

FUNDAMENTALS OF ARMAMENTS

1. Armament - branch of ordnance that deals with SAW, Artillery and FCI.
2. Small Arms Weapons - diameter of 30mm and below usually fir by hand, shoulder, crew-served weapons.
3. Artillery Weapons - five types of cannons, guns, howitzer mortars, mounted or fixed or mobile. Diameter bore is 37mm and above.
4. Fire Control Instrument - device/instrument which aid in ffacilitating better acquisition of target.

BASIC COMPONENTS OF WEAPONS:

1. Barrel - through which bullet is given velocity and density of flight; concentrate gas to propel the bullet; mental tube of weapon.
 - a. Muzzle - forward end of barrel.
 - b. Bore - interior of barrel, bullet passes through.
 - c. Rifling - helical grooves, imparting rotation of insure stability and accuracy.
 - d. Lands - raised portion; caliber of weapon is measured.
 - e. Grooves - depressed or out portion.
 - f. Chamber - enlarged portion at rear where cartridge are place.
2. Breech - rear end of barrel - breech recess with fot
 - a. Breech ring (arty)
 - b. Breech block (arty)
3. Firing Mechanism - device to ignite armor or propelli.

TYPES:

- a. Free Floating - firing device that is free from of another body.

Ex: 5.56mm, M16

- b. Percussion - hitting of one body against another, device which has spring at the rear, pushing the firing pin forward.

Ex: LMG, Cal. 30

- c. Inertia - to keep moving in one direction unless affect by outside force. Device with spring in front of pin forward.

Ex: Cal 45

- d. Fixed - device which firing pin is firmly attached bolt.

Ex: SMG

- e. Electric - device, ignition of primer is by electric current.

4. Receiver - houses or holds other component parts too form a functioning unit.

CLASSIFICATION OF ARMAMENTS:

A. Operation -

1. Manually operated - FA's whose phases of operation is accomplished manually except firing. Ex: M203

2. Gas Operated - FA's with gas cylinder and piston or gas tube.

a. Impinging type - piston and operating rod are integral.

b. Tappet type - separate piston and rod. Ex: M14 Rifle

c. Expansion cut-off - central spindle valve at gas port and cylinder to close and use it in grenade launcher. Ex: M14

3. Recoil operated - FA's whose barrels move back and forth. Uses recoil energy to operate.

a. Short - bolts recoil farther than barrel. Ex. Cal.45

b. Long - bolts and barrel recoil at same distance.

4. Blow-back - weapon that uses gas to operate the cycle without any form of cocking system. Inertia of bolt and recoil spring hold breech closes. Characterized with heavy bolt and barrel remains station or during firing and locking mechanism.

a. Straight - 6 phases of cycle, no locking and unlocking.

Ex; M6, M1A1

b. Delayed - a device that is attached in the gun to returned early opening of breech.

Ex: SMG M1928A1

B. Function_

1. Automatic - firing continuous as trigger is squeeze. Ex: LMG

2. Semi-automatic - firing is done by successfully squeezing of trigger. Ex: Garrand

3. Single - designed to fire single shot and cycle is accomplished by manual operation of the bolt handle except firing. Ex: M79

4. Selective - could be fired either semi or automatic.

C. Use_

1. Hand - designed to be fired by hand. Ex: Cal. 45

2. Shoulder - designed to be fired by shoulder.

3. Crew-served - designed to be fired/manned by two or more person. Ex: Machinegun

D. Feeding

1. Muzzle Loading - ammo is fed thru the muzzle

2. Clip Fed - used to hold ammo together and load as one unit.
3. Magazine - weapon having magazine housing.
4. Link or Belt - weapon designed to received cartridge in belt.
 - a. Close link
 - b. Open-Link

5. Breech Fed - ammo is fed through the breech. Ex:
M203

CYCLE OF OPERATION

A. Recoil Movement (rearward/backward move) - rearward movement of some parts due to the explosion.

1. Unlocking - occurs after firing.
2. Extraction - pulling of empty cartridge case from chamber.
3. Ejection - throwing of case away from receiver.
4. Cocking - positioning of hammer to be ready to fire.

B. Counter-recoil (forward move) - forward movement of some components due to action of the recoil spring.

5. Feeding or loading - top round is alined along the path by magazine spear.
6. Chambering - round is placed in chamber and extractor swaps on case.
7. Locking - bolt locks to barrel.
8. Firing - when firing pin strike the primer.

MALFUNCTION AND STOPPAGES:

A. Malfunctions - failure of weapon to function satisfactorily, but does not break cycle of operation.

1. Runaway - continuous fire
2. Cock-off - premature firing
3. Hangfire - delayed ignition

B. Stoppage - interruption in cycle, caused by improper care and stupidity of operator.

C. Immediate Action - unhesitating application of prompt action taken to reduce stoppage without investigating the cause.

D. Remedial Action - further application of remedy by investigating the cause.

WARNING: Safety procedures relative to the handling and firing of ammo and weapons which every soldier should follow to avoid possible injury/death.

DANGEROUS PROCEDURES

1. Never interchange bolt between two weapons, due to incorrect headspace.
2. Weapon with H₂O, moisture and obstruction when fired may blow up.

3. Never fire ammo suspected of being tampered with.
4. If noticeable difference in sound / recoil, further firing be suspended.
5. Do not attempt to remove/replace handguard when weapon's upper and lower receiver are separated.
6. Selector must be in safe position during disassembly/assembly.
7. Handguard, buffer, extractor groups should not be removed unless necessary.
8. Detailed disassembly is not authorize and be kept to minimum to prevent wearing of parts.
9. Do not lubricate the ammo and magazine body except the spring only.
10. Rounds in the magazine should be check daily for corrosion and dent.
11. Do not load magazine with more rounds the authorizes.
12. Do not over-ride the charging handle, of bolt may not lock properly.
13. Weapons should not be stored long with bolt lock in rear.
14. Do not use gasoline / solvent to remove oil or grease instead use soap/water.
15. Magazine should be unloaded every 24 hours to prevent corrosion.
16. Do not scratch the surface of weapon barrel of metals.
17. Do not use bruch wire on aluminum surface and gas tubes.
18. Do not use abrasive materials in cleaning.
19. Clean bore/chamber in one direction only from chamber to muzzle.
20. Store weapon with bolt in non-cocked position to avoid spring tension.
21. Before starting an inspection, be sure to clear the weapon. Do not actuate the trigger until the weapon has been cleared. Inspect the chamber to insure that it is empty and check to see that no ammo is in position to be introduced.
22. In the event of a misfire, the round will remain in the chamber for the perscribe time intervals, the gun trained on the target and personnel cleared from the area.
23. Do not retract the bolt and allow it to go forward if belted ammo is on the feed tray and live round is in the chamber.
24. Avoid skin contact with P-C-111A. The compound should be washe-off thoroughly with running water if it comes in contact with the skin. A good lanolin base cream after exposure to compound is helpful. The use of rubber gloves and protective equipment is recommended.
25. Runaway Gun - hold the fire on target until feeding is stopped and the ammo is expended.
26. Maintenance of some groups (parts) and assy are not authorized by maintenance allocation chart (MAC) toorganizational maintenance. Insure that no work is being accomplished beyond the scoped authorized. Evacuate to direct and general support maintenance for repairs when necessary.
27. The use of gasoline, kerosene, benzene or high presure water, steam or air for cleaning the weapon is prohibited.
28. Do not dilute rifle bore cleaner(RBC). Do not add anti-freeze. Shake well before using.
29. Care must be exercise to avoid getting the RBC or oil in the gas cylinder when cleaning the barrel. Position the gas cylinder components will be remove and cleaned only when inspection reveals that the piston will no longer move within them cylinder under its own weight when the barrel is titled end for end. If gas cylinder components are cleaned, movement with gas piston by manually tilting the barrel assy. Rewire gas cylinder plug.

30. The buffer assy will not be submerged in solvents or other cleaning fluid, use only cloth on exterior surfaces to prevent corrosj.

31. During periods of in activity, clean and lubricate every ninety (90) days, unless inspection reveals more frequent servicing is necessary.

32. Examine weapon prior to using.

33. Never cock weapon until ready to fire.

34. Keep finger off the trigger except on firing.

35. Never point a weapon at anyone you do not wish to kill.

36. Treat every weapon as loaded until cleared.

37. Wait 10 seconds after misfire, then clean weapon quickly .

38. If danger of cook-off exist, keep round locked in chamber and point the weapon in safe direction.

39. Do not attempt unauthorized alteration or repairs.

40. Use equipment for the purpose it is intended.

STOPPAGE AND IMMEDIATE ACTION:

1. Stoppage - unintentional interruption on the cycle of operation, cause by improper functioning of the rifl or faulty ammo.

2. Malfunction -

3. Types of Stoppages:

a. Runaway

b. Cook-off

c. Hangfire

4. Chart: Stoppage and their causes and remedies (see attached)

5. Immediate Action - unhesitating, prompt, instinct action to remedy the stoppages without investigating the cause.

a. Re-cock

b. Take, pull, look, locate, reduce

6. Remedial Action - further remedy action by investigating the cause.

CHART # _____ - STOPPAGES: Their causes and remedies:

<u>Stoppages</u>	<u>Cause</u>	<u>Remedy</u>
1. Failure to Feed	:Def/worn parts, :dirty or dented mag :loose gas cyl plug	:Replace parts and clean :Replace Magazine, :tighten plug.
2. Failure to Chamber :Clean/lubricate parts	:Lack of :dirty oper'ing parts :chamber, def ammo	lubrication :clean chamber. :Replace ammo.
3. Failure to lock	:Lack of lubrication :Dirty locking rec's	:Clean/ lubricate; :Clean

recesses.

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| 4. | Failure to fire
ammo | :Defective ammo | :Replace |
| | | :Broken firing pin | :Replace firing
pin |
| | | :Defective firing mech | :Replace parts
or entire:
firing mech |
| | | :Bolt not fully locked. | |
| 5. | Failure to unlock | :Dirty chamber | :Clean |
| | | :Lack of lubrication | :Clean/
lubricates
operating parts |
| | | :Insufficeient gas | :Tighten gas
plug/ |
| | | :Spindle valve closed | :Open Spindle
valve |
| 6. | Failure to extract | :Dirty chamber | :Clean chamber |
| | | :Dirty ammo | :Replace ammo |
| | | :Broker extractor | :Repalace
extractor |
| 7. | Failure to eject
faulty | :Broken/worn ejector | :Replace
spring/par |
| 8. | Failure to cock
firing | :Def/broken firing
: mechanism | :Replace parts
:entire
mech. |

Maintenance - includes all measure taken to keep rifle in operating condition. This includes normal cleaning, inspection of defective parts, repair and lubrications.

