mobile, offensive action, both in offensive and defensive operations.

Principles of Employment

15.. **General.** The basic principles of war equally apply to the employment of armour. Certain principles, however, assume greater emphasis in view of the characteristics of armour which must be fully exploited to achieve success in battle.

16. **Offensive Action.** Armour is primarily an offensive weapon and it must be used as such. This offensive characteristic is achieved by a combination of mobility, flexibility, fire power and armour protection of tanks. Even in those operations of war which are basically defensive. The tasks given to armour should be offensive in nature and concept. Armour must be employed as aggressively as possible, accepting calculated risks where necessary.

17.. **Concentration.** Armour used concentrated, produces decisive results. For maximum shock effect it should be used in mass in depth. The shock action produced by armour increases greatly as the number of tasks employed is increased. At the same time own tank casualties are reduced in view of the heavier volume of fire available to deal with hostile tanks and antitank weapons and by making target acquisition difficult for the enemy. In the words of FM Slim, “the more you use, the less you lose”. However, concentration does not imply that tanks must be concentrated in space at all times. Initial dispositions of a force may require armoured units and formations to be dispersed. But they must be concentrated at the decisive time. Thus concentration is required in time and not so much in space.

18. **Economy of Force.** The principle is a corollary to the principle of concentration. If tanks are frittered away on nonessential tasks, concentration at the decisive point suffers. The temptation to employ tanks everywhere is great and must be guarded against. Equally, indiscriminate and continued use of armoured units causes deterioration in their equipment resulting in such units not being at the peak of their battle worthiness when required for a really worthwhile task. The tendency to assign a multitude of tasks, to an armoured unit or subunit

particularly during a defensive battle should be curbed and it should be borne in mind that once committed in an action, the same units may not be available for subsequent tasks in terms of time or battle worthiness. Armour should, therefore, be used when its employment will have a decisive effect on the battle.

19. **Surprise.** Armour achieves surprise mainly by weight, violence and direction of its attack combined with the speed with which the operation is executed. This is achieved by skilful use of ground and overcoming of obstacles, both nature and artificial. Due to engine noise, clatter of tracks and dust which tanks create, it is not always easy to conceal their presence. Concealment of large armoured forces is difficult because of the improved surveillance devices, based both on the ground and air, available these days. Nevertheless surprise can be achieved by holding armour back until the last moment, by moving it at night or during bad weather and by the employment of deceptive measures such as the creation of tank noises in areas where it is not intended to employ them. With night fighting aids becoming increasingly more effective, imaginative use of armour at night will assist in gaining surprise. It must be remembered that more achievement of surprise is not enough; it is the exploitation of the opportunity created by achievement of surprise that will pay rich dividends.

20. **Flexibility.** Sound organization, good physical mobility and excellent means of command and control allow a high degree of flexibility. This enables pre-arranged plans to be altered to meet changing tactical situations and unexpected developments. By virtue of this flexibility and the speed with which armour can come into action, armour is extremely responsive to command which makes it an ideal weapon for seizing fleeting opportunities in battle. The armour commander must therefore be allowed the maximum possible initiative and freedom of action in execution of plans.

21. **Cooperation.** The full potential of armour can only be developed when it is organised into closely knit battle groups which should include tanks, mechanised infantry, self propelled artillery, assault engineers, attack helicopters and is provided with close air support. The composition of these combined arms teams should be need based and will depend on the troops. Common doctrine and joint training should ensure that such groups operate smoothly with complete mutual confidence and understanding.

22. **Speed.** In mobile warfare speed is of the utmost importance. It implies the following : -

(a) Speed in decision.

(b) Speed in issue of orders.

(c) Speed in execution.

23. **Speed in Decision.** This will invariably decide the final outcome of a battle. Commanders must therefore, operate well forward so that they can assess a situation and take decision on the spot. Reconnaissance and intelligence reports must reach a commander by the fastest possible means. The fundamental tactics of mobile warfare are speed in judgement and action and to create situations for the enemy faster than he can react to them.

24. **Speed in Issue of Orders.** In mobile operations there is no place or time to issue bulky and detailed written orders. The best method is for a commander to issue verbal instructions to his subordinates. The next best method is to issue orders on the radio. Sometimes very brief written orders may be sent through liaison officers. Such orders should cover the tasks and terms of reference, if any. Detailed execution should be left to the subordinate commanders.

25. **Speed in Execution.** Quick response to command, complete coordination and speed of maneuver are vital to success. The main criterion for a commander is to ensure that the allotted mission is completed within the duration stipulated for it. Speed in execution is also achieved by sound and well rehearsed battle drills. The battle drills should cater for mixed battle groups. These should be so devised that there is no rigidity in the mode of fighting and that the troops deploy for battle automatically from the line of march.

26. **Initiative.** The side that has the initiative, automatically gains an advantage over the opposing force. In simple terms, he who acts has the initiative, than the one who reacts. Retention of initiative implies retention of the power of maneuver thereby enabling a commander to create situations rather than reacting to the ones created by the enemy. It is therefore, imperative that the initiative must be seized and retained from the outset.

PART III: THE MECHANISED INFANTRY

Introduction

27. The concept of mechanized infantry is based on the need to provide protection, added mobility, radio communications and firepower to enable the infantry to operate effectively in mobile operations. The Infantry Combat Vehicle provides the infantry with these basic needs of protection, mobility and firepower so as to enable it to operate effectively in close coordination with armour.

Role of the Mechanized Infantry

28. **Primary Role.** The primary role of the mechanised infantry is to close with the enemy in coordination with armour and destroy or capture the enemy.

29. **Secondary Role.**

(a) Mop up ground over-run by armour.

(b) Hold ground temporarily.

(c) Reconnaissance.

(d) Establish a bridgehead across an anti-tank obstacle for rapid exploitation by armour.

(e) Could be used for spoiling attack or a deliberate counter attack.

(f) For counter infiltration and against para and heliborne landings.

30. **General.** Mechanised infantry should not be considered something distinct or different from other infantry. Mechanized infantry, while retaining all the characteristics and capabilities of infantry has been endowed with certain additional characteristics, which make it more versatile and particularly suitable for mobile operations with armour. The special characteristics possessed by mechanized infantry are discussed in the succeeding paragraphs.

31. **Mobility.** Mechanised infantry units have been provided sufficient armoured personnel carries to lift the 'F' echelon. The Armoured personnel carriers give them the capability to move cross country and because of the amphibious capability of the armoured personnel carriers, infantry can cross canals or rivers without dismounting-which makes the mechanized infantry particularly suitable for opportunity or encounter crossings. Availability of suitable approaches and exits from the water obstacle may, however, restrict the use of armoured personnel carriers. In such an eventuality, which should be rare, if planning and reconnaissance have been thorough, mechanized infantry must be prepared to establish the bridgehead by dismounted action.

32. **Protection.** The light armour of the armoured personnel carrier provides protection against small arms fire and shell splinters, which enables the infantry to close with the enemy. The armoured personnel carriers, however, are vulnerable to enemy anti-tank weapons and direct hits from artillery.

33. **Fire Power.** Mechanized infantry is able to muster considerable firepower due to the machine guns mounted on the armoured personnel carriers. Though mechanized infantry will normally operate with armour, they have been provided with their own organic anti-tank weapons to make them self-reliant and to give them the capability to hold ground or establish a bridgehead across obstacles.

34. **Communications.** Radio is the primary means of communication in a mechanized infantry unit. To meet the requirement of receiving and passing orders quickly while on the move and for close and intimate cooperation with armour, mechanized infantry units have been provided with additional radio communication facilities for both mounted and dismounted action and for communication with tank units/sub units.

35. **Flexibility.** Increased mobility and better signal communications have given mechanized infantry greater flexibility. Mechanized infantry units and sub units can quickly form composite groups with armour for a variety of missions and can be rapidly switched over from one mission to another. They can remain self-contained on a cross-country axis for limited periods and when conditions of ground prevent the use of the armoured personnel carrier, they can fulfill their mission by dismounted action.

36. **Shock Action.** Mechanised infantry by rapidly closing with the enemy, mounted in armoured personnel carriers and bearing upon the enemy its concentrated fire power, produce a shock effect much greater than an equivalent or even a larger quantum of infantry attacking on foot. The shock effect is maximum when the mounted mechanized infantry along with armour over-runs the objective.

ARMED FORCES-5:

TASK AND ROLE OF SUPPORTING ARMS AND SERVICES

Code - AF-5

Period - One

Type - Lecture/video

Term - III

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Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction.	-	05 mins
	(b)	Part I-Supporting Arms	-	15 mins
	(c)	Part II-Supporting Services	-	15 min
	(d)	Conclusion	-	05 mins

INTRODUCTION

3. Army is basically organised into two main categories, namely the Arms and the Services. The Arms consist of the Armoured Corps, the Infantry, the Artillery, the Engineers, the Signals and more recently, the Air Defence Corps and the Aviation Corps, both of which originate from the Artillery. The Armoured Corps and Infantry are called Fighting Arms. The Artillery, Engineers, Signals, Air Defence Corps, and Aviation Corps are called Supporting Arms, as they support the Fighting Arms in the field. Those troops that provide the logistical support to the Arms are called Services. These are the Army Service Corps (ASC), Army Ordnance Corps (AOC), Corps of Electrical and Mechanical Engineers (EME) and Army Medical Corps (AMC).

PART I : SUPPORTING ARMS

4. Supporting Arms, are those Arms designed to provide the requisite support to enable combat forces of the fighting arms to accomplish the assigned tasks effectively. Armour, Infantry and Mechanised Infantry are known as “Fighting Arms”. The following Arms which assist the Fighting Arms comprise supporting Arms :-

(a) Arty

(b) Engineers

(c) Army Air Defence

(d) Army Aviation Corps

(e) Signals

(f) Int Corps

Role and Tasks of Supporting Arms.

Arty.

5. **Role.** The role of Arty is to est such fire supremacy in the battle area that enemy neither interferes with our operations, nor develops his own effectively.

6. **Tasks.**

(i) To provide heavy volume of fire at long ranges to damage and destroy enemy positions before it can be physically captured and occupied by own forces.

(ii) To provide fire support to advancing Infantry in offensive operations and defensive support to keep enemy head down with shocking Firepower.

(iii) To carry out surveillance and target acquisition to conduct counter bombardment and counter mortar.

(iv) To provide fire support to fighting arms

Engineers.

7. **Role.** The role of Engineers in War is to provide support for offensive and defensive operations in mine warfare, bridging, demolitions, constructions of field fortifications and operational roads/tracks.

8. **Tasks.**

(a) To provide mobility to own forces by constructing bridges, tracks and helipads; on the other hand the Corps denies the same to the enemy by creating obstacles such as laying mine-fields and demolition of bridges.

(b) To lay mine fields during War and also demining and maintenance of records thereof.

(c) To create water resources during operations.

(d) To assist in transportation of explosives and undertake bomb disposal activities during peace and war.

Army Air Defence (AAD).

9. **Role.** Army Air Defence is equipped with air defence guns and short and medium range surface to air missile systems. Along with Air Force it provides Air Defence to Mobile Forces, Vulnerable Areas and Vulnerable points.

10. **Tasks.**

(a) To safeguard against hostile aircrafts, helicopters and drones attacking high values targets including Fighting Arms.

(b) To ensure early detection and destruction of enemy aircrafts before they release ammunition.

Army Aviation Corps (AAC).

11. **Role.** The role of Army Aviation Corps is reconnaissance and observation by controlling Artillery and Infantry mortar fire from air and provide Commanders & Staff rapid means for reconnaissance of operational areas. It is ideally suited for evacuation of battle causalities.

Signals.

12. **Role.** The role of Signals is to provide radio, radio relay and line communication and establish signal centre during war and peace. It also monitors enemy's communication system.

13. **Intelligence Corps.** The main task of Intelligence Corps is to gather intelligence of the enemy and prevent the leakage of own information to the enemy.

PART II:SUPPORTING SERVICES

14. The services and the functions of some of them in brief are: -

(a) **Army Service Corps (ASC).** ASC is responsible for : -

(i) For the supply and provision of ration to the Army during peace and war.

(ii) To provide fuel oil and lubricants to the entire Army.

(iii) To provide transport for conveyance of troops during movement.

(iv) Transportation of heavy equipment and machineries including ammunition during war.

(b) **Army Medical Corps (AMC).** AMC is responsible for providing the medical cover to the entire Army units located in peace and field both. In peace time Military Hospital located along cantonments are providing medical cover to peace time units including Ex-Servicemen.

(c) **Army Ordnance Corps (AOC)** Army Ordnance Corps is responsible for the supply of entire range of stores and equipment to the Army which are not the responsibility of ASC, AMC and that of ENGINEERS. It covers the following types of stores which are stocked in central ordnance depots (CODs) located at different places.

(d) **Corps of Electrical & Mechanical Engineers (EME).** Corps of Electrical and Mechanical Engineers (EME) is responsible for the repair, recovery and maintenance of all vehicles armaments, electronics and communication equipment held by the Army.

(e) **Remount and Veterinary Corps (RVC).** RVC is responsible to maintain and train animals utilized by the army like mules for carrying loads, dogs for tracking and sniffing, horses for equestrian activities.

(f) **Army Education Corps (AEC).** AEC is responsible for imparting Military & Civil education to troops which helps them in passing promotion exams reqd in their career and profession.

(g) **The Corps of Military Police (CMP).** CMP helps in maintaining discipline related to Army personnel and also helps Army during mobilization interacting with the civil traffic police in route.

(i) **Judge Advocate General (JAG).** Deals with legal matters relating to all branches of the Armed Forces.

(j) **Army Physical Training Corps (APTC).** Deals with physical education and Corps supports the Armed Forces by providing trained manpower to all the regimental recruitment centres and the Officer Training Academies.

(k) **The Pioneer Corps.** Deals with provision and looking after manpower for load carriage in the Armed Forces.

(l) **Defence Security Corps.** Provide security to Vital Areas, Vulnerable Points and other important installations like Air fields, Airports, Shipping Yards. Bulk manpower in DSC comes from Ex-Defence Personnel and TA units.

ARMED FORCES -6:
MODES OF ENTRY TO ARMY

Code - AF-6

Period - One

Type - Lecture

Term - II

Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction.	-	05 mins
	(b)	Part I-Types of Commission	-	05 mins
	(c)	Part II-Entry Scheme Officers (Men/Women)	-	10 mins
	(c)	Part III-JCOs and Other Ranks	-	05 mins
	(d)	Part IV-Recruitment procedure	-	10 mins
	(e)	Conclusion	-	05 mins

INTRODUCTION

General : What The Army Offers.

3. All of you have aspirations and dreams, of what your education will finally yield. If you are looking for a fat pay packet, a corporate job is the answer. But above and beyond this should be the question of what the job offers in totality. Let us see what attributes go into making an excellent career. The attributes that one expects from a satisfying profession are:-

(a) Professional Advancement

(b) Job Satisfaction

(c) Job Security

(d) Economic Stability

(e) Social Status

(f) Quality of Life

(g) Variety and Adventure

4. If these are what you are looking forward to, then Army is the profession for you.

5. All of us are aware that, professions are competitive, in so far as promotions are concerned. Army is no different. However, as said earlier the competition in the Army is clean and devoid of any other factor but competence.

6. The Indian Army is the land based branch and the largest component of the Indian Armed Forces. The president of India is the Commander –in – Chief of the Army. The Chief of Army Staff (COAS), a General, is a four star commander who commands the army.

7. Its primary mission is to ensure the national security and defence of the Republic of India from external aggression and threats, and maintaining peace and security within its borders. It also conducts humanitarian rescue operations during Natural calamities and other disturbances. As a major component of national power alongside the Indian Navy and the Indian Air Forces, the roles of the Indian Army are as follows; Primary- preserves national interests and safeguard sovereignty, territorial integrity and unity of India against any external threats by deterrence or waging war. Secondary -assist Government agencies to cope with 'proxy war' and other internal threats and provide aid to civil authority when requisitioned for the purpose.

AIM

8. Aim of the lecture is to introduce with the type of entries, procedures and other Qualitative Requirement of the entry into Indian Army.

PREVIEW

9. The lecture shall be covered in following Parts:-

(a) Part-I - Types of Commission

(b) Part-II - Entry scheme (men and women)

(c) Part-III - JCO and Other Rank

(d) Part-IV - Recruitment Procedure

PART I:TYPES OF COMMISSION

10. There are a number of ways in which one could get a commission in the Army. You can join right after school or after graduation. The selection procedures are impartial, objective and are uniformly applied to one and all and have only one aim – to “select the best”.

Types of Commission.

11. The Army offers both Permanent and Short Service Commission. Permanent commission (PC) is granted through the Indian Military Academy (IMA) Dehradun and Short Service Commission (SSC) is granted through Officers Training Academy (OTA) Chennai. When you opt for ‘PC’, you are basically looking at a permanent career in the Army, a career till you retire. SSC is a wonderful option for all those of you who aspire to serve it for a few years. It gives you the option of joining the Army, and serving it as a commissioned officer for ten years. Once your tenure is over, you are allowed to opt for PC. Alternatively, you can also ask for a four years extension and can choose to resign from your post any time during this period.

(a) **Permanent.**

(i) NDA - AFTER 10+2(Through UPSC)

(ii) DIRECT ENTRY (Through UPSC)

(iii) ENGINEERING GRADUATES - TGC

(iv) UNIVERSITY ENTRY SCHEME 10 +2 TES

(b) **Short Service.**

(i) NON-TECH (Both men & women)

(ii) TECH (Both men & women)

(iii) NCC SPECIAL ENTRY (Both men & women)

(vi) LAW GRADUATES(Both men & women)

Note. Details of eligibility criteria duration and venue of training and other information is freely available through news papers or may be obtained from www.joinindianarmy.nic.in. The following telephone numbers may also be contacted. (011) 26173215, 26175473, 26172861.

Permanent Commission.

12. A permanent commission means a career in the army till you retire. For a permanent commission you have to join the National Defence academy Khadakwasla or the Indian Military Academy Dehradun.

The National Defence Academy Pune.

13. You can take the NDA entrance exam right after class XI. Clear the UPSC exam and a 5-day Service Selection Board interview, pass your medicals, and you're in NDA Three years in NDA and you will be a much improved person a part from providing graduation digress , NDA has the finest infrastructure for professional training. You'll find phenomenal opportunities to develop your personality and cultivate new interests three are 31 extra – curricular activities to choose from. You have aero –modelling, golf, gliding, sailing, wind surfing, astronomy, photograph and many more. For more details about NDA KHADAKWASLA visit website www.nda.nic.in

Indian Military Academy Dehradun

14. Indian Military Academy is another cradle of leadership. The IMA trains you to lead from the front. You are trained in all aspects of combat and tactics using computers and other modern tools and technologies. The IMA has excellent facilities for all-round development. You can go for adventure sports like river rafting, para jumping, rock climbing, trekking and mountaineering. From the IMA, you're commissioned as a "Lieutenant" and mountaineering. From the IMA, you're commissioned as" Lieutenant" in the India Army to go out into the world and live to the IMA motto- "Valour & Wisdom". There are four main entries to get into IMA :-

(a) **Combined Defence Service Examination (CDSE)** In final year of Graduation, you need to pass the Combined Defence Service Exams being conducted by UPSC, clear the SSB interview, be medically fit and join IMA as a Direct Entry provided you come in merit. For details of exam dates/notification visit UPSC website upsc. nic.in The other entries are Non UPSC entries (There is no written exam. You are directly called for SSB interview)'-

(b) **10+2 Tech Entry.** You can apply after your12th Exams. Minimum aggregate of 70% is madatory in physics ,Chemistry and Mathematics. You will be detailed for SSB interview based on the cut off as decided by Recruiting Directorate. Look out for the advertisement published in leading newspapers/employment news in may/Dec every year. Total training is five year.(one year at OTA Gaya and four years at Cadets Training Wings)

(c) **University Entry Scheme (Pre Final Year Students Only).**This entry is for those of you who wish to apply for army in Pre-Final year of engineering . Look out for the advertisement published in leading newspapers/employment news in may every year.

(d) **Technical Graduate Course.** Those who are studying in final year/ have completed BE/B Tech in notified streams can also join IMA through Technical Graduate Course. The duration of training is 1 year though Technical Gradate Course. The duration of training is 1 year .Look out for the advertisement published in leading newspapers/employment news in may/Jun & Nov/Dec every year.

Short Service Commission.

15. You also have the option of joining the Army and service as a Commissioned Officer for 10 year and is extendable up to 14 year. At the end of this period you have two options. Either elect for a permanent Commission or opt out.

16. Those not selected for Permanent Commission have the option of a 4 year extension. They can resign at any time during analytical thinking, planning skills administrative and organization that you join after the Army and there are opportunities to side step to an altemate career for which Army will also help you.

Officers Training Academy, Chennai

17. Once selected for Short Service Commission , you go to the officers Training Academy at Chennal. The selection process is written exam followed by the SSB interview and medicals. For Technical (Engineering) graduates and law graduates if is direct SSB interview and medicals. If you have done NCC Senior Division (Army) and obtained 'C' certificate with minimum 'B' grade, you can apply through your NCC Branch HQ/Zonal HQ to Recruiting Directorate for direct SSB interview. SSB qualified candidates undergo a medical examination. The duration of training is 49 weeks OTA training provides you with opportunities to broaden your perspective and widen your horizon. Whether It's skeet –shooting, golf, riding or angling…at OTA you can do if all.

Short Service Commission For Women (Officers)

18. In 1992, an important landmark in the history of Indian Army was the induction of women into the officer cadre, and the onerous task of training them was undertaken by the Officer Training Academy.

Revised Term and Conditions of Service of SSCOs(Women both) Technical and Non-Technical)

19. Prominent features of the revised policy are :-

(a) **Extension of Tenure.**

(i) Tenure of Short Service Commission, Short Service Commission (SSC) in the Regular Army will be granted for 14 year i.e. for an initial period of 10 year, extendable by 4 years.

(ii) Duration of Training. 49 weeks.

(b) **Substantive Promotion.** SSCOs will be eligible for substantive promotion.

(i) **To the rank of Capt**. on completion of 2 years reckonable Commissioned service.

(ii) **To the rank of Maj.** on completion of 6 years reckonable commissioned service.

(iii) **To the rank of Lt Col**. on completion of 13 years reckonable commissioned service.

PART – II : ENTRY SCHEMES(MEN AND WOMEN)

20. *The Indian Army is looking for a few "GOOD MEN". For the best and brightest amongst them Men with intellect idealism and courage. Men who could lead and inspire others. There are following Entry Schemes for MEN.*

(a) **Intermediate Level**

(i) NDA

(ii) 10 + 2 TES

(b) **Graduate UPSC**

(I) IMA (CDS)

(II) OTA SSC (Non Tech)

(c) **Graduate Non UPSC**

Law Graduate

(d) **Engineers**

(i) UES

(ii) TES

(iii) SS (Tech)

(f) **Post Graduate**

10+2 Technical Entry Scheme (10+2 TES)

Tentative Vacancies per course	85
notify in Employment News and leading Daily News Papers	Notified by ADG Rtg AG's Branch IHQ of MOD (army) in Apr & Sept
Eligibility Criteria	
Age between	$16^{1/2}$ to 19 & 1/2 yrs as of first day of the month in which course is due to commence
Qualification	12^{th} Class of 10+2 System of Education /Equivalent with a minimum aggregate of 70% in Physical, chemistry & Maths (PCM)
Marital Status	Un Married
Application to be Addressed to	Additional Directorate General of Rtg TES Section AG Branch IHQ of MOD (army) West Block III RK Puram New Delhi-110066
Training Academy	IMA Dehradun
During of Tanning	01 Year pre-commision Trg at IMA Dehradun & 03 Years at CME Pune/MCTE Mhow /MCEMe Secunderabad 01 Yers Post Commision trg at CME Pune/MCTE Mhow/MCEME Secunderabad

National Defence Academy (NDA)

Tentative Vacancies per course per	300 (Twice a years) or As notified from time to time Army-195 Air force-66 Navy-39
notify in Employment News and leading Daily News Paper	Jun and Dec as notified by UPSC
Eligibility Criteria	
Age between	$16^{1/2}$ to 19 & 1/2 yrs as of first day of the month in which course is due to commence
Qualification	12^{th} Class of 10+2 System of Education /Equivalent for Army and with Physics and Maths for AF/Navy
Marital Status	Un Married

Application to be Received by	As per UPSC notification
Likely SSB date	Sep to Oct and Jan to Apr
Date Commencement of training	Jan and Jul
Training Academy	NDA, khadakwasla,pune
Duration of Tanning	3 Yrs at NDA and 1 Yrs at IMA (For Army cadets) 3 Yrs at NDA and 1 Yrs at Naval Academy (For Naval cadets) 3 Yrs at NDA and 1 & ½ Yrs at AFA Hyderabad (For AF cadets)

NCC (SPL) Entry Men

Tentative	50 (Twice a years)
Vacancies per course notify in Employment News and leading Daily News Paper	Notified by Additional Directorate General Recruiting / AG Branch in Jun & Dec
Eligibility Criteria	
Age between	19 and 25 Yrs as 01 Jul of the Yr in which course is due to commence for Oct Course 01 Jul of the Yr in which course is due to commence for Apr Course
Qualification	Final Years appearing/Graduate with 50% Aggregate marks, 2 Yrs service in NCC Senior Div army with minimum 'B' Grade in 'C' Certificate Exam.
Marital Status	Un Married /Married
Application to be Received by	Oct/Nov and Apr/ May through NCC Dte
Likely SSB Date	Dec/Jan and Jul/ Jun
Date Commencement of Trg	Apr and Oct
Training Academy	OTA, Chennai
Duration of Trg	49 Weeks

Indian Military Academy Direct Entry (Non Technical Men)

Vacancies per course	250 (Twice a year)
notify in Employment News and leading	Notified by UPSC under the aegis of CDSE in May/ Jun and Nov/Dec
Daily News Paper	
Eligibility Criteria	
Age between	19 and 24 yrs as of first day of month in which course is due to commence
Qualification	Graduation from Recognised University
Marital Status	Un Married
Likely SSB Date	Jul to Aug and Mar/Apr
Date of Commencement of Trg	Jan and Jul
Training Academy	IMA Dehradun
During of Tanning	18 Months

Officer Training Academy (Non Technical Men)

Vacancies per course	175 (Twice a year)
Notify in Employment News and leading	Notified by UPSC under the aegis of CDSE in May/ Jun and Nov/Dec
Daily News Paper	
Eligibility Criteria	
Age	19 and 24 yrs as of first day of month in which course is due to commence
Qualification	Graduation from Recognised University
Marital Status	Un Married /Merried
Likely SSB Date	Nov/Dec and May/Jun
Date of Commencement of Trg	Apr and Oct
Training Academy	OTA, Chennai
During of Tanning	49 Weeks

TGC (Engineers)

Vacancies per course	As Notified (Twice a Year)
notify in Employment News and leading	Notified by Additional Directorate General Recruiting / AG Branch in Apr and Oct
Daily News Paper	
Eligibility Criteria	
Age	20 to 27 years
Bron Between	2nd Jan to 1st Jan for Jan Course.
	2nd Jul to 1st Jul for Jul Course.

Qualification	BE/ B Tech in notified streams of Engineers
Marital Status	Un Married /Merried
Application to be Received by	Apr/ May and Oct/ Nov
Likely SSB Date	Mar/Apr and Sep/Oct
Date of Commencement of Trg	Jan and Jul
Training Academy	IMA
During of Tanning	One Year

University Entry Scheme

Vacancies per course	60
Notify in Employment News and leading Daily News Paper	Notified by Additional Directorate General Recruiting / AG Branch in May. Application to be forwarded to respective Command Headquarters as per the areas indicated in the notification
Eligibility Criteria	
Age	19 to 25 yrs for Final Year, 18 to 24 Yrs for per Final Year
Born Between	2nd Jul to 1st Jul for Jul Course.
Qualification	Final and pre Final year student of Engineering Degree Course
Marital Status	Un Married
Application to be Received by	31 Jul or as specified in the notification.
Likely SSB Date	Jan to Mar for final year Aug to Oct for pre final year
Date of Commencement of Trg	Jul at IMA Dehradun

Short Service Commission (Technical) (Men)

Vacancies per course	As Notified (Twice a Year)
Notify in Employment News and leading Daily News Paper	Notified by Additional Directorate General Recruiting / AG Branch in Dec/Jan and Jun/Jul
Eligibility Criteria	
Age Between	20 to 27 yrs as on first day of the month in which course is due to commence
Qualification	Engineering Degree in notified discipline
Marital Status	Un Married /Married
Application to be Received by	To Apply online & application to be fwd as given in advertisement
Likely SSB Date	Nov to Jan for Apr Course and May to July for Oct Course

Date of Commencement of Trg	Oct and Apr
Training Academy	OTA Chennai
During of Tanning	49 Weeks

JAG (Men)

Vacancies Per Course	As Notified
Notify in Employment News and leading Daily news Paper	
Eligibility Criteria	
Age between	21 and 27 yrs as on 01 Jul of the yr in which course is due to commence for Oct course and 01 Jan of the yr in which course is due to commence for Apr course
Qualification	Graduate with LLB / LLM with 55% marks. Registered with Bar Council of India / State
Marital Status	Un Married / Married
Application to be Received by	Oct / Nov and Apr / May
Likely SSB Date	Dec - Jan and Jul - Aug
Date Commencement of Trg	Apr and Oct
Training Academy	OTA CHENNAI
Duration of Trg	49 Weeks

TGC Education (AEC)

Vacancies per course	As Notified (Twice a Year)
notify in Employment News and leading Daily News Paper	Notified by Additional Directorate General Recruiting / AG Branch in May/Jun and Nov/Dec
Eligibility Criteria	
Age	23 to years
Bron Between	2nd Jan to 1st Jan for Jan Course.
	2nd Jul to 1st Jul for Jul Course.
Qualification	MS/MSC in 1st or 2nd division in notified subject from Recognized university
Marital Status	Un Married
Application to be Received by	Jun/Jul and Dec/Jan
Likely SSB Date	Sept/Oct and Apr/May

Training Academy	IMA
During of Tanning	One Year

21. In 1992, an important landmark in the history of Army was the induction of women into the officer cadre, and the onerous task of training them was undertaken by officers Training Academy. So far, more than 1200 Lady cadets have already been commissioned into, into the various Arms Service of the Indian Army. You should be a graduate to apply.

Revised Terms and Conditions of Service of SSCOs (Men and Women) both (Technical and Non –Technical)

22. Prominent features of the revised policy are :-

(a) **Extension of Tenure.**

(i) Tenure of Short Service Commission. Short Service Comission (SSC), in the Regular Army will be granted for 14 years i.e for an initial period of Ten years, extendable by Four years.

(ii) Duration of Training 49 weeks

(b) **Substantive Promotion**. SSCOs will be eligible for substantive promotion.

(I) **To the rank of Capt** on completion of years reckonable commissioned service.

(ii) **To the rank of Maj** on completion of 6 years reckonable commissioned service.

(iii) **To the rank of Lt Col** on completion of 13 years reckonable commissioned service.

NCC (SPL) Entry Women

Vacancies Per Course	As notified
Notify in Employment News and leading Daily news Paper	Notified by Additional Directorate General Recruiting / AG Branch in Jun / Dec
Eligibility Criteria	
Age between	19 and 25 yrs as on 01 Jan of the yr in which course is due to commence for Apr course and 01 Jul of the yr in which course is due to commence for Oct course
Qualification	Final Year appearing/Graduate in any discipline with 50% Aggregate marks, 2 Yrs service in NCC Senior Div Army with minimum 'B' Grade in 'C' Certificate Exam.
Marital Status	Un Married
Application to be Received by	Oct / Nov and Apr / May through NCC Gp HQ/NCC Dte
Likely SSB Date	Nov to Jan for Apr Course and May to July for Oct

	Course
Date Commencement of Trg	Apr and Oct
Training Academy	OTA, Chennai

Short Service Commission Non Technical Women

Eligibility Criteria

Age between	19 and 25 yrs as on 01 Jan of the yr in which course is due to commence for Apr course and 01 Jul of the yr in which course is due to commence for Oct course
Qualification	Graduation / Post Graduation from Recognized University.
Marital Status	Un Married
Application to be Received by	applications to be forwarded to UPSC as per notification published in Apr/ Sep every year
Likely SSB Date	May/Jun and Nov/Dec
Date Commencement of Trg	Apr and Oct
Training Academy	OTA Chennai
Duration of Trg	49 Weeks

Short Service Commission Technical Women

Vacancies Per Course	As Notified (Twice a year)
Notify in Employment News and leading Daily news Paper	Notified by Additional Directorate General Recruiting / AG Branch in Dec/Jan and Jun / Jul
Eligibility Criteria	
Age between	20 and 27 yrs as on first day of the month in which course is due to commence
Qualification	Engineering Degree in notified discipline
Marital Status	Un Married
Application to be Received by	Feb / Mar and Jul / Aug
Likely SSB Date	Nov to Jan for Apr Course and May to July for Oct Course
Date Commencement of Trg	Oct and Apr
Training Academy	OTA Chennai
Duration of Trg	49 Weeks

JAG Women

JAG Women	
Vacancies Per Course	As Notified
Notify in Employment News and leading Daily news Paper	Notified by Additional Directorate General Recruiting / AG Branch
Eligibility Criteria	
Age between	21 and 27 yrs as on 01 Jan of the yr in which course is due to commence for Apr course and 01 Jul of the yr in which course is due to commence for Oct course
Qualification	Graduate with LLB / LLM with 55% marks. Registered with Bar Council of India / State
Marital Status	Un Married
Application to be Received by	Oct / Nov and Apr / May
Likely SSB Date	Dec - Jan and Jul - Aug
Date Commencement of Trg	Apr and Oct
Training Academy	OTA CHENNAI
Duration of Trg	49 Weeks

23. Incase of UPSC Entries (NDA, IMA (DE) and OTA (SSC (Non Tech, men and women),wait for the UPSC ,advertisement in Employment News/Rozgar Samachar/UPSC website Thereafter, apply to UPSC online to UPSC, as per instructions given by UPSC in the advertisement.

24. In case of other entries details are as under :-

(a) **NCC Entry (Men and Women)** After advertisement is issued in Dec or Jun, download common application form from this website and submit from duty filled with requisite documents to respective NCC unit/Group HQ. War Widows and Wards of battle Casualties : After downloading common application form from this website ,post the form duty filled with attested photocopies of documents to Rtg Dte (Rtg-6), as per the address given in the advertisement.

(b) **10=2 TES,TGC,SSC (Tech,men and women)** Apply online through this website, after the advertisement is issued, within the period stipulated in the advertisement and mail the printed online application to ADG Rtg (Rtg-6) ,West Block 3, R K Puram New Delhi- 110066,within the time period stipule in the advertisement.

(c) **University Entry Scheme (Pre Final Year Students Only)**. Advertisement will be published in the month of Jun/Jul every year. Apply to concerned Command Headquarters as per the advertisement published Download the common application form for UES from DOWNLOAD Menu on the main page of this website and apply as per advertisement.

Points To Note for Non –UPSC Entries.

25. 10 th Class Certificate 12th Class Certificate and latest College Education documents (final mark sheet or previous semester marksheets or degree cert or provisional degree cert) are required to be attached as attested photocopies with most application as given in the advertisement. The documents are be attested by gazette Officer,

PART III - JCO & OTHER RANKS

Eligibility Criteria For Recruitment of JCOs and Other Ranks are given in the table below:-

Minimum Educational Qualification and Age Criteria

S No	Category	Education	Age
1	Solder (General Duty) (All Arms)`	SSLC/Metrics with 455 marks in aggregate and 32% in each subject No percentage considered in case candidate has passed higher qualification ie 10+2 and above	17 ½21 yer
2	Solder (Technical Technical Arms Artillery, Army Air Defence)	10+2/ intermediate Exam pass in Science with Physics, Chemistry, math's and English with 505% marks in aggregate and 40% in each subject (simple pass in 10+2 with requisite subject is acceptable up to 31 mar 2013.	17 ½23 Yrs
3	Soldiers Clerk/Store Keeper Technical (All Arms	10+2 Intermediate Exam pass any stream (Arts, commerce, Science) with 50% marks in aggregate and minimum 40 % in each subject. Should have studied and passed English and Maths/Accts/Book Keeping in CI X or CI XII with 40% marks in each subject. In case of graduate with marks and English as subject in Bsc the stipulation of 40% in CI or CI XII is waived off. In case of gradute withot English and Marks/Accts/Book Keeping he should have score more than 40% in English and Marths/Accts/Book Keeping at least once in CI X or CI XII	17 ½23 Yrs
4	Soldier Nursing Assistant (Army Medical Corpa)	10+2/Intermediate exam pass in Science with Physics, Chemistry Biology and Engish with Min 50% marks in aggregate and min 40% in each subject OR In case the candidate has a BSc Degree with (Botany/Zoology/Bio-Science) and English ,the Stipulation of percentage I CI-XII is waived off However, the candidate should have studied all the four specified subjects in CI XII also	17 ½23 Yrs
5	Soldier Tradesmen (All Arms)	10th (except Syce Mess Keeper and House Keeper Who may be 8th pass)	17 ½23 Yrs
6	Soldier	10th Simple pass	17 ½23 Yrs

	General Duty (Matric Simple Pass) (All Arms		
7	Surveyor Auto Carto (Engineers)	BA/BSc with Maths Must have also passed 12th class (10+2) or equivalent with Marks and Science as main subject.	20-25 Yrs
8	Junior Commissioned officer Religious Teacher (All Arms)	Gradute in any discipline In addition requisite qualification in his own religious denomination	27-34Yrs
9	Junior Commissioned officer Catering (Army Service Corps)	10+2 of eqwvelant exam and Diploma /Certificate Course of a duration of one year or more in cookery/Hotel Management and Catering Tech from a recognized University/Food Craft Institute .AICTE recognition is not mandatory.	
10	Havildar Education (Army Education Corps)	Group X MA/Msv/MCA or BA/BSC/BCA/Bsc (IT) with B Ed.)	20-25 Yrs

Conclusion

26. ***Here if would be apt to reiterate- That all professions serve our motherland- but none of them is the same league as the Indian Army- for this is the only profession which affords you opportunity to live up to these stirring lines.***

" To every man upon this earth,

eeath comes sooner or later

And how can a man die better

Facing fearful odds

For the ashes of his father

And the temple of his Gods" -Macauley

ARMED FORCES-7:
HONOURS AND AWARDS

Code - AF-7

Period - One

Type - Lecture

Term - II

Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction.	-	05 mins
	(b)	Gallantry Awards	-	10 mins
	(c)	Non gallantry awards including NCC awards	-	10 mins
	(d)	Order of precedence for wearing of medals and decoration	-	10 mins
	(e)	Conclusion	-	05 mins

INTRODUCTION

3.. Introduction. For the purpose of classification, Indian Armed Forces Honours and Awards can be divided into two categories :

(a) Gallantry Awards

(b) Non- Gallantry Awards

AIM

2. The aim of this lecture is to introduce the SD/SW and JD/JW NCC Cadets to the various Gallantry Awards in the Army.

PREVIEW

3. The lecture will be conducted in the following parts: -

(a) Part I - Gallantry Awards

(b) Part II - Non Gallantry Awards including NCC Awards

(c) Part III - Order of precedence for wearing of medals and decoration

PART I: GALLANTRY AWARDS

4. **Gallantry Awards** Gallantry awards are again divided into two categories: -

(a) Gallantry in the face of enemy

(i) Param Vir Chakra

(ii) Maha Vir Chakra

(iii) Vir Chakra

(iv) Sena, Nao Sena and Vayu Sena Medal

(v) Mention in Despatches

(vi) Chiefs of Staff Commendation card

(b) Gallantry other than in the face of enemy

(i) Ashoka Chakra

(ii) Kirti Chakra

(iii) Shaurya Chakra

5. **Non –Gallantry Awards** are as follows

(a) Bharat Ratna

(b) Padma Vibhushan

(c) Padma Bhushan

(d) Sarvottam Yudh Seva Medal

(e) Param Vishisht Seva Medal

(f) Padam Shri

(g) Sarvottam Jeevan Rakasha Padak

(h) Uttam Yudh Seva Medal

(j) Ati Vishisht Sena Medal

(k) President's Police and Fire Service Medal for Gallantry

(l) President's Police Medal For Gallantry

(m) President's Fire Service Medal For Gallantry

(n) President's Home Guards and Civil Defence Medal For Gallantry

(o) President's Correctional Service Medal For Gallantry

(q) Yuddh Seva Medal

(r) Vishisht Seva Medal.

Conditions of Eligibility and Eligible categories

6. Conditions of Eligibility and Eligible Categories for some of the awards are given in succeeding paras.

7. **Param Vir Chakra**

(a) **Conditions of Eligibility** : Awarded for most conspicuous bravery or some daring or pre- eminent act of valour or self sacrifice, in the presence of the enemy, whether on land, at sea , or in the air. The decoration maybe awarded posthumously.

(b) **Eligible Categories** : Officers, men and women of all rank of the Army, the Navy and Air Force, of any of the Reserve Forces, of the Territorial Army, Militia and of any other lawfully constituted Armed Forces Matrons, Sister, Nurses and staff of the Nursing Service and other Services pertaining to Hospital and Nursing and Civilians of either sex serving regularly or temporarily under the order, directions or supervision of any of the above mentioned Forces.

(c) Monetary Allowances : Rs 3000/-pm and each bar to the decoration another Rs 3000/--pm to all recipients.

8. **Ashok Chakra**

(a) **Conditions of Eligibility** : Awarded for most conspicuous bravery, or some act of daring or pre-eminent act of valour or self-sacrifice other than in the face of the enemy. The decoration may be awarded posthumously.

(b) **Eligible Categories** Officers, men and women of all ranks of the Army, the Navy and the Air Force, of any Reserve Forces, Territorial Army, Militia and of any other lawfully constituted Forces Members of the Nursing service of the Armed Force Civilian citizens of either sex in all walks of life, other than members of police Force and of recognized Fire services.

(c) **Monetary Allowances** : Rs 2800/- pm and each bar to the decoration Rs 2800/-

9. **Vir Chakra**

(a) **Conditions of Eligibility** : For the acts of gallantry in the presence of enemy, whether on land or at sea or in the air. The decoration may be awarded posthumously.

(b) **Eligible Categories** Officer,s men and women of all ranks of the Army, the Navy and the Air Force , of any of the Reserve Force, of the Territorial Army, Militia and of any other lawfully constituted Armed Forces Matrons Sister, Nurses and staff of the Nursing Services and other Service pertaining to Hospital and Nursing and Civilians of either sex service regularly or temporarily under the order, directions or supervision of any of the above mentioned Forces.

(c) **Monetary Allowance** : 1700/--pm and each bar to the decoration Rs 1700/--pm to all recipients.

PART II: NON GALANTRY AWARDS INCLUDING NCC AWARDS

10. **Param Vishisht Seva Medal**

(a) **Conditions of Eligibility** : For distinguished service of the most exceptional order

(b) **Eligible Categories** : All ranks of the Armed Force including Territorial Army units, Auxiliary and Reserve Force (When embodied) and the Nursing Service in the Armed forces.

11. **Yuddh Seva Medal**

(a) **Conditions of Eligibility** : Awarded for distinguished service of a high order during war/conflict/hostilities.

(b) **Eligible Categories** : All ranks of the Army, the Navy and the Air Force, including those of Territorial Army units, Auxiliary and Reserve Force and other lawfully constituted Armed Forces when embodied. Nursing officers and other members of the Nursing Service in the Armed Forces.

12. **Sena Medal**

(a) **Condition of Eligibility** Awarded for such individual acts of exceptional devotion to duty or courage as have special significance for the Army Navy and Air Force. The award may be made posthumously.

(b) **Eligible Categories** : All ranks of Army , Navy and Air Force

(c) **Monetary Allowance** : Rs 500 /- pm and each bar to the medal Rs 500/- pm to all Sena Medal (Gallantry) awardees.

NCC Awards

13. These awards are given to NCC personnel since 1984 It includes NCC, Whole Time Lady Officers (WTLO's) Associate NCC Officers (ANO's) Girls Cadets Instructors (GCI'S) and NCC cadets.

14. **Raksha Mantri's Padak** : Rakasha Mantri's Padak is awarded to NCC personnel and cadets since 1989 for performance of any exceptional act involving courage devotion to duty and contribution of lasting value to the NCC. Every year only one Raksha Mantri's Padak is awarded.

15. **Raksha Mantri's Prashansa Patra** Raksha Mantri's Commendation is awarded to NCC personnel and cadets since 1989 for any outstanding act involving leadership, courage or devotion to duty, which enhances the image of the NCC every year maximum three Raksha Mantri's Commendation Cards are awarded.

16. **Raksha Sachiv's Prashnsa Patra** The Commendation card is awarded since 1984 for outstanding act deed in the field of adventure sports, training or for outstanding contribution in social or cultural activities. Every year maximum ten Raksha Sachiv Commendation Cards are awarded.

17. **Maha Nideshk's Prashansa Patra** : This Commendation Card is awarded since 1984 for outstanding act deed in the field of adventure sport, training or for outstanding contribution in social or cultural activities. There is no limit to the number for award of Maha Nideshak's Prashansa Patra.

18**.** **Maha Nideshak's Prashansa Patra To Civilion Personnel.** It is awarded to Central Government civilian officers/staff posted at various level in the NCC for displaying outstanding and distinguished service, dedication and devotion to work and outstanding contribution for efficient management of various NCC activities including camp.

PART III: ORDER OF PRECEDENCE FOR WEARING OF MEDALS AND DECORATION

Order of precedence for wearing of medals and decoration

1. Bharat Ratna
2. Param Vir Chakra
3 Ashoka Chakra
4. Padma Vibhushan
5. Padma Bhushan
6. Sarvottam Yudh Seva Medal
7. Param Vishisht Seva Medal
8 Maha Vir Chakra
9 Kirti Chakra
10 Padma Shri
11 Sarvottam Jeevan Raksha Padak
12 Uttam Yudh Seva Medal
13 Ati Vishisht Seva Medal
14. Vir Chakra
15. Shaurya Chakra
16. President's Police and Fire Service Medal for Gallantry
17 President's Police Medal for Gallantry
18 President's Fire Service for Gallantry
19. President's Correctional Service Medal for Gallantry
20 President's Home Guards and Civil Defence Medal for Gallantry
21 Yuddh Seva Medal
22 Sena, Nao Sena and Vayu Sena Medal
23 Vishisht Seva Medal

24 Police Medal for Gallantry

25 Fire Service Medal for Gallantry

26 Correctional Service Medal for Gallantry

27 Home Guard and Civil Defence Medal for Gallantry

28 Uttam Jeevan Rakha Padak

29 Parakram Padak

30 General Service Medal -1947

31 Samanya Seva Medal -1965

32 Special Service Medal

33 Samar seva star- 1965

34 Poorvi Star

35 Paschmi Star

36. Op Vijay Star

37 Siachin Glacier Medal

38 Raksha Medal- 1965

39 Sangram Medal

40 Op Vijay Medal

41 Op Parakram Medal

42 Sainya Seva Medal

43 High Attitude Medal

44 Police (Special Duty) Medal – 1962

45 Videsh Seva Medal

46 President's Police and Fire Service Medal for Distinguished Service

47 President's Police Medal for Distinguished Service

48 President 's Correctional Service Medal for Distinguished Service

49 President's Fire Service Medal for Distinguished Sevice

50 President's Home guards and Civil Defence Medal Distinguished Service

51. Long Service and Good Conduct Medal

52 Meritorious Service Medal

53 Police Medal for Meritorious Service

54 Fire Service Medal for Meritorious Service

55 Correctional Service Medal for Meritorious Service

56 Home Guard and Civil Defence Medal for Meritorious Service

57 Jeevan Raksha Padak

58 Territorial Army Decoration

59 Territorial Army Medal

60 Indian Independence Medal – 1947

61 Independence Medal – 1950

62 50th Anniversary of Independence Medal

63 25th Independence Anniversary Medal

64 30 Year Long Service Medal

65 20 Year Long Service Medal

66 9 Years Long Service Medal

67 Commonwealth Awards

68 Other Awards

CONCLUSION

19. Honours and Awards are ultimate recognition by the nation for unmatched act of bravery and selfless service, dedication and supreme sacrifice by soldiers/civ/or any other professionals. All of us should try for them in our professional life but by fair means.

ARMED FORCES-8:
CONCEPT OF INTEGRATED DEFENCE STAFF

Code - AF-8

Period - One

Type - Lecture

Term - III

Training Aids

1. OHP, Computer slides, pointer, screen, black board and chalk.

Time Plan

2.	(a)	Introduction.	-	05 mins
	(b)	Part I-Background	-	05 mins
	(c)	Part II-Role	-	05 mins
	(d)	Part III-Organisational Structure	-	20 mins
	(e)	Conclusion	-	05 mins

INTRODUCTION

3. The Headquarters of the Integrated Defence Staff is located in New Delhi. The CISC, his secretariat, and certain other components are located in South Block. The major portion of the Headquarters is located in Kashmir House. The Headquarters is staffed by officers and personnel from the three Services, the Ministry of External Affairs/Indian Foreign Service, Defence Finance/Defence Accounts Department, Department of Defence (Ministry of Defence) and the Department of Defence Research and Development (Ministry of Defence).

PART I: BACKGROUND

4. In 1947, very few Indians had first-hand knowledge or experience of higher defence organization and administration. Pakistan inspired invasion of Kashmir forced the pace of evolution of such an organization. A number of committees came into existence to advise the

Government and the Defence Minister on defence problems, the main one being the Defence Committee of the Cabinet, which was supported by other committees like the Defence Minister's Committee (DMC), the Chiefs of Staff Committee (COSC), the Joint Planning Committee (JPC) and the Joint Intelligence Committee(JIC).

5. In subsequent years, following the ceasefire in Kashmir and India's adherence to a policy of peace and non-alignment, most of the committees became defunct, their functions being combined.

6. After the Chinese aggression in 1962, the Defence Committee of the Cabinet was replaced by the Emergency Committee of the Cabinet – the latter excluded the attendance of Service Chiefs and the Defence Secretary unlike the former. The DMC was revamped to include scrutiny of operational developments and overseeing of defence preparedness. A number of other committees came into being to expedite the defence build-up. However, as the imminence of Chinese threat receded, most of these committees again became defunct.

7. After the Kargil Conflict, the Government constituted the Kargil Review Committee to carry out an in-depth review and analysis of Security Management System in the country. The recommendations of the Kargil Review Committee were considered by the Group of Ministers which made specific proposals for implementation based on the analysis carried out by four task forces.

8. Based on the recommendations of the Group of Ministers, **the Integrated Defence Staff was set up vide Government of India, Ministry of Defence letter number MoD/IC/1027/32/IDS/5843/2001 dated 23 November 2001.**

PART II: ROLE

Role

7. The Chief of Integrated Defence Staff to the Chiefs of Staff Committee (CISC) will support the Chairman and the Chiefs of Staff Committee (COSC) in the optimal performance of their role and functions.

PART III: ORGANISATINAL STRUCTURE

Organisational Structure

8. The Integrated Defence Staff comprises of Service Officers, Civilian Officers and Scientists and they are allocated duties, roles and functions based on responsibilities of Integrated Defence Staff. It is organized into the following major branches:-

(a) CISC Secretariat including Scientific Advisor to CISC and Financial .Advisor to CISC.

(b) Policy, Plans and Force Development.

(c) Operations.

(d) Doctrine, Organisation and Training.

(e) Defence Intelligence Agency.

(f) International Affairs and Net Assessment.

9. The Andaman and Nicobar Command (ANC) is the first integrated theatre command in India with headquarters at Port Blair. It operates directly under the COSC, through to IDS. Of late, the Strategic Forum Command (SFC) which basically comprise Strategic long range weapon systems of all three services, has also been raised and functions under the IDS.

CONCLUSION

10. The vision of IDS is **"Act as point organization for joint manship in MoD which integrates policy, doctrine, war fighting and procurement by employing best management practices"**

LESSON PLAN : MR 1
INTRODUCTION TO TYPES OF MAP AND CONVENTIONAL SIGNS

Period - Two

Type - Lecture

Code - MR 1

Term - I

Training Aids

1. Map Sheets, Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction and Aim	-	05 Min
	(b)	Definition and type of Map	-	35 Min
	(c)	Conventional Signs	-	35 Min
	(d)	Conclusion	-	05 Min

AIM

3. The aim of this lecture is to introduce the JD/JW NCC Cadets to the basics of Map reading and conventional signs.

PREVIEW

(a) Part I - Definition and Types of Map

(b) Part II - Conventional Signs

PART I: DEFINITION AND TYPES OF MAP

Definition of Map

5. A map is representation of selected natural and man made features of the whole or part of the earth's surface on a flat sheet of paper on a defínite scale and in their correct relatíve geographical positions and elevations. Symbols, colour differentiations and contours help to show the physical features- mountains , valleys and plains- in their true relationship to the land and man made features. A map, however, has the following limitations:-

(a) It is seldom, if ever, upto date.

(b) It cannot show every thing that exists on the ground.

Types of Maps

6. There are different types of maps depending on their scale and their use. Important types of maps are as under:-

(a) **Atlas Maps**. These are small scale maps showing whole country's continents, oceans or even world on one sheet.

(b) **Topographical Maps**. These are maps with which we are concerned in map reading. Survey of India maps are all topographical maps.

(c) **Relief Maps**. These are solid maps built as an actual model of the ground.

(d) **Outline Maps.** These indicate general plan of the country e.g. main towns and rivers. Siometimes the normal topographical details are also shown.

(e) **Rail / Road Maps.** These are intended only for use in connection with rail / road movements.

(f) **Photo Maps.** These are produced by making a mosaic of strips of vertical air photographs, so as to cover completely the area required to be shown.

(g) **Other Maps.**

(i) Geographical Maps showing the structure of the rock formation below the top soil.

(ii) Statistical maps showing information of such things as population, industries, mineral ores, crops etc.

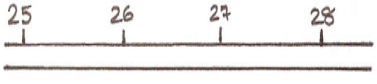
(iii) Charts – showing depth of water round the coast and in river estuaries.

(iv) Meteorological maps showing information regarding winds, atmospheric pressures and so on.

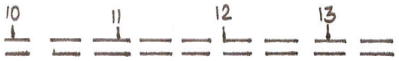
PART II : CONVENTIONAL SIGNS

Conventional Signs

7 Conventional signs are symbols used to represent certain artificial or natural features/objects on the map. They are seldom drawn to scale. Some common types of conventional signs are listed at Fig-1.

(a) Roads-metalled with Km-stone. - 

(b) Roads-unmetalled with Km-stone. -



(c) Cart track, camel track, mule path. -

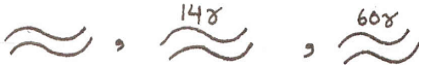
(d) Foot path, road in bed of stream, Level crossing.

(e) Bridges with piers and without, Causeway, Ford

(f) Stream-Approx water course, canal -

(g) River banks, shelving, steep 10 to 20 feet,

over 20 feet -



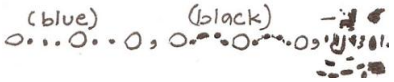
(h) River beds-dry, with stream, with island and rocks -

(j) Tidal river-shoal-sub merged rocks -

(k) Wells-lined and unlined, spring,

tanks-perennial and dry -

(l) Kaeaz-in, flow and dry, swamp, Reeds. -

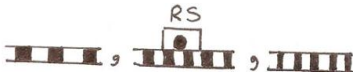


(m) Embankments, road or rail, tank cuttinng tunnel.-

(n) Broken ground, camping ground, vine on trellis. -

(o) Railways, broad guage, double,

signle (Station), under construction. -



(p) Railways other Guages, double,

Single (milestone) and under Construction.- 

(q) Light railway or tram way, Telegraph line. - 

(r) Circuit house, Dak, Travellers Bungalow, Rest House. - CH , DB , TB , RH

(s) Inspection bunglow, Police station, Buddhist Kyaung - IB (Canal) , PS , kg

(t) Post office, telegraph office, combined office. - PO , TO , PTO

(u) Forest-reserved, state and protected. - RP , SR , PF ,

(v) Spaced names, Administrative, Locality, tribal. - KIKRI . DUAR . HAGA

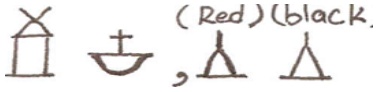
(w) Villages : open, walled, ruined, deserted antiquities.- 

(x) Huts, permanent and temporary, Fort, Tower chhatvi. - 

(y) Church, Mosque, Temple, pagoda, Idgah, tomb.- 

(Red) (black) (blue)

(z) Dams, masonary and earth work-wair (anicut in madras). × . (Red) (black)

(aa) Lighthouse-Lightship-Buoys Bamboo-plantation.- 

(Red) (black)

(ab) Grass high and low cane,Bamboo-plantation. - 

(ac) Palms, Areca, palmyra, other conifer,other trees, scrub.- 

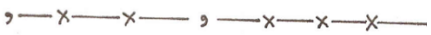
ad) Contours, Formlines, Rocky slopes. - 

(ae) Cliffs-sand features. - 

(af) Moraine, Glacier, Scree - 

(ag) Boundary demarcated; international. - 

(ah) Boundary demarcated; province or state.- 

(aj) Boundary undermarcated; International, province or state. - 

(ak) Boundary; dinstrict or Tribal. -

(al) Boundary; Sub Divisional, tahsil taluk or township forest. - 

(am) Boundary pillars, surveyed, not found. - 

(an) Graves oil wells, Mine-Battle field with year. - 

(ao) Heights traingulated, Bench Mark. ∆ - 200, BM200

-

LESSON PLAN : MR 2
SCALES AND GRID SYSTEMS

Period - Two

Type - Lecture

Code - MR 2

Term - I

Training Aids

1. Map Sheets,Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2. (a) Introduction and Aim - 05 Min

   (b) Definition, Methods of expressing a scale - 35 Min

   (c) Definition and methods of Grids Reference - 35 Min

   (d) Conclusion - 05 Min

AIM

3. The aim of this lecture is to introduce the JD/JW NCC Cadets to the method of learning scales and method of finding Grid Reference.

PREVIEW

4. The lecture will be conducted in the following parts:-

   (a) Part I - Definition and methods of expressing a scale

   (b) Part II - Definition and Methods of finding Grid Reference

PART I

Definition of Scale

6. Scale is the proportion which the distance between the two points on the map bears to the distance between two points on the ground. Everything on the map must be reduced and the extent to which the size is reduced constitutes the scale of the map. The essence of a map is

that it is a drawing to scale and it bears a definite ratio to the size of the actual country which it portrays.

Methods of Expressing a Scale

7. There are two methods of expressing a scale:-

(a) **In Words**. 1 inch to 1 mile, it means that 1 inch on the map represents 1 mile on the ground.

(b) **As a Representative Fraction (RF).** This is the scale expressed in the form of a fraction, if the scale of a map is given as 1/100000 this means that one unit of the map represents 100000 of the same unit on the ground. It could mean that one centiméter on the map represents 100000cm on the ground.

Scale Line

8. Underneath the scale is the scale line which is drawn in two ways and by means of this, distance on the map can be measured. On the 2 cm to 1 km map one shows 1 km along its length, and is similarly divided intometres, with sub divisions in the left hand section.

9. The large divisions on these scale lines are called primaries and the small divisions on the left secondaries. An example of the scale line for a scale ”2 cm to 1 km” is at Fig-2 below.

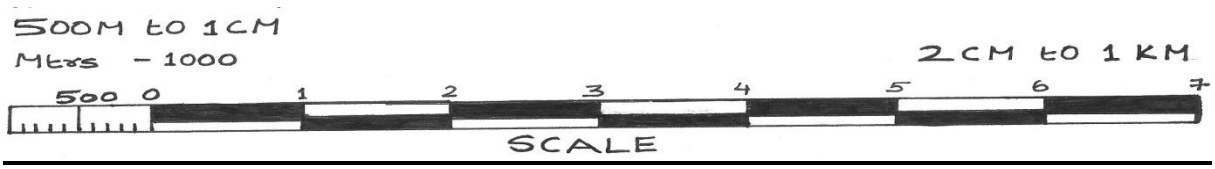


Fig-2

PART II

Definition of Grid

10. A map is covered with a network of purple lines, some running North and South and others West and East. These form a series of small squars all over the map.These lines are known as Grid Lines.

Purpose

11. The purpose of Grid Lines is to make possible giving and reading Grid References and to facilitate measurement of bearings.

Method of Grid Reference

12. In giving a Grid Reference there are four rules to remember:-

(a) A reference must always contain a even number of figures. Normally it contains six figures.

(b) Always count along the EASTING lines first from the WEST to EAST and then from SOUTH to NORTH along NORTHINGS.

(c) For six figure Grid Reference the third and the sixth figure represent the divisions of 1000 meters square to the nearest 10th part, so they have to be estimated and for these figures a slight latitude is allowed.

(d) If a general Grid Reference is to be given or there is only one such object in one square e.g. bridge, temple, road junction then its identity and four figure grid reference would suffice.

LESSON PLAN : MR 3
TOPOGRAPHICAL FORMS AND TECHNICAL TERMS

Period - Two

Type - Lecture

Code - MR 3

Term - I& II

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2. (a) Introduction - 05 Min

   (b) Topographical terms - 35 Min

   (c) Technical terms - 35 Min

   (d) Conclusion - 05 Min

INTRODUCTION

3. The following list of technical terms and topographical forms is by no means exhaustive and is meant to include only those which are more commonly used. Topographical forms is a name used to describe geographical features which occur on the ground.

AIM

4. The aim of this lecture is to introduce the JD/JW NCC Cadets to the various topographical forms and understanding technical terms in map reading.

PREVIEW

5. The lecture will be conducted in the following parts:-

   (a) Part I - Topographical terms

   (b) Part II - Technical terms

PART I

6. **Topographical Forms.**

(a)	Basin	-	An area of fairly level ground surrounded by hills or the area drained by a river and its distributaries.
(b)	Col or Saddle	-	A narrow ridge of high land joining up to higher hills.
(c)	Crest	-	The highest part of a hill or mountain range. It is that line on a range of hills or mountains from which the ground slopes down in opposite directions.
(d)	Dead Ground	-	Ground which by reason of undulations or hills is not visible to the observer.
(e)	Defile	-	Any feature whether natural or artificial which could cause a body of troops to contract its front. An example of a naturai defile is mountain pass while a bridge is an example of an artificial defile.
(f)	Escarpment	-	The steep hill side formed by a sudden drop in the general ground level usually from a plateau.
(g)	Knoll	-	A small isolated hill.
(h)	Plateau	-	A table land, an elevated region of considerable extent generally fairly level.
(j)	Ravine	-	A long deep valley closed at one end separating two spurs.
(k)	Ridge	-	The line along a hill or range of hills or mountains from which water flows in opposite directions.
(l)	Spur	-	A piece of high ground jutting out from a range of hills into lower ground.
(m)	Watershed	-	The line separating the water flowing into two different river

systems, the edge of a river basin.

PART II

7. **Technical Terms.**

(a)	Bearing	-	The angle formed by a line joining two points and the North and South line. Bearings are always measured clockwise.
(b)	Bench Mark	-	A permanent mark usually cut into a wall recording exact height for future reference, marked BM with the height on Ordnance Survey Maps.
(c)	Contours	-	A line drawn on the map joining up all points of equal height above sea level.
(d)	Detail	-	All the Topographical information on a map.
(e)	Gradient	-	The slope of a hill expressed as a fraction.
(f)	Grid Lines	-	Lines running parallel to and at right angles to a North and South line through approximately the centre of the area covered by the grid system.
(g)	Grid North	-	Except through the origin, grid lines do not lie true North and South or East and West, Grid North is the direction of the North South grid lines on a map.
(h)	Horizontal Equivalent (HE)	-	The distance measured on the map between adjacent contour lines. It varies according to the nature of the relief.
(i)	Magnetic Variaíion	-	The difference between True North & Magnetic North.
(k)	Setting	-	Placing a map so that North on the map points toward the North so that the objects on the map are placed in relationship to the same objects on the ground.
(1)	Spot Height	-	A point on a map whose height has been determined by Survey methods. This height is printed alongside the point.

(m)	Trig Point	-	A point fixed during the triangulation at the beginning of a survey, marked on Ordance Survey Maps by a small triangle with the height.
(n)	True North	-	The direction of the North Pole from the point.
(o)	Vertical Interval (VI)	-	Successive controur lines. The VI is generally the same for any given scale.

LESSON PLAN : MR 4
RELIEF, CONTOURS AND GRADIENTS

Period - Two/One

Type - Lecture/Practice

Code - MR 4

Term - I&II

Training Aids

1. Map Sheets,Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction	-	05 Min
	(b)	Relief, slopes	-	15 Min
	(c)	Countours and Gradients	-	15 Min
	(d)	Conclusion	-	05 Min
	(e)	Practice	-	40Min

AIM

3. The aim of this lecture is to introduce the Cadets to Relief ,slopes Countours and gradients in map reading.

PREVIEW

4. The lecture will be conducted in the following parts:-

(a) Part I - Relief and Slopes

(b) Part II - Countours and Gradients

PART I : RELIEF AND SLOPES

Relief

5. Relief is a general term applied to the shape of the ground in a vertical plane. Representation of a relief on a map means showing of heights and shape of the ground above

or below or datum which is normally sea level. Thus it shows the broad features and reletive heights of highlands and low lands which are potrayed on the map.

6. Relief is shown with means of hachures, shading, form lines, layer tints, contours, spot heights, trig heights, bench marks and relative heights.

Slopes

7. The closer together the contour lines are, the steeper is íhe slope of the hill which they show, where they are far apart, the slope down is gradual. Remembering this, it is possible to see at a glancé where the steeper hills are.

Type of Slopes

8. There are two type of slopes, convex and concave. A convex slope is the one which bulges outwards and concave slope is the one which curves inwards.

PART II :COUNTOURS AND GRADIENTS

Contours

9. A contour is an imaginary line following surface of the ground at a certain level. If you walk around a hill at a certain level, going nither uphill nor down, you will be following the countour for that level.

10. **Characteristics of Contours.** These are as under:-

(a) Contours accurately show the height, the shape and slope of the ground.

(b) Contours are shown generally in brown and rarely in black.

(c) Height is marked on every fifth contour on 1:50000 scale map.

(d) Contour lines vary in appearance.

(e) These line never touch or cross each other except at hanging cliff where they appear dotted.

Vertical Interval (VI)

11. The rise between successive contour lines is known as the verticai interval. On map scale 1 inch to 1 mile, the VI of each contour line is 50 feet while on the 1/4 inch to a mile it is 250 feet.

Horizontal Equivalent (HE)

12. The distance measured flat on the map between adjacent contour lines is horizontal equivalent (HE).

Gradient

13. The slope of the ground may be expressed as the angle the ground makes with the horizontal but more commonly it is expressed as a gradient – 1 in 15 or 1 in 20, which may be written as 1/15 or 1/20. A gradient of 1 in 15 means that in a horizontal distance of 15 m the ground rises or falls 1 metre so the gradient of the slope is the relation that its rise or fall bears to its length measured on the ground or in other words it is the ratio of the vertical interval to horizontal equivalent. It is independent of any unit of measurement. Simple Formula is VI/HE = Gradient.

14. The horizontal equivalent is obtained by measuring on the map and vertical interval by subtracting the contour heights.

15. You may often need to know just how steep a piece of ground is, whether a road is too steep for a certain type of vehicle to negotiate. The gradient can be worked out quickly from a contoured map.

16. **Measuring Gradient.** The rise or fall of a slope can be expressed in following two ways:-

(a) In a Angle or Degree of Slope.

(b) The tangent of the Angle or Gradient.

LESSON PLAN : MR 5
CARDINAL POINTS AND TYPES OF NORTH

Period - One

Type - Lecture/Practice

Code - MR-5

Term - I

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction	-	05 Min
	(b)	Cardinal Points and Types of North	-	15 Min
	(c)	Magnetic variation and Grid convergence	-	15 Min
	(d)	Conclusion	-	05 Min

AIM

3. The aim of this lecture is to introduce the Cadets to the basics of Map reading and conventional signs.

PREVIEW

4. The lecture will be conducted in the following parts:-

(a) Part I - Cardinal Points and Types of North

(b) Part II - Magnetic variation and Grid convergence

PART I:CARDINAL POINTS AND TYPES OF NORTH

Cardinal Points

6. North, South, East and West are known as the cardinal points.

7. If the North point is taken as zero degrees the angle which East forms with it is 90 degrees, or a right angle. The angle formed by the South point, being twice as large, is 180

degrees, and the West point forms an angle of 270 degrees. If the angle is measured all the way round the circle back again to North, it will be found to be 360 degrees.

8. In addition to four Cardinal Points and four intermidiate four major directions, there are eight minor directions. The names and degrees are as under:-

(a)	North North East	-	22 & ½ Degrees
(b)	East North East	-	67 & ½ Degrees
(c)	East South East	-	112 & ½ Degrees
(d)	South South East	-	157 & ½ Degrees
(e)	South South West	-	202 & ½ Degrees
(f)	West South West	-	247 & ½ Degrees
(g)	West North West	-	292 & ½ Degrees
(h)	North North West	-	337 & ½ Degrees

Types of North

9. There are three types of North :-

(a) **True North.** The direction of North pole from the observer.

(b) **Magnetic North**. It is the point to which a megnetic needle points, when freely suspended.

(c) **Grid North**. It is the direction to which the North South grid lines on a map point.

Angles Between North Points Angle between three Norths are as under:-

(a) **Magnetic Declination**. Angle between Magnetic North & True North, also known as Magnetic Variation.

(b) **Grid Convergence**. Angle between Grid North & True North.

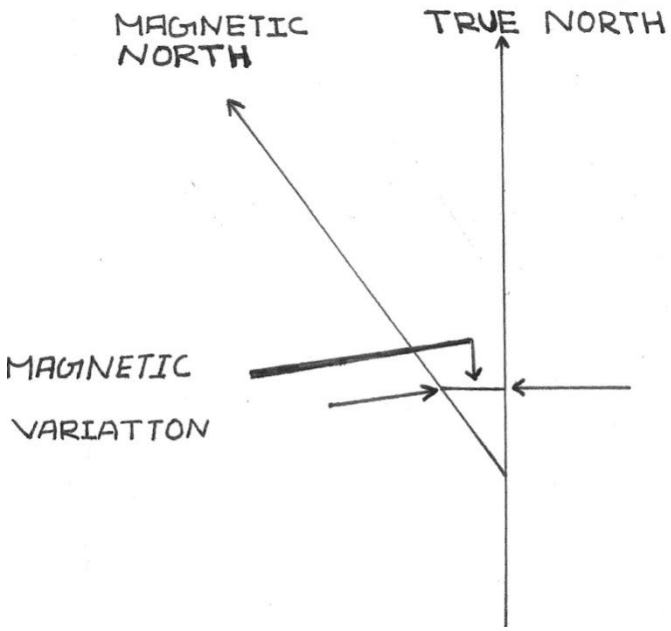
(c) **Grid Magnetic Angle.** Angle between Grid North & Magnetice North.

PART II : MAGNETIC VARIATION AND GRID CONVERGENCE

Magnetic Variation

10. **True North is Constant**. Magnetic North is the point to which the compass needle points. The needle does not point directly to True North, but a little West or East of True North.

The point towards which the needle swings is known as Magnetic North and the difference between True North and Magnetic North is called Magnetic Variation. The amount of the Magnetic Variation depends upon two factors, time and place as at Fig-3 below.



Magnetic Variation

11. **Time.** The Variation is not constant but is, gradually changing and even the change each year is not constant but the difference being negligible it is taken to be constant. On the top margin of a map will be found a statement giving the Magnetic Variation. To bring this up-to-date, the year of issue of the map must be noted and for every year that has passed since then the applicable change annually subtracted or added from the figure given as applicable.

12. **Place.** The amount of the Magnetic Variation also changes in different parts of the world and indeed in different parts of the country.

Grid Convergeace

13. The angular difference between Grid and True NORTH is called the Angle of Convergence or the Grid Convergence.

LESSON PLAN : MR 6
TYPES OF BEARING AND USE OF SERVICE PROTRACTOR

Period - Two/ Three

Type - Lecture/Practice

Code - MR 6

Term - I & II

Training Aids

1. Service Protractor, Compass, Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2. (a) Introduction and Aim - 05 Min

   (b) Bearing, conversion of bearing - 35 Min

   (c) Service Protractor and its uses - 35 Min

   (d) Conclusion - 05 Min

   (e) Practice - 40Min

AIM

3. The aim of this lecture is to introduce the JD/JW NCC Cadets to the process of understanding how to take bearing ,methods of conversion of bearing and service protractor and its uses.

PREVIEW

4. The lecture will be conducted in the following parts:-

   (a) Part I - Bearing and its conversion methods

   (b) Part II - Service protractor and its uses

PART I: BEARING AND ITS CONVERSION METHODS

Bearing

5.The clock wise angle formed by a straight line joining two points and direction of NORTH, is called the bearing between the two points. A bearing is always measured clockwise. They are three types as given below:-

(a)	Grid Bearing.	-	Measured on the map from the Grid North by the help of a protractor.
(b)	Magnetic Bearing	-	Measured from Magnetic North by the compass.
(c)	True Bearing	-	Calculated by finding out the relation of True NORTH and Grid NORTH or Magnetic NORTH.

Conversion of Bearings

6. The methods are explained in the succeeding paras.

To Convert a Magnetic Bearing to a True Bearing

7. Suppose the bearing of a certain point P is measured with a compass and is found to be 160^0 Degrees. To convert this Magnetic Bearing to a True Bearing, draw a diagram as given below:-

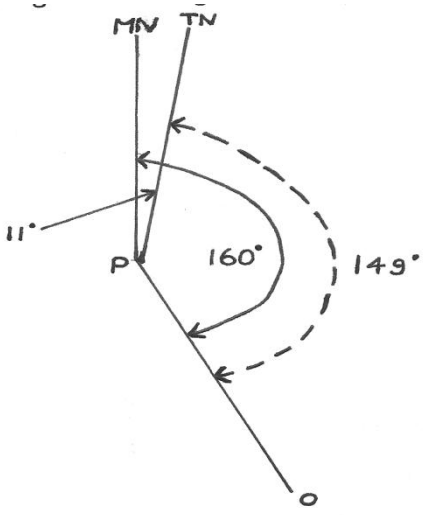


Fig-4

8. First draw a vertical line to represent Magnetic North (because it is a Magnetic Bearing which is being considered). Next draw aline PO at P an angle of 160 degrees. It is only a rough diagram, and the angle can be judged by eye. Thirdly, draw in the true North line approximately 11 degrees East of Magnetic North, with this diagram it becomes clear that True Bearing

(marked with a dotted line) is smaller by 11 degrees. Therefore, the True Bearing of O is 149 degrees.

To Convert Grid Bearing to Magnectic Bearing

9. Measuring with a protractor on the map, the bearing of a Wind Mill at Y from a Church at X is found to be 120 degrees. To convert this Grid Bearing to a Magnetic Bearing, draw a diagram as before this time starting with the Grid North line. The magnetic bearing is larger than the grid bearing by 11 degrees and is therefore, 131 degrees.

10. In converting bearing it is always wise to draw a diagram in order to see whether the magnetic variation should be added or sustracted and this is an easier way than remembering sets of rules.

Back Bearing

11. It is the bearing taken from the observation point back on to the original position. In practice it is not necessary to move to the observation point as it can be calculated. The rule is that if the bearing is large enough to have 180 degrees substracted from it this should be done. If it is smaller this figure should be added.

PART II: SERVICE PROTRACTOR

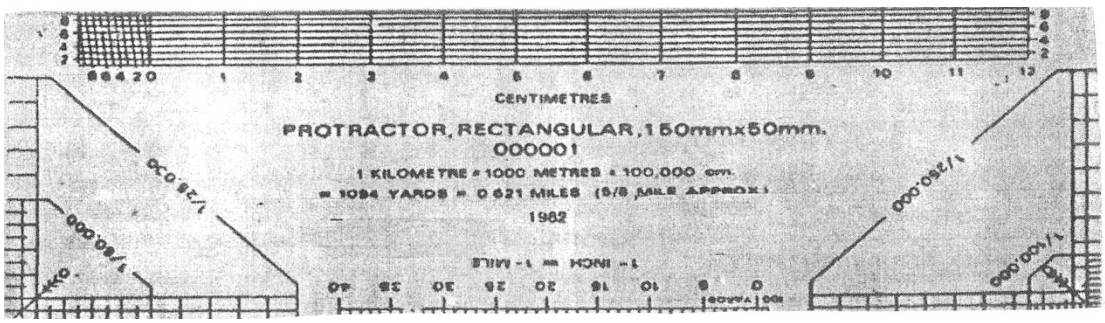
General

12. The service protractor "A" Mark IV is an instrument used for plotting and measuring bearing on the map. It is the essential link between the compass and the map, for it is by means of the protractor that magnetic bearings have been converted to grid bearing and transferred to the map.

Description

13. The protractor is made of cardboard or ivorine (flexible matrinal) and it measures 6 inches long and 2 inches wide.

14. The front face of the protractor has 360° of a circle marked around the edges of the three sides. The degrees are marked in a clockwise direction starting from the left hand bottom corner in two tiers, outer set of figures shows graduation from zero degrees to 180° and the inner set from 180° to 360°. The zero is denoted by a small arrow at the centre of the fourth side of the protactor.



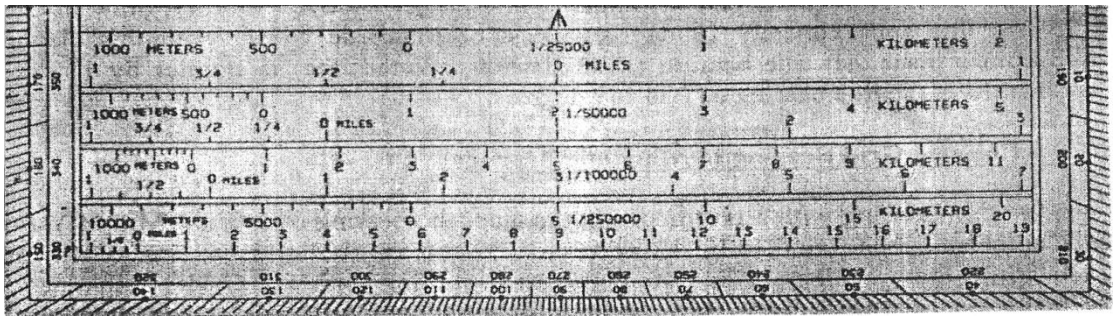


Fig-5

Scale of Protractors

15. The main purpose of the protractor is to measure angles and bearings as described in the preceeding paragraphs.

16. The protractor also shows on both its faces a number of the more common map scales. The respective scale lines are drawn out and divided into primary and secondary divisions in exactly the same way as at the bottom of the map. Six different scales are shown on the faces each with a variety of sub-divisions so that there is unlikely to be a map on which distance cannot be measured by means of the service protractor.

Measuring a Bearing

17. The angle can be measured by drawing a line from the graduation to the point zero on the protractor. The required angle will be the gap between this line and the line joining the zero (Fig - 6).

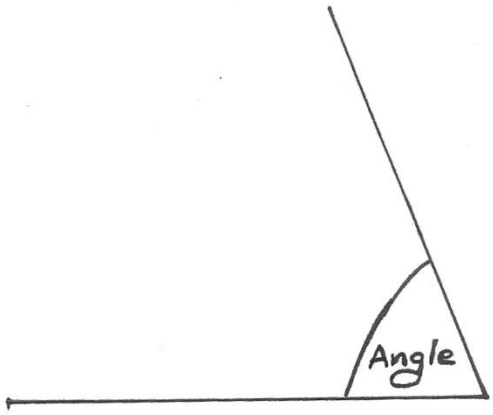


Fig-6

Uses of Protractor

18. The service protractor is an essential item of Map Reading. With its help one can:-

(a) Plot and measure bearing on paper or on a map. For bearing between 0 and 180 degrees their Zero edge must be on the LEFT and for 180 degrees -360 degrees it must be on the RIGHT.

(b) Measure distance in inches / cm correct upto l/100th.

(c) Measure distance in yards, metres or miles on a map by using the appropriate scale.

(d) For using the diagonal scale one must use an intermediate agent. Mark off the distance to be measured on the straight edge of a paper or by means of a divider and then put the paper or divider on the diagonal scale and measure.

LESSON PLAN : MR 7
PRISMATIC COMPASS AND ITS USE AND GPS

Period - Two

Type - Lecture/Practice

Code - MR-7

Term - I&II

Training Aids

1. Compass Prismatic, GPS, Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction	-	05 Min
	(b)	Types of compass, How to take a bearing	-	35 Min
	(c)	Compass errors and GPS	-	35 Min
	(d)	Conclusion	-	05 Min
	(e)	Practice	-	40Min

INTRODUCTION

3. The magnetic compass has been and is being used extensively in ships, aircraft and the various branches of the army to find and maintain direction. The prismatic compass is an accurate and reliable instrument of great value except during a "magnetic storm" or when subject to strong local magnetic field e.g. in polar regions. With the prismatic compass one can measure magnetic bearing on the ground

AIM

4. The aim of this lecture is to introduce the cadets to the basics of Compass Bearing, understanding compass errors and use of GPS.

PREVIEW

5. The lecture will be conducted in the following parts:-

(a) Part I - Type of Compasses and acquiring a bearing

(b) Part II - Compass errors and Introduction to GPS

PART I : TYPES OF COMPASS AND TAKING BEARING

Types

6 There are two types of prismatic compass, the dry and liquid filled. Liquid type is easier to use though it is less sensitive.

Description

7. The names of various parts are shown below:-

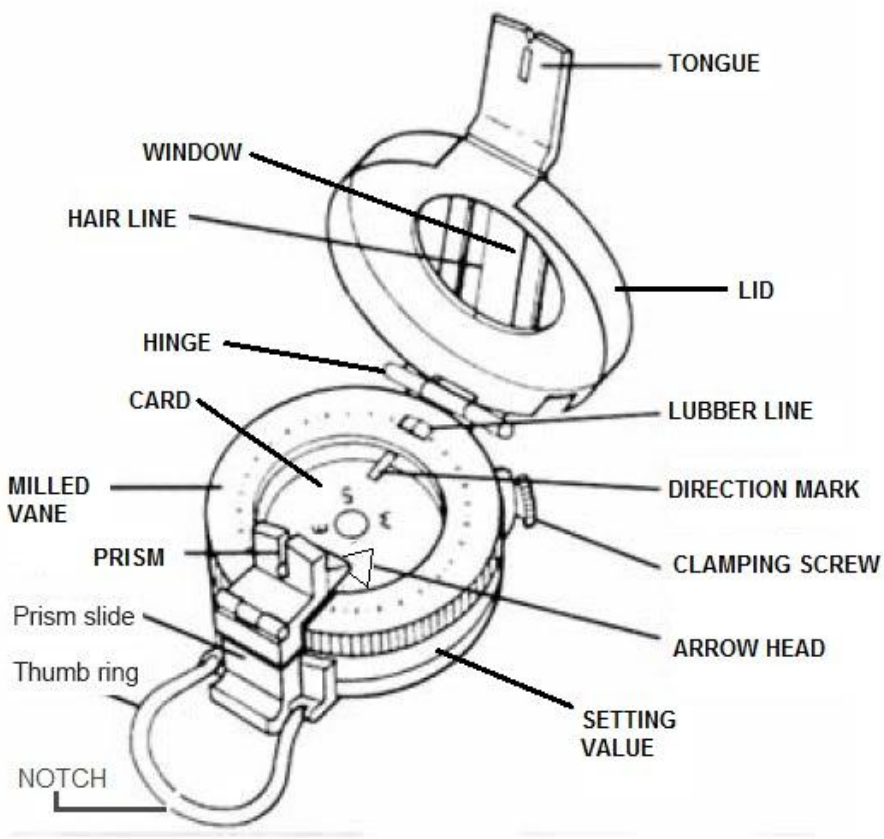


Fig-7

How to Take a Bearing

8. Open the lid so that it is roughly at right angle to the body of the compass.

9. Turn the prism casing over so that it lies flat on the face of the compass. Put your thumb through the ring and your forefinger underneath the compass and hold it so that it attains horizontal level.

10. Bring the prism upto the eye and you will see two things:-

(a) Above the prism, through the slot on the case, the hair line on the window.

(b) Through the prism itself, a set of figures.

11. The compass must be held so that the hair line is vertical and cuts the object on to which the bearing is being taken. The reading is determined by noting where the bottom of the hair line cuts the set of figures beneath it.

PART II :COMPASS ERRORS AND GPS

Compass Error

12. Sometimes due to the presence of imprurities in the material of which a compass is made or other reasons, the magnetic needle may not point toward the magnetic NORTH but a little to the EAST or WEST of it. This deviation of the magnetic needle in the compass from the magnetic NORTH is termed compass error.

(a) The compass error is said to be 2 degrees EAST if the compass needle points 2 degrees EAST of magnetic NORTH. The compass error is 5 degrees WEST if the compass needle points 5 degrees WEST of magnetic NORTH.

(b) Always draw a rough diagram showing the magnetic NORTH and the compass NORTH with the error, you will then see whether you have to subtract or add when converting compass bearing into magnetic bearing and vice versa.

Global Positioning System

13. Global Positioning System (GPS) refers to a system of satellites and receivers that allows people and devices to pin point their precise location on the earth. The normal GPS operational constellation consists of 24 satellites that orbit the earth in 12 hours. The satellite orbits repeat almost the same ground track each day. The orbit altitude is such that the satellites repeat the same track and configuration over any point. There are six orbital planes with four space vehicles in each, equally spaced 60 degree apart and inclined about 55 degree with respect to equatorial plane. The constellation provides the user with 5-8 space vehicles visible from any point on the earth. Devices that are equipped with GPS equipment receive transmission from at least a few of the satellites and are able to discern very precise positioning data.

14. The first GPS satellite was launched in 1974 and the 24th was launched in 1994. The new satellites are periodically launched to replace the ageing ones. GPS in funded by and controlled by the United States, Department of Defence.

15. The application of GPS is very broad and number of users is increasing dramatically. With improved technology, small portable GPS receivers have become very handy and accuracy is remarkable. These devices are used by fishermen and hikers to navigate. Today, many vehicles are equipped with GPS to help the drivers to navigate. In the Armed Forces, GPS has made navigation very easy. All aircraft, ships and specialist vehicles are equipped with GPS. In the Army, GPS is commonly used in battle fields and insurgency affected areas. It

assists troops to navigate through jungles, mountains and deserts. GPS is also used to guide missiles to pre specified targets.

LESSON PLAN : MR 8
SETTING OF A MAP, METHODS OF FINDING NORTH AND FINDING OWN POSITION

Period - Four

Type - Lecture/Practice

Code - MR 8

Term - II

Training Aids

1. Map sheets, Compass, Service Protractor, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction and Aim	-	05 Min
	(b)	Setting of Map and methods ,	-	35 Min
	(c)	Finding North and finding own position on map	-	35 Min
	(d)	Conclusion	-	05 Min
	(e)	Practice	-	1h 20 Min

AIM

3. The aim of this lecture is to introduce the JD/JW NCC Cadets to the method of setting of maps, and finding own position on map.

PREVIEW.

4. The lecture will be conducted in the following parts:-

(a) Part II - Map setting by various methods

(b) Part III - Finding North and own position on map

PART I: METHODS OF SETTING A MAP

Setting of Map

5. A map is said to be set or oriented when it is placed such that it correspcnds directly with the ground i.e. when true NORTH on the map points to true NORTH on theground. Obviously it

is easier to read a map when the objects on it are pointing in the same direction as the objects on the ground.

Methods of Setting a Map

6. There are two methods of setting a map - by compass and by objects on the ground.

7. **Setting by Compass** Draw a line showing magnetic NORTH from a point on a grid line. Open the compass and lay it flat on the map over the above drawn diagram, which will show the magnetic variation so that the hair line on the window lies along the magnetic NORTH line on the diagram. Then turn both the map and the compass till the needle points along the hair line. The map is now set, since the magnetic NORTH line on the map is pointing in the direction of magnetic NORTH as indicated by the compass needle.

8. (a) **Without a Compass when Own Position is Known.**

(i) Using a straight edge, for instance railway line.

(iі) Recognise one object on the ground and on the map and join own position to that object. Hold the map so that when looking along the line you see the object on the ground in the same straight line.

(b) **Without a Compass when Own Position is not Known.**

(i) **Parallel Method.** Select two landmarks such as road, railway line and so on which are easily recognizable on the map. If continuous landmarks are not visible, choose two objects and imagine a line joining them. With each landmark, make the corresponding landmark on the map parallel and the map will roughly be set.

(ii) **On/Near Line Joining Two Points**. Identify two nearby objects on the map and the ground. Stand on an imaginary line joining them and set the map.

PART II: FINDING NORTH AND OWN POSITION

Finding North

9. **Without Compass**. The position of NORTH can be discovered by one of the following methods:-

(a) **Watch Method**. Point the hour hand of your watch toward the sun. A line bisecting the angle between the hour hand and the direction of the 12 O'clock will then point due SOUTH. It must be ensured the the angle bisected must always be that which is less than 180 degrees. It is a rough method and applies only in the northern hemisphere.

(b) **Equal Altitude Method**

(i) Take a fairly large piece of paper or card board and spread it flat on the ground. In the centre fix a pencil or piece of wood perpendicular to the ground. It can be done with the help of a coin fixed at the base of pencil or wood with sealing wax or by directly pushing it in the ground.

(ii) The pencil will throw on the paper a shadow as shown by the dotted line AB of Fig below. Where the shadow ends make a mark B, and then from the base of the pencil draw a circle of radius AB,

(ii) Wait till after mid day until the sun has moved around sufficiently to throw another shadow as indicated by the dotted line AD i.e. of the same length as the original shadow AB.

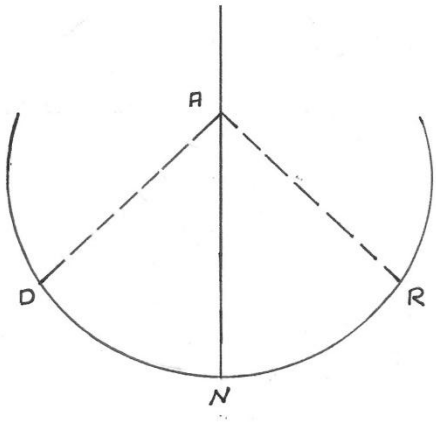


Fig-8

(iv) When this is so, draw a line AN bisecting the angle formed by the two shadow lines. This will point to TRUE NORTH.

(v) This is extremely accurate way of finding north but it is of no use on cloudy or dull day. It is also a very time consuming process as the work should start earlier than mid day.

(c) **By Stars**. In the Northern hemisphere, the Pole star indicates the position of True North to within 2 degree. It is a bright star and it can be found by protruding a line from Great Bear. The pole star will be found slightly off this line on the side remote from the remaining stars of the Great Bear.

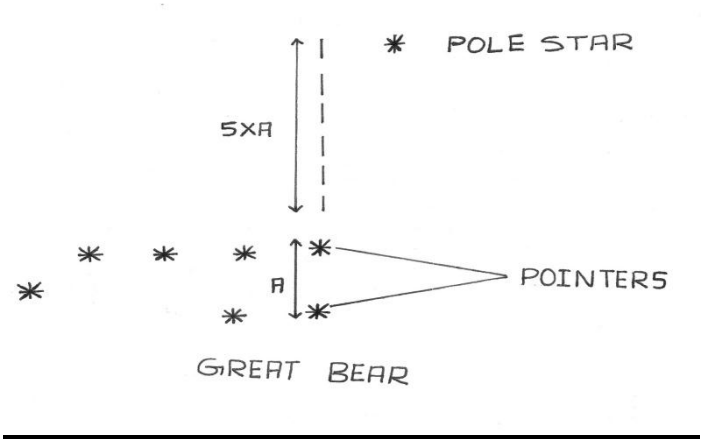


Fig-9

Finding own position on Map

10. **Methods of finding own position on Map**

(a) By resection method or Compass method

(b) By resection method without Compass

(c) By Inspection method.

11. **Resection with Compass method.**

(a) Recognise three prominent features (A, B, C) on map and on the ground as well. These three prominent features must not be more than 180 or less than 30 apart. They should be as far as possible and clearly visible.

(b) The bearing of these points be taken and converted into Grid bearings.

(c) Then, on the map the back bearings from these points must be plotted, and the point of intersection will be the required position.

(d) In order to do an accurate resection, three or more objects are necessary. But in that case if the three rays do not intersect at the same point, a triangle of error is obtained. The center of triangle is the point of your own position.

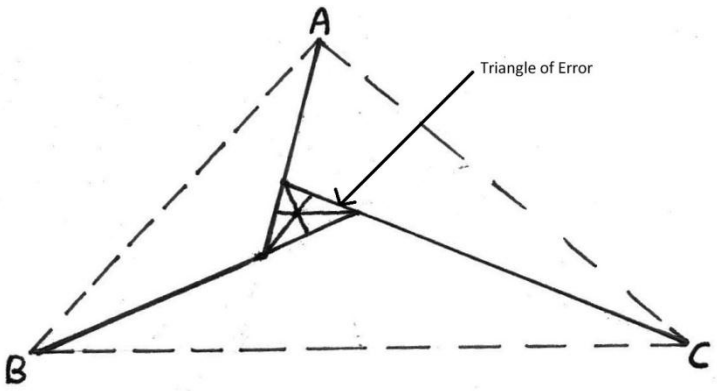


Fig-10

12. **Resection without Compass.** In case compass is not available, resections can still be carried out with the help of a piece of tracing paper. Identify three distant prominent objects on the ground and map. Take a piece of tracing paper and pin it on to a map board, make a point on it to represent position. Then draw a straight line along the straight edge of ruler thought the point and in the direction of one of the three distant prominent objects. Now without moving or disturbing the board, repeat the process for the other two objects. Remove the tracing paper from the board and apply it to the map so that the three rays pass through the corresponding distant objects marked on the map. The point, where three rays intersect each other will be the required position.

13. **By Inspection Method**. By inspections is meant a careful and detailed study of the ground and features both on the map and the ground and features on the map and on the ground. The method consists of:-

(a) Setting the map

(b) Recognition of general area of own position on the map

(c) A close study of the ground details

LESSON PLAN : MR-9
MAP TO GROUND AND GROUND TO MAP

Period - Three

Type - Lecture/Practice

Code - MR-9

Term - I & II

Training Aids

1. Map Sheets, Compass, Service protractor, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction	-	05 Min
	(b)	Map to Ground	-	35 Min
	(c)	Ground to Map	-	35 Min
	(d)	Conclusion	-	05 Min
	(e)	Practice	-	40 Min

AIM

3. The aim of this lecture is to introduce the Cadets to the basics of finding objects from Map to ground and ground to map.

PREVIEW

4. The lecture will be conducted in the following parts:-

(a) Part I - Map to ground

(b) Part II - Ground to map

PART I: MAP TO GROUND

Introduction

5. To find out the details of map on ground is known as map to ground. Following methods are used to identify objects from map to ground:-

(a) **Bearing and Distance Method.** With the help of bearing and distance, find out own position. Find out the distance of the object to be identified on ground with the help of a scale on the map. Using service protractor, find out the bearing of the object and convert it into magnetic bearing. Set the magnetic bearing on compass and look for the object in the given bearing. Estimating the distance on ground the object will be identified.

(b) **Direction and Distance Method.** Draw a line on the map between own position and object to be identified. Calculate its distance and using any of the following methods find the direction cf the object:-

(i) With the help of a sight rule find the ground direction of the object.

(ii) With the help of two points on the map estimate the ground direction.

(iii) Place a foot ruler /pencil at own position and align it with line of the map.

(iv) Place a pin each at own position and at the object on the map. Align both pins and find general direction.

(c) **By Estimation Method**. In this method measuring bearing, distance and direction, object is identified with the help of other details in the proximity of the object.

PART II: GROUND TO MAP

6. To find out an object indicated on ground on the map is called ground to map. Method used to identify objects from ground to map are discussed in succeeding paras.

7. **Simple Method**

(a) **Using Bearing.** Find out the distance and the magnetic bearing of the object. Translate magnetic bearing to grid bearing. Set the map and find own position. From own position draw a line at the given grid bearing. Measure distance with service protractor and mark the given distance on the line. The object will be in the proximlty of the given mark.

(b) **Intersection Method.** To find out the objects which are at a larger distance or in hilly terrain, intersection method is used. In this method help of minimum two prominent objects are taken which can be easily identified on the ground. Lines are drawn from the prominent objects to the object to be identified on map. This method is used when we cannot estimate exact distance. Intersection is done in two ways:-

(i) **By Compass Bearing** . Take the bearing of the object from two known prominent objects. Draw the lines on the map. The object will be in the proximityofthe intersection of the two lines. Magnetic bearing is found by two methods:-

(aa) **By Compass**. Take the forward bearing from known object.

(ab) **By Back Bearing.** In war, in case we intercept the enemy's transmission, with the help of the fall of the shot we can find out the location by working out back bearing.

(c) **By Direction Method**. In this method set the map and mark own position. With the help of any of the following methods find the direction of object on the map. Draw a line from own position in that direction. Put a mark on the line at the estimated distance of the object. The object will be in the proximity of the marked point:

(i) Place a foot ruler /pencil at own position and align it in the direction of the object.

(ii) Place a pin at own position on the map. Place the second pin in the direction of the object.

(iii) With the help of details around the object, find direction and mark the object on the map.

(ív) With the help of sight rule find exact direction of the object.

(d) **By Estimation Method.** By knowing the bearing and distance of the object on ground it can be identified on map by estimation.

LESSON PLAN : MR 10
POINT TO POINT MARCH

Period - Five

Type - Lecture/Practice

Code - MR-10

Term - II

Training Aids

1. Compass, Binocular, Service protractor, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction	-	05 Min
	(b)	Navigation during day	-	35 Min
	(c)	Navigation during night and night march chart	-	35 Min
	(d)	Conclusion	-	05 Min
	(e)	Practice	-	5h30Min

AIM

3. The aim of this lecture is to introduce the Cadets to the basics of Navigation during day and night and preparation of night march chart

. **PREVIEW**

4. The lecture/practice will be conducted in the following parts:-

   (a) Part I - Navigation during day

   (b) Part II- Night navigation and preparation of Night march chart

PART I: NAVIGATION DURING DAY

Day Time

5. **Methods Used During Day March.**

(a) **With Map Only**. In this method set the map and find your own position. Then, find out the position of the object. Note important landmarks in the vicinity of the object. Also find out the distance of the object. Finally find out the best route to reach the object. While marching, keep comparing the major landmarks enroute. Distance can be measured with the help of steps. 100 metre corresponds to 120 steps approximately. On reaching the object, confirm its correctness with help of other details in the proximity.

(b) **Marching without Map.** There are two methods of marching without map:-

(i) **With Compass.**

(aa) **First Method**. If youknow the bearing and distance of the object, take a compass and select two important landmarks in one íine where you can march easiiy. If there is difficulty in selecting landmarks at a large distance due to forest cover or undulating land, then closer landmarks can be selected. This could be repeated till you reach the object. If there is a major obsíacle üke river or nála which require deviation from the given bearing, one must come to the same line after crossing the obstacle and move on initial bearing.

(ab) **Second Method**. This method is used when bearing and distance of important landmarks enroute are given. Set the bearing of the first landmark from start point and repeaí this after reaching every intermediate landmark till you reach the object. In this method one is more confident while marching.

(ii) **Without Compass**. In this method you are required to march based on your memory power. Points to be kept in mind are:-

(aa) Before marching, recognize the object carefully and take note of other landmarks in the proximity.

(ab) Choose best route to the object and convert distance into steps/paces.

(ac) Take note of all the intermediate landmarks and their distances.

(ad) Enroute, ensure you are marching correctly.

(ae) Be careful while measuring distance in steps.

(af) If you deviate while crossing an obstacle, choose a mark across the obstacle. After crossing the obstacle come in line of the mark and recommence marching.

(ag) If you reach a wrong place, come back to the start point.

PART II : NAVIGATION DURING NIGHT AND NIGHT MARCH CHART

Night Time

6. When a navigation party moves at night with the help of compass and night march chart, this is called night march.

(a) **During Moonlit Night**. If you have a compass, you can select two important land marks on the given bearing in a line and march on the same bearing and line. Repeat this tiíl you reach the object.

(b) **Starlit Night**. Select a prominent star at 30 degreeon me horizon on the given bearing. Select a landmark in line of the star. March in line of the star and the land mark for approximately 15 minutes. Then select another star in the same bearing and repeat till you reach the object.

(c) **Cloudy Night**. Make a person march on the given bearing to a distance where he can be seen. Then íhe person holding compass marches, measuring the distance. First person is made to march again in the given bearing aní íhe process is repeated till he reaches the object.

7. **Items Required By Navigation Party**

(a) Set compass as per bounds.
(b) Luminous stick.
(c) White cloth.
(d) Marching chart.
(e) White Iime/ chaik.
(f) Stone pebbles for measuring steps.
(g) Frosted torch.

8. **Composition of Navigation Party**

(a) **Guide.** He carries a luminous stick and a compass set ío a given bearing.

(b) **Assistant Guide.** He has a white piece of cloth at his back for Identification and a stick to measure depth of nala / pits.

(c) **Recorder.** He carries additional compass already set on given bearing, night march chart and stone pebbles. He measures the distance.

(d) **Scouts**. Number of scouts could be from 2 to 4 depending upon the route and tasks.

9. **Night MarchParty**

(a) **Assistant Guide.** He moves in front between left and right scouts. He walks for 20 steps and stops. Guide moves up to him and then indicates him to march ahead. Following actions will be taken while crossing an obstacle.

(i) Assistant guide and scouts will negotiate the obstacle from left / right. Guide and balance party will keep waiting. After crossing the obstacle assistant guide and scouts wiil come in the line of march.

(ii) Then guide and balance party will cross the obstacle and move behind assistant guide.

(b) **Guide.** Guide marches behind assistant guide so that required instractions can be given to him. He also carries a compass with set bearing so that he can correct the line of march of assistant guide.

(c) **Recorder.** Recorder marches behind the guide and measures the distance by steps / measuring tape.

10. **Points to be kept in-Mind**

(a) While marching do not cough, talk or make any noise.

(b) While marching keep inter person distance in mind.

(c) Party must ensure safety and security.

(d) Smoking / using any kind of light is strictly prohibited.

(e) To read night march chart use frosted torch.

NIGHT MARCH CHART

(Object)	Distance	Degree
Temple 		
	450 M	
Well 		**50^{o}**
	200 M	
Bridge 		**40^{o}**
	350 M	
Track Junction 		**20^{o}**

	300 M	
Start point(Survey tree) 		**70^{o}**

Fig-11

LESSON PLAN :FC & BC 1
INTRODUCTION TO FIELD CRAFT AND BATTLE CRAFT

Period - One

Type - Lecture

Code - FC & BC 1

Term - I

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2. (a) Introduction and Aim - 05 Min

   (b) Field Craft - 15 Min

   (c) Battle Craft - 15 Min

INTRODUCTION

3. Field Craft is an important aspect of military training as it relates to the conduct of a soldier in face of the enemy. Field craft is an art of using the ground and the weapon available to the best of one's own advantages.

AIM

4. To acquaint the cadets in the art of Field craft and Battle craft.

PREVIEW

5. The lecture shall be conducted in the following parts: -

   (a) Part- I - Field Craft

   (b) Part -II - Battle Craft

PART I – FIELD CRAFT

6. Field Craft includes the following subjects:-

(a) Visual Training.

(b) Recognition and description of targets.

(c) Personal camouflage and concealment.

(d) Judging distance.

(e) Movement with and without arms.

(f) Fire discipline and control

PART II – BATTLE CRAFT

7. Battle drills are very useful in tackling minor tactical problems. They save time, ensure rapid action and avoid confusion. Knowledge of field signals and section and platoon formations, however, is essential in the execution of battle drill.

8. Battle Craft includes the following subjects:-

(a) Field Signals.

(b) Section Formations.

(c) Fire control orders.

(d) Fire and movements.

(e) Section battle drills.

9. Each of the above stated subjects have been discussed at length in subsequent lessons.

LESSON PLAN :FC & BC 2
JUDGING DISTANCE

Period - One

Type - Lecture/Practice

Code - FC & BC 2

Term - I & II

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction and Aim	-	05 Min
	(b)	Methods of Judging Distance	-	15 Min
	(c)	How to use the methods	-	15 Min
	(d)	Conclusion	-	05 Min

INTRODUCTION

3. Accurate fire with any weapon depends on the correct judging of distance. Although a cadet is not normally required to open fire at range over 100 yards, he must be able to judge distance up to about 1000 yards, so that he:-

(a) Knows when to open fire.

(b) Can indicate targets to supporting arms or to men in a sub-unit.

(c) Can pass back information accurately when acting as an observer.

4. An individual should be able to judge distance accurately with his eyes so that the individual: -

(a) Knows when to open fire.

(b) Knows which weapon to be used (51 mm mortar, rifle or carbine).

(c) Can indicate targets to other men in his section/direct the fire of sp weapons.

(d) Pass back accurate information when acting as an observer.

AIM

5. To teach the methods of Judging Distance.

PREVIEW

6. The lecture shall be conducted in the following parts: -

(a) Part- I - Methods of Judging Distance.

(b) Part -II - How to use the methods.

PART I - METHODS OF JUDGING DISTANCE

7. The following are the six methods of Judging Distance.

(a) Unit of measure.

(b) Appearance method.

(c) Section average.

(d) Key range.

(e) Halving.

(f) Bracketing.

PART II - HOW TO USE THESE METHODS

7. **Unit of Measure**. This method is also termed as the 100 yards method. The unit of measure chosen is normally 100 yards and therefore one should form a good idea of 100 yards distance on the ground. The length of a hockey field is the best yard stick for this purpose.

8. The distance of a given object will be a multiple of the imaginary unit of 100 yards, as placed between the observer and the object.

9. This method is not accurate above 100 yards and is of little use if there is dead ground between the observer and the object.

10. **Appearance Method .** The distance can be judged by noting the detailed appearance of man at various ranges. This is the best method under service conditions. The following is a guide to distance:-

(a) At 200 yards, all parts of the body are distinct.

(b) At 250 yards, blade of the foresight covers a kneeling man.

(c) At 300 yards the face becomes blurred.

(d) At 400 yards the body remains same in shape but face is difficult to distinguish. Blade of the foresight covers a standing man.

(e) At 500 yards body appears to taper slightly from the shoulder but movement of limbs can still be seen.

(f) At 600 yards head appears as a dot. Details are not visible and body tapers from shoulders downwards noticeably.

11. **Section Average.** Each man in the section is asked to judge the distance of a given object. The average of the answers given by the whole section is then accepted as the distance. Here caution must be exercised in the estimation of a few who may foolishly over estimate the distance. This method may be resorted to under the following circumstances:-

(a) Ample time is available.

(b) Judging of distance is made difficult by mist or darkness.

(c) Judging of a long distance is involved e.g. beyond 400 yards.

12. **Key Range .** If the range of the certain object is known, distance to other objects can be found in relation to the known range. This method is called 'Key Range' method.

13. **Halving.** An object is selected half way between the observe and the target, the distance to the selected object is judged and doubled to get the distance to the target.

14. **Bracketing.** The observer works out the maximum and the minimum possible distance of the object and then accept the mean as the distance e.g. maximum possible distance 1000 yards, minimum possible distance 500 yards therefore estimated range is 750 yards. The greater the range wider the bracket. In no case the bracket should be less than 300 yards.

Practical Hints

15. **During Night** Judging distance at night will depend upon the visibility. The only suitable method is the 'Key Range'. Therefore mark prominent objects and work out their distances while there is still day light.

16. **During Day**. Conditions which mislead the observer when judging distances are as follows:-

(a) Distance are over-estimated when:-

(i) Light is bad.

(ii) The sun is in the observer's eye.

(iii) The object is small in relation to its surroundings.

(iv) Looking through a valley of narrow lane e.g. street.

(v) Lying down.

(b) Distance are under- estimated when:-

(i) The light is bright or the sun is shining from behind the observer.

(ii) The object is large in relation to its surrounding.

(iii) There is some dead ground between observer and the object.

(iv) Looking up hill.

CONCLUSION

17. In order to bring down effective fire judging distance is extremely essential. It is also necessary for indication of landmarks. Hence all cadets should be able to judging distance accurately.

LESSON PLAN :FC & BC 3
DESCRIPTION OF GROUND

Period - One

Type - Lecture/Practice

Code - FC & BC 3

Term - I

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2 (a) Introduction and Aim - 03 Min

(b) Types of ground - 10 Min

(c) Procedure of description - 10 Min

(d) Indication of landmarks using GLD & boundaries– 15 Min

(d) Conclusion - 02 Min

INTRODUCTION

3. A quick, accurate & standard procedure is necessary to enable a commander to describe an area to his men and the men to understand it correctly.

AIM

4. The aim of this lecture is to enable students to study the ground understand various types of ground and understand the method of scanning & describing ground.

SCOPE

5. The lecture will be divided into the following parts :-

(a) Part I– Types of Ground.

(b) Part II– Procedure of description.

(c) Part III – Indication of landmarks using GLD & boundaries.

PART I : TYPES OF GROUND

6. **Types of Ground :**

(a) **Broken Ground**. It is uneven and is generally interspersed with nullahs, bumps and fields in the ground. It is suitable for move of infantry and hinders observation of activities.

(b) **Flat and Open Ground.** It is even ground with little cover e.g. bushes, hedges and similar foliage. It is not suitable for move of Infantry by day.

(c) **High Ground**. Ground far above the general level of the area e.g. hill. It facilitates domination of area around it by observation or fire or both.

(d) **Dead Ground**. Ground that is hidden from an observer's view. It cannot be covered by flat trajectory weapons.

Note :

(a) Though an open ground is easy to travel, it is dangerous to do so in the vicinity of the enemy. Whether moving or taking fire position in an open area one is vulnerable to enemy from view and fire.

(b) Broken ground when correctly used affords protection from flat trajectory weapons. It does not afford cover from air or protection from high trajectory weapons.

(c) Dead ground does not afford cover from high trajectory weapons.

PART II : PROCEDURE OF DESCRIPTION

7. **Procedure of Description**. The normal method of scanning and describing ground is by dividing it as follows:-

(a)	Fore Ground	Up to 300 yards
(b)	Middle Distance	From 300 yards to 500 yards
(c)	Distance	Beyond 500 yards

PART III : INDICATION OF LANDMARKS USING GENERAL LINE OF DIRECTION AND BOUNDARIES

8. For indication give the following:-

(a) **General Line of Direction.** Start by giving the general line of direction by pointing out a centrally located, if possible, prominent land mark, e.g. No 1 section 500 RED HOUSE,

(b) **Boundaries**. After giving general line of direction give LEFT and RIGHT boundaries of your area. Divide the ground into foreground, middle and distance. Having done so start from LEFT to RIGHT systematically and describe. In attack describe the ground nearest to you first i.e. foreground, then middle and then distance. In defence reverse the procedure.

9. **Sequence of description.** While describing the ground bounded by particular arc after giving the boundaries start from LEFT to RIGHT. If the ground all around is to be described start after general line of direction to the right and finish at general line of direction by completing the indication all around.

CONCLUSION

10. A cadet should have an eye for the ground. He should keep on observing and judging the ground even while advancing and section commander should keep on explaining continuously while on move.

LESSON PLAN :FC & BC 4
RECOGNITION, DESCRIPTION & INDICATION OF LANDMARKS AND TARGETS

Period - One

Type - Lecture/Practice

Code - FC & BC 4

Term - I/II

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.

(a)	Introduction and Aim	-	05 Min
(b)	Methods of indication of easy targets	-	35 Min
(c)	Methods of indication of difficult targets	-	35 Min
(d)	Conclusion	-	05 Min

INTRODUCTION

1. Landmarks and other objects on the ground on a battle field may be either indistinct due to climatic conditions or other reasons. There may be too many of the same type. Every effort should, therefore be made to indicate their location and extent carefully and accurately.

2. To ensure quick and accurate indication by commanders and recognition by individual soldiers a standard procedure has been laid down in the Army. Even the aids to be used for indicating difficult targets have been laid down.

AIM

3. To acquaint the cadets regarding recognition, description and indication of targets.

SCOPE

(a)	Part I	-	Definitions.
(b)	Part II	-	Methods of indication of easy targets.
(c)	Part III	-	Methods of indication of difficult targets.

PART I : DEFINITIONS

4. **Landmarks**. An object, which is prominent on the ground and which is used in verbal orders to explain the ground in front.

5. **Target**. It is an object having a tac significance which is indicated with a view to bring down fire on it.

6. **Reference Point**. A prominent and unmistakable object, with the help of which you can indicate other land marks or targets. A reference point should be specific.

PART II : METHODS OF INDICATION OF EASY TARGETS

7. **Easy Targets**. Can be indicated by the following methods:-

(a) **Indication by Description.** An obvious target can often be described directly. For example 'No. 1 Section BRIDGE' Here BRIDGE is so obvious that no body can make a mistake in recognizing it.

(b) **Indication by Direction or Range or Both.** In slightly less obvious cases other aids should be used e.g. direction or range or both. An example of each is given below:-

(i) Indication by Direction. No 1 Section BAEN BGHICHA.

(ii) Indication by Range. No 1 Section 600 BAGHICHA.

(iii) Direction and Range. When indicting a landmark indicate direction first and than range e.g. BAEN-600, BAGHICHA.

PART III : METHODS OF INDICATION OF DIFFICULT TARGETS

8. The target which can not be indicated by the methods given above are termed difficult targets. The methods to indicate these are explained in succeeding paragraphs.

The Direction Method

9. This is used to indicate the following:-

(a) The general line of direction, or

(b) A known reference point, or

(c) Another landmark.

10. Unless otherwise stated all direction are taken to be with reference to the general line of direction. The following direction will be used:-

Direction	**Measuring**
Slight Left/Right	Approximately 10 degrees
Quarter Left/Right	Approximately 22 ½ degrees
Half Left/Right	Approximately 45 degrees
Three Quarter Left/Right	Approximately 67 ½ degrees
Full Left/Right	Approximately 90 degrees

CONCLUSION

11. To achieve success in war it is of utmost importance that the target is understood and recognized by the troops. It is of no use reaching/capturing a target not intended to as this may jeopardize the plans.

LESSON PLAN :FC & BC 5
OBSERVATION, CAMOUFLAGE AND CONCEALMENT

Period - Two

Type - Lecture/Practice

Code - FC & BC 5

Term - I/II

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction and Aim	-	03 Min
	(b)	Why things are seen	-	05 Min
	(c)	Demo of personal camouflage	-	35 Min
	(d)	Types of cover and correct use of cover	-	35 Min
	(e)	Conclusion	-	02 Min

INTRODUCTION

3. To observe is to penetrate the concealment of the enemy's observation. Visual training is training in observation and concealment which are two aspects of the same subject. The term camouflage comes from French word 'Camoufler' meaning 'to blind or veil'. Camouflage, also called protective concealment, means to disguise an object in plain sight in order to conceal it from something or someone. In the late nineteenth century an American artist named Abbot Thayer made an important observation about animals in nature that became a useful tool in developing modern camouflage. After studying wildlife, Thayer noticed that colouring of many animals graduated from dark, on their backs to almost white on their bellies. This is an important property that is very useful in modern camouflage. This graduation from dark to light breaks up the surface of an object and makes it harder to notice. The object loses its three dimensional qualities and appears flat. Camouflage, as we know it today, was born in 1915 when the French Army created a new unit called the Camouflage Division. Artists were among the first people the French Army called to development camouflage for use during WW I. Thereafter a lot of emphasis has been laid on camouflage. Camouflage is defined as action of misleading en by concealing or misrepresenting the identity of own troops, equipment, installations and activities. Good camouflage is possible only if you have a fair idea of skillful use of cover and you remember the principles as to why things are seen.

AIM

4. The aim of this lecture is :-

(a) To teach the principles as to why things are seen.

(b) To teach the cadets importance of ground observation.

(c) To teach personal camouflage.

(d) To teach the cadets the types of cover and to make correct use of cover.

PREVIEW

5. The demo shall be conducted in four parts as follows :-

(a) Part I - Why things are seen.

(b) Part II - Demo of personal camouflage.

(c) Part III - Types of cover and correct use of cover.

PART - I : WHY THINGS ARE SEEN?

6. Before we study these factors I shall indicate the landmarks which shall be used during the course of this lecture.

7. Various factors responsible for things to be seen are as follows :-

(a) **Shape.** Many objects are instantly recognised by reason of their distinctive shape, particularly if they are in contrast with their surroundings. The round outline of helmet, square shape of haversack and the well defined and familiar outline of rifle can be spotted instantaneously because of their contrast with the surroundings. Therefore to camouflage an object, its shape and outline has to be broken. (Camouflage and uncamouflaged helmets and haversacks to be placed at a distance of 50 to 100m and the cadets asked to spot them).

(b) **Shine.** Any object which reflects lt gives away its position. The objects on a soldier which can cause shine can be metal on his equipment and belt, rifle brl and body, magazine, map case, spectacles, watch, ring, binocular lenses etc. Infact all metal parts on personal weapon are susceptible to shine. Thus it is imperative to cover all shining surfaces like watches and map cases. Metal on the equipment should be blackened with paint or tape. All shining surfaces of rifle should be covered with coal or garnish. While using binocular, care should be taken to shade them in case there is any chance of their reflecting sunlight and when not in use they should be kept in cover.

(c) **Shadow.** Shadow cast by an object in bright sun or moonlit night will reveal its position. A soldier may otherwise be well camouflage but his dark shadow will attract attn. So whenever possible a soldier must remain in shade. This not only affords him cover but also avoids casting a shadow which is distinctive and conspicuous.

(d) **Silhouette**. Objects silhouetted against a contrasting background are easily seen. Any smooth and flat background such as water, sky is a dangerous background.

(e) **Surface.** If colour and texture of surface of an object or human contrast with its surroundings, that object will be conspicuous. Therefore surface resemblance to environment is one of the most important facets of camouflage. Hence troops op above snowline are dressed in white but disruptive in semi deserts, plains and jungle terrain. A fair skinned person should blacken all areas of exposed skin to avoid contrast between his skin and his dress.

(f) **Spacing**. Objects spaced regularly tend to draw attn even if they are well camouflaged. Eg, you would have noticed wire fencing covered by vegetation all along. Hence, the pillars of the fence which are regularly spaced are camouflaged by dense vegetation else en would be able to make out the loc of the pillars and therefore the fence.

(g) **Smoke.** Smoke has a quality of pillaring up in fair weather and hence gets noticed from a long dist. Due to this reason smoke is used to indicate targets to ac. Pillaring can be avoided by disintegrating smoke pillar at the very place where it is produced.

(h) **Sound.** Even if a man is otherwise not visible, noise will draw attn to the right spot facilitating his detection.

(j) **Movement.** Nothing catches the eye quicker than a sudden or violent movement. A man however well he may be camouflaged gives away his position by movement.

8. Cadets, you have seen as to why things are visible during day or in clear moonlit night. Now let us see why things are visible at night. In modern warfare night ops and movement have gained a lot of important. There are two factors which need to be looked into:-

(a) **Sound.** Sound travels great dist at night especially on a still night. Disturbing foliage in a jungle terrain, crackling of twigs under your feet can give away your position.

(b) **Light.** Light can be seen from a great dist. A match stick or a cigarette which has been lit is visible from a great dist.

PART II - PERSONAL CAMOUFLAGE

9. You have been taught the factors responsible for things to be seen in Part I. Keeping these factors in mind let us see how personal camouflage is done which include camouflage of equipment worn or carried by a soldier.

(a) **Use of Disruptive Pattern Clothing and Local Vegetation.** Disruptive pattern clothing is worn to remove contrast with the surroundings and to break outline of a body. Local vegetation is used to break the outline of the body and merge with the surroundings. Vegetation used should be changed regularly before it wilts and changes appearance. No outlandish vegetation should be used. Different types of clothing should be used for different kinds of terrain.

(b) **Camouflage of Face.** Surface and texture of disruptive clothing is different from the uncovered parts of body. To remove this contrast, blanko is applied over the naked parts of body eg forearms, face and neck. Mud can also be used in case blanko is unavailable.

(c) **Camouflage of Equipment.** Camouflaging a body will be of no use unless equipment worn on the body or carried by a person is also camouflaged. Equipment is camouflaged as follows :-

(i) **Helmet.** Helmet is made of metal or fibre glass and is painted with OG colour. The difference between surface and texture of helmet with surroundings is removed as follows :-

(aa) **Use of Hessian Cloth.** Helmets with smooth surface are covered with hessian cloth. The cloth eliminates shine from the helmet.

(ab) **Use of Camouflage Net.** Camouflage net is put on helmet. Branches of local vegetation are stuck in the net. Pieces of garnish may be tied to the net. This helps to break the outline, reduce shine and contrast with surroundings. Camouflage can also be used on Cap FS in a similar manner.

(ii) **Camouflage of Packs**. Packs have square outline. This outline is broken by tying thin ropes on the packs and branches of local vegetation are stuck in the ropes. It must be ensured that you are able to open or close the packs w/o disturbing the vegetation. (instructor to show camouflaged packs).

(iii) **Camouflage of Rifle.** Metal parts of rifles are phosphated and hence shine is reduced. Garnish of suitable colour should be wrapped over wooden parts/ plastic parts to contrast with surroundings. It must be ensured that moving parts are not hindered by the garnish and the user should be able to take aim and use his weapon freely w/o any obstruction.

(iv) **Camouflage of LMG**. The most important weapon in a sec is LMG. Wooden/plastic parts of the LMG should be covered by garnish. However it should be ensured that the moving parts are not hindered and that the barrel can be changed smoothly. In def, an LMG trench is camouflage by use of a net. We shall show you a camouflaged LMG trench at the end of this cl. You shall also learn how to camouflage other weapons subsequently during the course of your training here.

(v) **Camouflage of Equipment.** Equipment like binocular, map case, Radio Set should also be camouflaged by breaking its outline and preventing shine or reflection due to sun or artificial light. Vehicles are also camouflaged similarly.

10. Cadets, you have three examples of camouflaged cadets standing in front of you. Keeping in mind what you have just learnt in Part I and Part II, we will discuss the efficacy of these three examples of camouflage.

(a) **Shape.** Cadet Pandey and Cadet Trivedi have not successfully broken the shape of their helmets and equipment, whereas Cadet Kumar has done so. He has also done the same for his rifle which is important.

(b) **Shine.** Cadet Pandey and Cadet Trivedi have equipment, rifle, watches which are all susceptible to causing reflection while Cadet Kumar has blackened all metal parts, covered his watch, binocular and has also ensured that his map case is carried the correct way.

(c) **Surface.** Colour and texture of Cadet Pandey makes him stand out straight away. In case of Cadet Trivedi, his skin is still contrasting with his comb dress. Cadet Kumar has darkened all exposed areas of his skin with OG Blanko.

PART III - TYPES OF COVER AND CORRECT USE OF COVER

11. There are two types of cover. They are :-

(a) Cover from view.

(b) Cover from fire.

12. **Cover from View**. In this type of cover, a person is concealed only from view or from being seen and not from fire. If you look to your front you can see a soldier taking position behind a bush. The bush hides him from view but will not protect him from fire. He is therefore covered only from view.

13. **Cover from Fire.** This implies that the concealed person is protected both from view and fire of weapon. Take your attn to the White Stone towards your front. The construction in front protects the occupants both from view as well as from fire. Therefore the soldiers are covered from fire.

14. A soldier may be perfect in his personal camouflage but he cannot fully deceive the en unless he knows the correct use of cover/ground. Now we shall study the guidelines for correct use of cover.

15. **Look Through or Around Cover**. Whenever possible look through or around the cover but not over it. It is like somebody observing through a slit with his eye close to the slit. Such an observer can observe everything without being observe. If it is not possible to look through the cover then look around the cover.

16. **Avoid Breaking a Straight Line**. Any permanent fixture if disturbed will attract attention.

17. Skyline/light coloured background is the worst background as the object against it will be found out because of contrasting background and shape. You must always avoid skyline for observation and movement.

18. When firing from inside a bldg, keep well back making use of shadow. The darkness provided by the shadow will blend you with the shadow.

19. A rough, dark and irregular background which matches your clothing provides considerable cover. For movement use clothes which blends with terrain and the surroundings as this would provide natural camouflage.

20. Isolated cover is dangerous. Eye catches isolated cover easily especially if there is any movement near it.

21. Cross gaps as a body of troops at irregular intervals and on the double. This will ensure that the movement is not easily detected. The en will not be able to detect the movement of next group.

22. By now you would have realised the important of camouflage and correct use of cover. Cover is the gift which the ground gives you and you must use it to the best of your advantage.

CONCLUSION

23. To conclude, the importance of camouflage can be realized from the following:-

(a) In earlier days it was said "If it can be seen, it can be hit, if it can be hit it can be killed".

(b) But now in the modern warfare "If it can be seen it will be killed".

24. Therefore, Cadets, camouflage needs greater emphasis and the art of camouflage and concealment reduces the different varieties of soldiers into two main categories viz, "The good and the dead." Concealment is an aid to tactical deception and misinforms the enemy as to our intentions and strength.

LESSON PLAN :FC & BC 6
FIELD SIGNALS

Period - Two

Type - Lecture/Practice

Code - FC & BC 6

Term - II

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2. (a) Introduction and Aim - 05 Min

   (b) Demo and Practice - 70 Min

      (i) Signals with hand & weapons.

      (ii) Field Signals as means of giving orders.

      (iii) Methods to attract attn of troops.

      (iv) Other methods of inter communication.

      (v) Field signals by day.

      (vi) Field signals by night.

   (c) Conclusion - 05 Min

INTRODUCTION

3. Whenever an individual wants to draw attention or has to pass a message to someone who is away from him, he does so by raising his voice and calling out his name. In olden days, smoke and sound of drum beats were extensively used to pass messages from one village to another. Emperor Akbar had devised a way to know the information of his newly born child. He asked one of his ministers to construct high towers at a distance of one mile from each other. The drum beaters were made to stand on top of the towers and beat the drum in a systematic way. Once when he was at Allahabad, news of his new born son was conveyed to him within half an hour, at a dist of 500 miles. In the army too we use different methods to convey messages which may be used during movement or when static. Today, you will learn one of these methods ie Field Signals.

AIM

4. To acquaint the cadets with the Field Signals used in the Army.

PREVIEW

5. The lecture will be conducted in the following parts.

(a) Part I

(i) Signals with hand & weapons.

(ii) Field Signals as means of giving orders.

(iii) Methods to attract attn of troops.

(iv) Other methods of inter communication.

(v) Field signals by day.

(vi) Field signals by night.

PART I-SIGNALS WITH HAND

6.

(a)	Deploy	Right arm fully extended above head and waved from side to side, palm open.
(b)	Advance	Right arm swung from rear to front in 'under arm blowing' fashion.
(c)	Halt	Right arm raised to full extent above head.
(d)	Turn About	Right arm raised and bent above head.
(e)	Change direction	Right arm raised to front in line with shoulder. Body then turned in required direction.
(f)	Close	Right hand place on top of head, elbow to the right.
(g)	Quick Time	Right hand raised to line of shoulder, elbow close to the side.
(h)	Double March	Right fist clenched, moved up and down between thigh and shoulder several times.
(j)	Follow me	Right arm swung from rear to front above the shoulder, in 'over arm bowling' fashion.
(k)	Last order completed	Right hand to salute, then arm raised in air finger extended.

(l)	Last order Not understood	Both hands, cupped behind the ears.
(m)	Commander to close	Right arm to the side at 45 degrees to the body, firs clenched.
(n)	Enemy in sight specific numbers	Both arms waved on sides 'Bird fashion' followed by number, indicated by number of fingers held up.
(o)	Enemy Approaching	Both hands open, palm inwards at waist level, with inwards scooping motion.
(p)	Enemy position suspected	Both hands, first clenched, raised to shoulder level, followed by indication of direction.
(q)	Enemy LMG firing	Right hand thumb down signal.
(r)	Engage Target by Fire	Both hands clasped above the head (boxer fashion).
(s)	Attack	Punching motion with Right or Left hand according to direction of attack.
(t)	Closed to Rendezvous	Close sign followed by both hands clasped in front of body at waist level.
(u)	Infantry obstacle ahead	Both hands crossed in front of body at the waist, palm open downwards.

Signals With Weapons

7.	(a)	Enemy in Sight in small number	Rifle held above the head parallel to the ground, muzzle in the direction of the enemy.
	(b)	Enemy in Sight in large number	As per (a) above, but arm moved up and down several times.
	(c)	Advance	Both arms raised to form the letter 'U'.

Signals With Whistle

8.	(a)	Cautionary Blast	A short blast to draw attention to a signal or order about to be given.
	(b)	The Alarm Blast	A succession of alternate long and short whistle.
	(c)	Enemy Aircraft	A succession of short blasts.
	(d)	Enemy Aircraft departed	Two long blasts repeated at interval of five seconds.

9. **Field signals as means of giving orders.** Field signals are alternate means of giving orders and control troops when voice cont is not possible. Control over troops deployed could be exercised better by field signals than by voice control. There are various occasions when voice control is not possible. They are :-

(a) Battle Noises.

(b) Need for silence.

(c) Intervening distances are too large.

8. **Battle noises**. In war, enemy will be using his small arms & automatics, vehicles & tanks moving up & down, enemy arty firing all round and aircraft flying with high speed. This will always create so much noise that voice control may not always be possible.

9. **Need for silence**. There are certain operations which, by design are carried out in utmost silence, eg:-

(a) Ambush.

(b) Patrolling.

(c) Raid.

(d) Cordon.

10. **Intervening distances are too large.** There are certain deployments like defences in mountains or defences on a linear obstacle like Ditch cum Bund where the commander and troops are invariably beyond audible distance from each other. Under such circumstances we will have to resort to field signals for communication.

11. **Methods to attract attention of troops.** Before any field signal is executed, the commander has to attract the attention of troops. Methods generally used to attract attention of troops are :-

(a) **A short blast of the whistle**. On hearing the short blast of the whistle, every one looks at the Section Commander, observe the field signal being executed and then take appropriate action. It must be noted that use of whistle to attract attention is used mainly during training of recruits and young soldiers. Also use of whistle is not advisable when we are too close to the enemy.

(b) **A bird call**. Remember a bird call must never be used if it cannot sound realistic. One must also bear in mind that use only those bird calls which are existing in that area. (Bird calls by volunteer cadets).

(c) Whistle by mouth which is of lower frequency.

(d) Clicks by using tongue.

(e) Clicks by fingers. (These too to be attempted by volunteer cadets)

12. **Other methods of communication.** Besides field signals there are various other means of communication in the Army which can be used depending on their availability. The other methods of inter communication available to us are :-

(a) **Radio.** It is a very effective and dependable means of communication and very useful while on movement. Pre-fixed signals can be used in the form of pressing the presser switch. It is normally used between commanders or from higher HQ to lower HQ or vice versa. However it is susceptible to en interruption and jamming.

(b) **Dispatch Rider.** The dispatch rider may be either on a motor cycle or on a bicycle. They are used to carry highly classified messages like marked maps and sketches or orders.

(c) **Runners.** They can carry verbal/written messages. They are quickest over short distances but where visual inter communication is possible, keep use of runners to the barest minimum. The use of runners should also be avoided for the following reasons:-

(i) To avoid unnecessary casualties.

(ii) To avoid unnecessary movement.

(ii) To avoid unnecessary fatigue.

13. **Field Signals by Day**. Some of the visual signals used during the day are flags and mercury coated mirrors. They are very useful in hilly terrain. Flags are very effectively used by Navy on board a ship.

(a) Flags.

(b) Mercury coated mirrors.

(c) Smoke. We have the smoke ammunition with 51mm Mor, 84mm RL, 81mm Mor and some arty equipment. This could be used to give signals. One drawback is that similar colour combination may be used by the enemy. Even tracers or bursts of fire by automatic weapons could be used.

(d) Miscellaneous. Various signals can be improvised and pre-arranged. As a matter of interest I would like to mention here that terrorists are known to often make successful use of improvised signals. Some of the common signals used by Vietcong in Vietnam and by the terrorists in the North Eastern Part of our country are:-

(i) Clothes ostensibly hung out to dry.

(ii) Hurricane lantern, kept in the window.

(iii) Flashing of torch is used as morse code.

(iv) Applying various colours/signs on forehead and arms.

14. **Field Signals by Night.** Some of the field signals that can be used at night are :-

(a) Radio Set.

(b) Click by fingers.

(c) Clicks by using Tongue.

(d) Whistle by the Mouth.

(e) Use of line bedding.

(f) Mini Flare.

(g) Use of blacked out Torch.

(h) Firing of Weapon.

15. Remember to use the simplest method that will achieve your aim.

CONCLUSION

16. The fighting efficiency of a unit/sub unit depends on sound communication system which helps commanders at all levels to exercise command and control effectively. Every commander must influence the battle by his personal touch which is achieved by good signal communications. At section/platoon level, the commander directly influences the battle by the use of field signals. Victory in battle will come to that section/platoon whose men are conversant and proficient in the use of field signals. Field signals therefore, become a part of movement of a good section/platoon commander. Remember always use discretion while giving field signals. Do not resort to unnecessary movement and noise. Keep the age old maxim (If speech is silver, silence is gold) at the back of your mind.

LESSON PLAN :FC & BC 7
SECTION FORMATIONS

Period - Two

Type - Lecture/Practice

Code - FC & BC 7

Term - III

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction and Aim	-	05 Min
	(b)	Section formations	-	35 Min
	(c)	Practice	-	35 Min
	(d)	Conclusion	-	05 Min

INTRODUCTION

3. Various formations are used when contact with the enemy is imminent and the type of formation adopted is entirely dependent on the following four basic factors:-

(a) Degree of control required to be exercised by the Section Commander.

(b) Type of terrain.

(c) Necessity of bringing down maximum fire with minimum delay.

(d) Task.

4. The position of the various groups within the section, the distance between the individual, and the location of the commander varies with each formation.

5. You are familiar with these formations which are:-

(a) Single file.

(b) File.

(c) Arrow Head.

(d) Diamond.

(e) Spear Head.

(f) Extended Line.

AIM

6. The aim of this lecture is to acquaint cadets with the section formations

7. **Section Formations**

	Advantages	**Disadvantages**	**Terrain condition**
(a)	Single File.		
	(i) Better control and speed.	(i) Not good for producing effective fire	(i) While going on marches at night. to the front.
	(ii) Not vulnerable to enfilade fire.	(ii) Vulnerable to frontal fire.	(ii) Walking in close country such as thick jungles.
	(iii) Useful for certain types of cover such as hedge, rows, bridges, defile.	-	(iii)For negotiating obstacles like ditches, narrow defiles etc.
(b)	File.		
	(i) Same as single file but more compact	(i) Same as single file (ii) While mov along roads and wide nullas.	(i) While going on long route marches or when Enemy threat is not imminent.
(c)	Arrow Head.		
	(i) Good for pro-duction of effective fire.	(i) Vulnerable to enfilade fire.	(i) While moving in an open country.
	(ii) Facilitates - rapid deployment on any flank.	(ii) When enemy threat is imminent.	
	(d) Spear Head.		

(i) Good for providing volume of fire. used	(i) Command and cont when en threat is imminent	(i) This formation is is difficult.
(ii) Provides good depth.	-	(ii) For crossing open areas.
(iii) Fire Sp Gp protected and does not come under enemy fire immediately on contact.	-	-

(e) Diamond.

(i) Good for all round observation.	(i) Presents an easy target to frontal fire.	(i) While negotiating open areas.
(ii) Good for all round production of direction fire	(ii) Not very good for bringing of fire to is not clear	(ii)When enemy threat is imminent but the the front...
(iii) Good for command command and control. arrow head formation	(iii) Vulnerable and cont is easier than in	(iii)In this fmn prone to enfilade fire .

(f) Extended Line.

(i) Good for bringing down of effective fire to the front and for bayonet fighting.	(i) Cont difficult because of dispersion.	(i) For crossing gaps such as gaps in large hedge rows.
-	(ii) Vulnerable to enfilade fire.	(ii)During final assault.

8. It will be noted that the field signals generally adopted for the various formations are as follows:-

(a) Single File. Both arms stretched in the opposite direction in front and behind the body making a straight line at 45 degree angle.

(b) File. Both arms stretched down wards and behind body kept parallel to each other.

(c) Arrow Head. Both arms stretched little behind the body opening outwards at an angle of 45 degrees from shoulders.

(d) Spear Head. Arms raised upward with hands folded on top of the head.

(e) Diamond. One arm raised with thumbs up sig placed over the head.

(f) Extended Line. Both arms stretched outwards from the shoulders and kept parallel to ground.

Scouts

9. Now that you have seen section formation, a word about the scouts. Scouts are the eyes and ears of the section. Scouts always work in pairs. They work ahead of the leading section and advance from bound to bound. As scouts, one must be always alert. Apart from ensuring their own security, scouts must also ensure that the section does not walk blindly into an enemy ambush.

10. Some of the essential points which scouts must ensure are as follows :-

(a) Scouts should move skillfully making proper use of the ground and cover.

(b) In close country where the enemy threat is imminent, the scouts should employ fire and move tactics. The leading scout should choose bound under observation of the rear scouts and both keep visible contact with each other.

(c) Scouts should always be alert and observing all around. Their weapons should be carried cocked (With the safety catch applied) in ready position, the latter when contact with the enemy is imminent.

(d) Scouts keep in touch with each other and the sub unit they are protecting.

Drill when scouts come under Effective Fire

11. Once the scouts come under effective enemy fire they must:-

(a) Run zig-zag for some distance, go down to the ground and crawl to a fire position. While the Section Commander is coming up, scout should cover each other and move forward by fire and move to a better fire position. A fire position should provide observation of the enemy and enable effective fire to be brought down on the enemy.

(b) Once the section commander moves up, the scout should indicate the enemy position and its extent, if possible. In case the Section Commander is unable to come up to the scouts due to enemy effective fire, scouts would then have to pass this Infantry by using field signals.

(c) Once the Section Commander has taken over the situation, further action of the scouts will be ordered by the Section Commander.

CONCLUSION.

12. You have so far learnt the organisation of a section and the various formations adopted by a section in battle. Remember, a section is organised into the Rifle Group and Fire Support Group to facilitate fire and move, the basic of all tactics.

17. As for the section formations, each formation has its peculiar advantages and disadvantages. Remember, need for command and control and the necessity of developing the maximum fire quickly, will determine the formation you as a section commander must adopt.

LESSON PLAN :FC & BC 8
FIRE CONTROL ORDERS

Period - Two

Type - Lecture/Practice

Code - FC & BC 8

Term - III

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction and Aim	-	03 Min
	(b)	Importance of fire discipline and fire control orders	-	20 Min
	(c)	Important Terms, Points for section commander & Method of Giving the Fire Control Orders.	-	20 Min
	(d)	Sequence of fire control orders	-	25 Min
	(d)	Types of fire control orders	-	10 Min
	(f)	Conclusion	-	02 Min

INTRODUCTION

General

3. By opening of fire indiscriminately, too early or at too great a range, the defender's position will be disclosed prematurely which will mean wasting of ammunition without advantage. This means Section Commander should be able to control the fire of his section by exercising good fire discipline.

4. It is the duty of the commander to ensure that the enemy is engaged effectively by bringing down the correct volume of fire at the most effective range by using the most appropriate weapon(s). Also in the battle, all personnel of a section/platoon may not be able to observe the enemy and even if they can, they may either not open fire thinking that others would do so or all of them may open fire resulting in wastage of ammunition.

5. It is also the duty of a commander to assess the effect of fire on the en and then either stop the fire, or re-adjust it or add the fire of additional weapons to make it effective. Therefore the commander ensures effective of fire and expenditure of ammunition.

AIM

6. The aim of this lecture is to teach you the importance of fire discipline and giving of fire control orders.

SCOPE

7. The lecture will be covered in four parts :-

(a) Part I : Importance of Fire Discipline and Fire Control Orders.

(b) Part II : Important Terms, Points for section commander & Method of Giving the Fire Control Orders.

(c) Part III : Sequence of Fire Control Orders.

(d) Part IV : Types of Fire Control Orders.

PART I – IMPORTANCE OF FIRE DISCIPLINE & FIRE CONTROL ORDERS

8. Fire discipline is a battle winning factor which will stand you in good stead, especially in situations where surprise is of paramount importance. Indiscipline firing starts with an individual and spreads like wild fire. Should the troops have confidence of correct, accurate and effective fire orders, they may not indulge in opening of premature/indiscriminate firing, thereby giving away position or wasting ammunition. Fire discipline and fire control orders are very important in all operations of war.

9. **Defence.** In defence, if fire is opened up prematurely, it will give away the defender's location allowing the enemy to change his plan and surprise the defender subsequently. Moreover, fire opened up at long ranges, is rarely effective and results in leaving the defender with less ammunition for the eventual attack by the enemy. Therefore good fire discipline and correct fire orders, as I said earlier, assumes added significance in the following cases:-

(a) During hours of poor visibility/darkness when men are jittery and tend to fire at imaginary targets.

(b) When enemy patrols try to draw fire from the defender in order to find his disposition.

PART II – IMPORTANT TERMS, POINTS TO REMEMBER &

METHOD OF GIVING THE ORDERS

Important Terms

10. Certain terms connected with fire control orders are: -

(a) **Fire Unit.** Any number of men firing under a commander, usually a section. The personal responsibility for giving them the executive order to fire is the fire unit commander.

(b) **Fire Direction Orders**. These are the orders which the fire unit commander receives from his superior, telling him when, at what target, and with what intensity to open fire. A section commander will receive fire direction orders from his Platoon commander. They may include key ranges and any specific direction about withholding of fire.

(c) **Fire Control Orders**. These are the orders given by the fire unit commander to direct and cont the fire of his fire unit. Emphasis should be on control and surprise. These orders are the final and complete instructions after all factors have been considered and before fire is actually opened.

(d) **Arc of Fire.** This denotes the area of ground for which the fire unit is responsible and within which it will engage targets. An arc of fire must not be confused with a field of fire, which is the area over which it can fire effectively.

Points for Section Commander

9. There are certain factors which must be remembered before giving fire control orders.

(a) **Indication.** No fire order can be effective unless the target is clearly indicated and can be easily recognised by the men of the fire unit.

(b) **Range.** Do the range, visibility and vulnerability of the target justify fire at all? Would it be better to wait and get a more vulnerable target or achieve more/complete surprise?

(c) **Best Weapons to Use.** What is the best weapon or weapons to use? Although the LMG is the main weapon of the section, the target may be more suitable for rifle fire only, or possibly for a combination of weapons, eg a LMG and rifle grenade.

(d) **Rate of Fire**. Should the fire be in single round or in bursts? Should it be rapid or at the normal rate? Rapid rate is justified only on a few occasions, when it allows the max effect to be gained from surprise and volume of fire or when an especially vulnerable target presents itself or to cover move of troops in the final stages of an assault.

Method of Giving the Orders

11. Having decided to open fire, there is then the need to give orders. The four main rules which must be adhered to are: -

(a) The orders should be given clearly, calmly and concisely.

(b) It should be given loudly so as to be heard above the noises of the battle.

(c) It must be given as an order, to be obeyed as such.

(d) It should be given with adequate pauses, so that those being addressed may have the time to take the correct action. For example there must be time for sight adjustment after the range is given.

PART III – SEQUENCE OF FIRE CONTROL ORDERS

Sequence of Fire Control Orders

12. Fire control orders must be given in the laid down sequence so as to avoid confusion and misunderstanding. For ease of remembering the sequence for giving fire control orders, remember the catch word `GRIT'.

(a) G -The Group of the section which is addressed, i.e the LMG group, the rifle group or the whole section. An order starting 'No 1 Section indicates that the whole section will fire, `LMG Group' or 'Rifle Group' means that group only is to fire.

(b) R -The range to the target should be given next. It is to ensure accuracy of fire and to draw attention on a limited area of ground (Instructor to explain why range has to be given before indicating the target).

(c) I - The indication of the target by the simplest form of indication.

(d) T - The type of fire to be emp. i.e open fire at once, or on further orders, or when the opportunity arises.

PART IV – TYPES OF FIRE CONTROL ORDERS

Types of Fire Control Orders

13. There are four types of fire control orders as under :-

(a) **Delayed Fire Control Orders**. These orders are given as an early warning when enemy is seen approaching at a longer range so that necessary preparations are made by the troops to open fire, as soon as the enemy appears within the effective range of weapons. Delayed fire control orders are executed in two manners:-

(i) When the initiative to open fire is left to the man eg

"No 1 Sec - 800 - JUNGLE se dushmankaek sec advkarrahahai. Jab mar keilake men aye to FIRE".

(ii) When initiative to open fire is with fire unit commander. eg

"No 1 Sec - 800 - JUNGLE se dushmankaeksecadvkarrahahai - mereagalehukamkaintizarkaro".

(b) **Full Fire Control Orders.** As the name suggests these are orders complete in all respects. These fire control orders are given when fire is to be brought down immediately on a target within the effective range of weapons. There are two types of full fire control orders.

(i) Distributed Area Target. This is when the enemy presents itself over an area. eg

"No 1 Sec - 200 - JHARI - DAINE tin baje DARKHT - takdushmanki position. LMG Group char burst, rifle group tin tin round FIRE".

(ii) Pin Point Target. This is when enemy presents itself at one place only. eg

"Rif Gp 300 AkelaDarkhat, Darkhatke niche dushmanka sniper, Rfn No 1 - tin round 'FIRE".

(c) **Opportunity Fire Control Orders.** These orders are given when the target is not continuously seen by every one in the section or when the enemy has taken cover, eg:-

"No 1 Sec 400 tutifutizamin me dusmanchhupahuahai, nazarane per FIRE".

(d) **Brief Fire Control Orders**. These are given when time is not available to give out a full fire order. In this only essential details are given. This type of order is normally given when enemy appears at close range and surprises us. eg

"LMG group sights down enemy running left to right - FIRE (Instructor to explain significance of the phrase sights down".

. **CONCLUSION**

14. (a) Necessity of fire discipline and hence fire cont orders to conserve and expend ammunition judiciously and effective. Not to disclose own position prematurely at long ranges, as chances of enemy escaping are more and they would have taken away information of your dispositions, which is not desirable.

(b) Fire direction orders.

(c) Components of fire control orders - GRIT.

(d) Fire orders themselves may be:-

(i) Full fire control orders.

(ii) Opportunity fire control order.

(iii) Brief fire control orders.

(iv) Delayed fire control orders.

15. Fire Control Orders are essential to maintain surprise, save ammunition and engage targets with speed. The correct sequence must be followed to avoid confusion.

16. Fire discipline should be exercised through fire control orders; however it does not imply that a soldier should never fire without orders. There will be many an occasion when the soldier must use his initiative and fire on the enemy. This applies in defence once the main attack has developed and need for concealing the position no longer exists. An enterprising rifleman can influence the course of the battle by picking on and killing enemy commanders and other key personnel such as radio operators.

LESSON PLAN :FC & BC 9
FIRE AND MOVEMENT

Period - One

Type - Lecture/Practice

Code - FC & BC 9

Term - III

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	When to use Fire & Movement tactics.	-	3 Min
	(b)	Basic consideration for Fire & Movement.	-	5 Min
	(c)	Ground Appreciation.	-	5 Min
	(d)	Types of cover.	-	5 Min
	(e)	Dead Ground.	-	3 Min
	(f)	Command Mistakes.	-	5 Min
	(g)	Map and air photographs.	-	3 Min
	(h)	Selection of fire position.	-	3 Min
	(j)	Fire Control in attack & defence.	-	4 Min
	(k)	Movement.	-	2 Min
	(l)	Conclusion	-	2 Min

INTRODUCTION

3. The primary aim of infantry is to close in with the enemy & destroy him. The aim of getting close is achieved by making skilful use of ground. A clever enemy will however, deny you the use of such ground which you may need. When such a cover is denied by the enemy, we may have to movement in open.

4. Once we are forced to movement in open, a part of our force will have to fire on en position & force him to keep his head down. This would render the en incapable of bringing down aimed fire at us while we are on the movement. This process of keeping one element on

the ground to give covering fire, while the other element is on movement, is called fire & movement. This is the basic tactics of all infantry & mechanised ops.

AIM

5. The aim of this lecture is to teach basic infantry fire & movement tactics.

PREVIEW

6. This lecture will be conducted in following eleven parts: -

(a) Part I. When to use Fire & Movement tactics.

(b) Part II. Basic consideration for Fire & Movement.

(c) Part III.GroundAppreciation.

(d) Part IV.Typesofcores.

(e) Part V. Dead Ground.

(f) Part VI. Command Mistakes.

(g) Part VII. Map and air photographs.

(h) Part VIII. Selection of fire position.

(j) Part IX. Fire Control in attack &defence.

(k) Part X. Movement.

PART I : WHEN TO USE FIRE AND MOVEMENT TACTICS

7. Fire & movement tactics may be used in following circumstances: -

(a) The enemy has opened SA fire which is effective.

(b) When own troops have seen the en first - within 400 to 700 meters.

(c) When the en is known or suspected to be in a certain area, then fire & movement tactics may be adopted when the troops reach within the effective range of en weapons/observation. (Instructor to explain as to what could be the effective range of enemies personal weapon)

(d) To cross obstacles by day or by night, e.g. nullahs/rivers.

(Instructor should explain the meaning of effective en fire. Details of the same are provided in the chart and demo part of this script)

PART II : BASIC CONSIDERATIONS

9. There are five basic considerations for fire & movement. These are as under:-

(a) **No movement on exposed ground without covering fire**. Cadet, the advantages of covering fire are obvious, but this does not mean that fire will be brought down continuously when you are movement. Whenever you have ground providing you cover, you must use it. Whenever you have to movement in open, fire must be brought down on the en in small bursts to keep his head down.

(b) **Control by the commander**. The sec can remain a viable force only when it is under the control of its commander. Otherwise, it is likely that the required fire support will not be brought down at the required place & time. In a section, Gentlemen, control is ex by voice command & hand signals. As a rule, sec commander must keep his section within range of voice or visible control.

(c) The angle of covering fire from direct firing weapons should be as wide as possible w/o loss of control or time. It is to ensure that own troops are not coming under effective fire of own fire sp. It also ensures that the fire support is provided till as late as possible so that assault troops are able to close in with the en.

(d) **Full use of available cover.** Full use should be made of cover provided by the ground. Various types of cover have already been taught to the cadets.

(e) **Optimum use of all available weapons.** All available weapons should be used for producing covering fire.

PART III : APPRECIATION OF GROUND

10. In battle, fire & movement is applied according to the type of ground over which we are op. In open country, the problem is to find cover; in close country, there is difficulty in finding positions with good observation & field of fire. Skillful use of ground can help achieve surprise & save lives. It is therefore required to develop an eye for ground. Ground should be considered from the enemies point of view & it should be appreciated for the following :-

(a) Fire positions.

(b) Observation positions.

(c) Cover from fire.

(d) Cover from view.

(e) Obstacles.

(Instructor to explain that while movement, sec commander & every member of the sec is responsible to continuously look for nearest cover which he may have to take once en

opens effective fire. He is also responsible to appreciate various fire positions & types of cover being provided by that particular cover)

PART IV : TYPES OF COVER

11. Cover from view is often not cover from fire, especially if the movement to cover has been seen by the enemy. Concealment from enemy air and ground observation is the chief means of gaining surprise. Some of the main types of cover are:-

(a) Undulating ground which is the least obvious form of cover; when skillfully used, it protects from direct fire and gives no ranging marks to the enemy.

(b) Sunken roads, beds of streams and ditches which give good cover from view and often from fire as well. However, there is always a danger that the enemy may pay special attention to them; they may be mined or booby-trapped and precautions against ambush must be taken. If the roads or ditches are straight, the enemy will be able to fire down them in enfilade.

(c) Hedges and bushes give cover from view but not from fire. In open country they may make good ranging marks for the enemy.

(d) Standing crops give cover from view but movement through them can generally be detected.

(e) Woods which give cover to men and vehicles from enemy air and ground observation. They give some protection from small arm fire but HE bombs and shells will explode in the branches of trees and will cause heavy casualties unless troops are dug in and have overhead protection.

(f) Buildings and walls afford concealment and protection from small arms fire and shell splinters. When isolated they make good ranging marks for the enemy.

PART V : DEAD GROUND

12. Ground which a soldier can not see from his position is called dead ground. Platoon and section commanders should be able to recognise ground which is likely to be dead to the enemy. Ground can only be described as dead in relation to the position of an observer. Troops under cover or in dead ground are safe from enemy observed fire but not from indirect fire. These areas are always likely to be selected by the enemy as defensive fire tasks for his artillery and mortars. Dead ground is also safe from detection by battle field surveillance radars, as these have line of sight limitations.

PART VI : COMMON MISTAKES

13. The wrong use of ground may lead to casualties and loss of surprise; some common mistakes are:-

(a) Carelessness by troops while making a reconnaissance, such as unfolding a map in the open or not using a covered approach to an OP.

(b) Unnecessary movement in a position overlooked by the enemy.

(c) Using conspicuous landmarks such as isolated trees, bushes or cottages.

(d) Halting troops near road or track junctions or other mapped features which are always registered as targets by the enemy.

(e) Bad track discipline.

(f) Failure to guard against enemy air observation.

PART VII : MAPS AND AIR PHOTOGRAPHS

14. Maps and air photographs should be used together to obtain the best picture of the ground. The two aids are complementary as is shown by listing the advantages and limitation of air photographs:-

(a) Advantage.

(i) Are more up-to-date.

(ii) Gives more detail.

(iii) Show the size and shape of features accurately.

(iv) Allow gradient to be seen in relief with a stereoscope.

(b) Limitations

(i) Complete geographical cover almost impossible.

(ii) Expensive to produce.

(iii) Scales vary.

(iv) Details of heights not given.

15. Only the topographical information given by air photographs needs to be understood. The interpretation of the details of enemy defences is the task of the experts. Very little time need be spent in mastering the theoretical knowledge of map reading but a great deal of practice is required. The use of the prismatic compass and the protractor must also be mastered by sub-unit commanders. Navigation is a science and never a guess. An officer must have complete trust in his compass; this only comes with practice.

PART VIII : SELECTION OF FIRE POSITIONS

16. The ideal fire position should:-

(a) Provide cover from fire.

(b) Provide cover from view.

(c) Afford a good view of the ground to be watched or target to be engaged.

(d) Provide room in which to use the weapon freely.

(e) Have a covered approach.

(f) Be easy to advance from.

17. The selection of fire positions requires a knowledge both of the characteristics of weapons and of the use of ground. A direct firing weapon must be sited with an eye at the level from which it is to fire. A target which is clear to a man standing may be invisible to one lying down.

18. Sometimes it may be necessary to site fire positions on trees, rooftops, haystacks or walls to produce fire effect. This may result in plunging fire, but this must be overcome by accurate shooting. Cunning concealed fire positions will puzzle the enemy, protect the troops from observed fire and safeguard them against air attack.

PART IX : FIRE CONTROL IN ATTACK AND DEFENCE

19. There is a big distinction between fire control in attack and in defence. In attack men should be allowed a great deal of latitude in opening fire. Speed and immediate fire effect is what is required. With a well concealed enemy it will often be necessary to “neutralise” an area by fire since few definite targets will be visible. In defence, the vital factor in fire control is that early opening of fire may give away positions to the enemy and jeopardize concealment. Normally, a section commander will lay down a line in front of his section post beyond which fire will not be opened without his orders. This is particularly important where a long field of fire is available. In any case fire will normally be opened on the orders of the section commander.

PART X : MOVEMENT

20. Movement in the face of the enemy should be covered by fire. This does not mean that it is impossible to movement unless a heavy weight of fire is brought down on the enemy. An important part of an attack is the movement towards the objective, supporting fire is one of the aids to that movement. A knowledge of how to movement and how to use ground for movement is essential to enable troops to close with the enemy with minimum casualties, undetected in the zone of arc of battle field surveillance radars.

CONCLUSION.

21. Usually, troops advancing by day in action will movement at a brisk walking pace until they make contact; in the final stages of the assault, they will double. They may have to double or crawl at other times; for example if attacking troops movement into enemy defensive fire, it is usually best to double forward and through it; to lie down is often dangerous as well as useless. Doubling and crawling are both tiring however, and should only be used in short spells in critical situations particularly for crossing open ground in full view of the enemy. The commander must himself decide on his pace from his personal knowledge of the state of fitness of his men. In general the aim must always be to keep movement determinedly towards the enemy at the best possible speed.

LESSON PLAN :FC & BC 10
KNOTS AND LASHINGS

Period - Two

Type - Lecture/Practice

Code - FC & BC 10

Term - II

Training Aids

1. Ropes, Ballies, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction	-	05 Min
	(b)	Tying of knots	-	35Min
	(c)	Lashing and Splicing	-	35 Min
	(d)	Conclusion.	-	05 Min

INTRODUCTION

3. The ability to join two pieces of natural material together, and so increase their length, gives man the ability to make full use of many natural materials found locally. Sailors probably did more to develop order in the tying of knots, because for them it was necessary not only to tie securely but also to be able to untie, often in the dark and under conditions of bad weather and with rain-tightened ropes.

4. In the defence work probably half a dozen knots would suffice, but knots and knotting have a fascination for many people the world over, and a comprehensive range of knots, plain and fancy, and, with these, splices, whipping, plaits, and net making are included in this lecture with information of general use. Knot tying is a useful exercise to obtain better coordination between eyes and fingers. The identification of knots by feel is an excellent means of developing recognition through touch.

AIM

5. Aim of this lecture is to acquaint cadets with knots and lashings commonly used.

PREVIEW

5. (a) Part I : Tying of knots

(b) Part II : Lashings and splicing

PART I: TYING OF KNOTS

6. A brief description of the use to which the knot may be put is given in this lesson plan. The diagrams will explain how the knot is tied. The letter "F" means the free or untied end of the rope, and the letter "S" means the standing or secured end.

7. **Knots For Rope Ends Or For Grips On Thin Rope**

(a) **Thumb Knot:** To make a stop on a rope end, to prevent the end from fraying or to stop the rope slipping through a sheave, etc.

(b) **Overhand Knot:** Overhand knot may be put to the same use as the thumb knot. It makes a better grip knot, and is easy to undo.

(c) **Figure Eight:** This knot is used as the thumb knot. Is easy to undo, and more ornamental.

8. **Knots For Joining Ropes**

(a) **Sheet Bend**: To join or bend two ropes of unequal thickness together. The thicker rope is the bend.

(b) **Double Sheet Bend**: Similar to single sheet bend, but gives greater security, also useful for joining wet ropes.

(c) **Crossover Sheet Bend:** This holds more securely than either the single or double sheet bend and has occasional real uses such as fastening the eye of a flag to its halyard where the flapping might undo the double sheet bend.

(d) **Reef Knot**: To securely join two ropes of equal thickness together. Notice the difference in position of the free and standing ends between this and the thief knot.

(e) **Thief Knot**: To tie two ropes of equal thickness together so that they will appear to be tied with a reef knot, and will be retied with a true reef knot. This knot was often used by sailors to tie their sea chests, hence the name.

(f) **Carrick Bend**: This bend is for the secure fastening of two ropes of even thickness together. It is particularly suitable for hawsers and steel cables. It can be readily undone and does not jam, as do many other bends and knots.

(g) **Fisherman's Knot**: For joining two springy materials together; suitable for wire, fishing gut or vines. Two thumb knots (one on each rope) pulled tight. The knots lock together.

9. **Knots To Make Loops In Rope**

(a) **Bowline:** To form a loop that will not slip on a rope end.

(b) **Bowline On A Bight**: To make a double loop that will not slip on a rope end. Also called a bo'sun's chair.

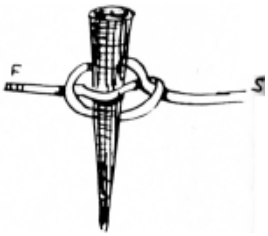
(c) **Fisherman's Eye Knot**: This is the best method of making a loop or eye in a fishing line. The strain is divided equally between the two knots.

10. **Knots For Fastening Ropes**

(a) **Slippery Hitch**: Very useful because of the ease with which it can be released in emergency. It holds securely for so long as there is a strain on the standing end.

(b) **Clove Hitch**: For securing a rope to a spar. This hitch, if pulled taut, will not slip up or down on a smooth surface. A useful start for lashings.

(c) **Boat Knot**: This is a method of securing a rope to a hole pin or other small piece of wood on a boat. It is quickly released.

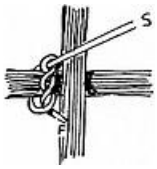


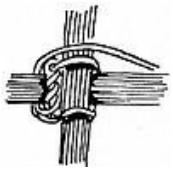
(d) **Double Boat Knot**: A bight is simply passed through the ring and a marlin spike or other round piece of wood is put between the bight or the rope. Withdrawal of the spike quickly releases the knot.

PART II: LASHING

11. The methods employed to tie with ropes poles or any rope to a stationary object to securely hold it in place is known as lashing.

(a) **Square Lashing**: to join poles at right angles. Start with a timber hitch or a clove hitch below cross bar. If using a timber hitch see that the pull is straight through the eye and not back from it. Pulling back will cut the lashing material. Put lashing material tightly around upright and cross bar about four complete times.

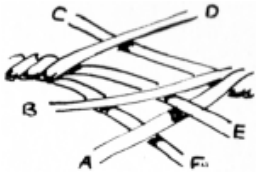




(b) **Frapping turns**: Make about two or three frapping turns. These are turns that go round the lashing and pull it taut. These pull the lashing tight. Secure end of frapping turns either by half-hitches or by passing between lashing at the crossover and secure with a half hitch. Diagonal Lashing: for bracing or joining spars at irregular angles.

13. **Splices**

(a) **Short Splicing**: Un lay the strands and marry them together; butt hard up to each other. The strand D first goes under the standing end of A, but over strand B and over C on the standing end. Thus each strand at either end goes over one strand of the standing end on the opposite side and under the next strand, so that there is a strand of the standing end between each short side of the splice. Continue working the free strand of each end four or five times into the strands of the standing end.



(b) **Long Splicing**: The strands are unlaid for a considerable length and then married as for the short splice. Then the one strand is unlaid and its married counterpart is laid along its place in the rope. The two centres are simply held with a crossover knot, and the strands thinned down and spliced as for a short splice. The end strands are finished with a crossover knot and again the strands are thinned down and finished as for a short splice. This long splice does not appreciably thicken a rope which may be thus spliced to go through a sheave.

LESSON PLAN :FC & BC 11
SECTION BATTLE DRILL

Period - Four

Type - Lecture/Practice

Code - FC & BC 11

Term - III

Training Aids

1. Computer Slides, Pointer, Charts, Black board & Chalk.

Time Plan

2.	(a)	Introduction	-	03 Min
	(b)	Essentials of Section Battle Drill	-	10 Min
	(c)	Stages of Section Battle Drill.	-	25 Min
	(d)	Conclusion.	-	02 Min
	(e)	Practice	-	2h

INTRODUCTION

3. In battle, we react to certain situations in a set manner to save time & avoid confusion. In military language Battle Drill means reaction by units, sub units or groups to certain common situations. Battle Drills are very useful in tackling minor tactical problems. They save time, ensure rapid reaction & avoid confusion. Thus, it accomplishes the mission in minimum possible time & maintains the momentum of advance with minimum casualties.

4. The action of a section from the time it comes under effective enemy fire till the time it has cleared the opposition is carried out as a drill. This drill is flexible & relies on the logical sequence of actions to be undertaken by the section commander in order to overcome the opposition. It is based on the elementary principle of fire & movement. There are two aspects to section battle drill. These are the essentials & parts of section battle drill.

AIM

5. Aim of this lecture is to acquaint cadets about the procedure of section battle drill.

PREVIEW

6. (a) Part I : Essentials of Section Battle Drill

(b) Part II : Stages of Section Battle Drill.

PART I : ESSENTIALS OF SECTION BATTLE DRILL

7. The basic essentials of any battle drill are born out of the necessity to ensure rapid reaction without any confusion so that the task is completed in minimum possible time. This maintains the momentum of advance & ensures minimum casualties, so that combat effectiveness is retained for a longer period. It also ensures maximum use of all available weapons. The following are the basic essentials of section battle drill:-

(a) Quick Appreciation.

(b) Orders.

(c) Fire &Move .

PART II : STAGES OF SECTION BATTLE DRILL

Stage I : Action on coming under effective fire.

8. The Section Commander, as he advances, will constantly be on the look out for:-

(a) New reference points for fire control orders. He may describe these to the section as they advance and each may acknowledge with a signal or shout 'Not seen' if he had failed to recognize the reference points.

(b) Position where the section can take cover in the event of coming under effective fire. Whenever possible the section commander will indicate such positions in form of anticipatory orders e.g. 'if we come under effective fire, LMG group takes cover in those bushes, rifle group along that bank'.

9. It is instinctive to most men to drop down on the ground, when under fire. The men should not go to ground till the effective fire of the enemy is brought down or the order 'Take Cover' is given by the Section Commander. On receiving order for taking cover the following action will normally be taken by each man of the section:-

(a) Run to the nearest cover or that already indicated by the Section Commander in his anticipatory orders.

(b) Every man will dive or drop into the cover and crawl away so that the enemy has not got his sights on anyone when he re-appears.

(c) Take position and observe the enemy.

(d) Apply sight and fire on spotting the enemy without waiting for an order from the section commander.

(e) Bunching together should be avoided at times and apart from No 1 and 2 of the LMG group, when necessary, no man in the open by day should ever be less than 5 yards from his nearest fellow , depending on the cover available.

(f) On 'TAKE COVER' order by the section commander, DASH-DOWN-CRAWL-OBSERVE-SIGHT-FIRE (If the enemy has been located).

Stage II : Locating and Neutralizing the Enemy

10. **Locating.** The location of enemy and its fire is usually not easy. The following drill will be followed for locating the enemy.

(a) **By Observation.** Look in the area from which the 'thump' came. The time between the 'crack' and the 'thump' gives an indication of the range. If nothing is seen after about 30 seconds or so, it is very unlikely that enemy will be located by looking.

(b) **By Fire**. The section commander will give a fire control order to a couple of rifleman to fire two shots each into likely cover. The rest of the section will observe their area of observation carefully. If there is no answer to fire, then the section commander should try another couple of rifleman at some other target. If there is still no enemy fire, either they are well trained or they have withdrawn.

(c) **By Movement**. The section commander will order one or two men to get up and double forward about 10 yards to a different cover. He might do this again if it draws no fire. If the enemy troops are there, they must be extremely well trained not to fall for these tricks and start firing at such poor targets. (A man getting up and moving fast for about 10 yards is a very difficult target to hit). If there is still no enemy reaction then the section commander must continue the advance.

Target Indication

11. If any soldier of the section located the enemy before the section commander, he will insert a tracer round into his rifle, shout 'Watch my Tracer' and fire and continue to fire until the section commander issues fire control orders or orders to stop the fire.

Neutralisation

12. (a) As soon as the section commander knows the position of the enemy he must give a fire control order to bring on the enemy sufficient weight of the section fire power to neutralize them. If certain individuals have already started the firing, the section commander will resume control by preceding his fire control order with the order 'STOP'.

(b) Having won the fire fight, the section commander must retain the fire initiative by cautiously bringing fire down on the enemy whilst he manoeuvers closer in order to assault them.

Stage III : The Assault

13. The section commander will decide whether to attack from the flank or right flank depending upon the position of the LMG group, the position of the enemy and the routes available.

14. The section commander's orders, for the assault are confined to :-

(a) LEFT or RIGHT flanking (to indicate which side of the LMG group, the rifle group will work).

(b) Which group will move first?

(c) Place to which LMG group will move, if it is to move first.

15. The main points to note are:-

(a) The section commander will lead the rifle group in person, he is normally in the centre.

(b) Covering fire will be provided for all movements in the open. The angle of the fire should be as wide as possible.

(c) When the rifle group gets down into fire position after a bound, the LMG group must move forward into a new fire position automatically. Once the LMG group is in a position from which it can support the assault from a good angle, the rifle group will move in one bound. Before the assault goes in, the rifleman armed with the grenade discharger cup and the projector strim grenade should be ordered to remove these from their rifle, if necessary.

(d) Normally the assault will start at the 'walk' with firing being carried out from the shoulder or the hip (marching fire). The section doubles only during last 100 to 50 yards when the section commander gives order 'CHARGE'.

(e) No 1 and No 2 of the LMG group must carry sufficient magazines to support a normal section attack.

(f) As the assault goes in, the LMG group will fire as long as possible and then switch its fire across the objective just in front of the rifle group.

Stage IV : Re-Organisation

16. Once the assault is made the following action will take place as drill:-

(a) The LMG group will rejoin the fire group 'at the double' immediately it sees the rifle group take cover after the assault.

(b) The section commander will organize a search of the area of the objective for any enemy hiding or wounded. Rifle numbers detailed to search will be covered by other rifleman.

(c) The section commander will check positions of rifleman and LMG group, allot arcs of observation and detail reference points.

(d) The section commander will check:-

(i) Casualties,

(ii) Ammunition expenditure, and

(iii) Refilling of LMG magazine.

(e) The section commander will await the platoon commander for further orders.

CONCLUSION.

17. A defender will make use of small detachments/parties to cause delay and casualties to the advancing enemy. At the same time the attacker must be fully prepared to neutralize these minor impediments. Hence battle drills must be rehearsed and practiced so that minimal delay is imposed.