CAPTAIN’S CAREER COURSE

LESSON: FIELD ARTILLERY
TERMINAL LEARNING OBJECTIVE


CONDITIONS: In a classroom, given FM 6-20 and a student handout,

STANDARD: Identify fire support systems, organization and role of Field Artillery in support of Combined Arms Operations IAW FM 6-20.
SAFETY, RISK, AND ENVIRONMENTAL CONCERNS

- Safety Considerations: None
- Risk Assessment Level: Low
- Environmental Considerations: None
PRIMARY REFERENCES

- FM 6-20, Fire Support in the AirLand Battle
- FM 6-20-40, Tactics, Techniques, and Procedures for Fire Support for Brigade Operations
- FM 6-30, Tactics, Techniques, and Procedures for Observed Fire
- FM 6-71, Tactics, Techniques, and Procedures for the Combined Arms Commander
AGENDA

- Mission of field artillery.
- Roles of field artillery.
- Fire support organization.
- Ammunition.
- Artillery resources.
- Radars.
- Support relationships.
- Target types.
FIELD ARTILLERY MISSION

Destroy, neutralize or suppress the enemy by cannon, rocket and missile fire and to help integrate all fire support assets into combined arms operations.
DESTROY

- 30% casualties or materiel damage renders unit ineffective.
- Target out of action permanently.
10% casualties or materiel damage (12-24 hrs).

Most FA missions are neutralization fires.
SUPPRESS

- Limits enemy's performance.
- Effective as long as the fires continue.
- Low expenditure of ammunition.
HARASS

- Disturb rest.
- Curtail enemy movement.
- Lower morale.
ROLES

- Close support fires.
- Counter-fires.
- Interdiction fires/SEAD.
FIRE SUPPORT ELEMENT

- FSE at battalion, brigade, division, and corps levels.
- FSE at battalion level consists of:
  - Battalion fire support officer.
  - Mortar platoon leader.
  - Air Defense officer.
  - Chemical officer.
  - Engineer.
  - TACP.
  - S3 Air.
  - SALT.
BN FSO DUTIES

- Advise maneuver battalion commander (BN FSCOORD).

- Plans and coordinates indirect fires and CAS.

- Writes/disseminates fire support plan and matrix.

- Trains FSE and company FSOs.
TF ENGINEER

- Responsible for the tactical planning of FASCAM minefields.

- Coordinates with the FSO for the firing of FA FASCAM and integration of indirect fires with the obstacle plan.

- Coordinates for fire support to protect critical engineer operations.
S3 AIR

- Receives, coordinates, and processes all CAS requests.
- Battalion POC for Army Aviation requests.
- Advises Air Force TACP of ground tactical situation.
MORTAR PLT LEADER

- Determines mortar positions and maintains ammunition status.
- Seeks survey and/or MET data support from the FSO.
ADA OFFICER

- Provides status of ADA assets.
- Coordinates airspace control.
CHEMICAL OFFICER

- Advises on effects of friendly and enemy NBC attacks.
- NBC warning and reporting.
- Use of smoke.
TACTICAL AIR CONTROL PARTY (TACP)

- Advises on capabilities and limitations of TACAIR.
- Processes TACAIR requests through Air Force channels.
- Controls the CAS sorties supporting the battalion.
SUPPORTING ARMS LIAISON TEAM (SALT)

Advises on Naval gunfire information and characteristics.
FIST - FIRE SUPPORT TEAM

Armor units FIST:
- Fire Support Officer - LT.
- Fire Support SGT - SSG.
- Fire Support SPC - SPC.
- RTO - PFC.

Light Infantry FIST:
- All of the above personnel plus...
- Forward observer party consisting of SGT and a PFC as the RTO.
COLT - COMBAT OBSERVATION LASING TEAM

- Armored and mechanized infantry divisions.
- Six COLT teams per maneuver brigade.
- Each team consists of:
  - Team Chief - E5.
  - Fire support SPC.
  - RTO - E3.
RANGEFINDERS

- **LLDR - Lightweight Laser Designator Rangefinder.**
  - Range - 10 km.
  - Weight - 35 lbs.

- **AN/GVS-5 - Laser Range Finder.**
  - Range - 10 km.
  - Weight - 5 LB
BFIST - “Thunderstrike”.

Fielded FY 1999.

3rd ID, FT Stewart, Georgia.
FIRE PLANNING

FSE with BN HQS

FDC with Guns

You

Fist
AMMUNITION

- High Explosive (HE).
- Improved Conventional Munition (ICM).
- Smoke.
- Illumination (ILLUM).
- Precision.
105MM MUNITIONS
HIGH EXPLOSIVE, ROCKET-ASSISTED (HERA)

Provides extended range to light forces.

<table>
<thead>
<tr>
<th>Munition</th>
<th>Range</th>
<th>Container</th>
<th>Max Charge</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>M913</td>
<td>11.5-19.5 km (M119 only)</td>
<td>PA117 (New metal canister)</td>
<td>8</td>
<td>Fielded</td>
</tr>
<tr>
<td>XM927</td>
<td>7.5 - 17 km (All 105 MM)</td>
<td>PA117 (New metal canister)</td>
<td>7</td>
<td>No Production Date Set</td>
</tr>
</tbody>
</table>

1.8 times the effectiveness of the M1 HE.
## M795 HE

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<th>Max Charge</th>
<th>Status</th>
</tr>
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<tbody>
<tr>
<td>M109 A2/A3</td>
<td>17.7 km</td>
<td>TNT High Explosive / High Frag</td>
<td>8 Red</td>
<td>Red</td>
</tr>
<tr>
<td>M109 A5/A6 M198</td>
<td>22.5 km</td>
<td></td>
<td>8 Red</td>
<td>Fielde d</td>
</tr>
</tbody>
</table>

- Registration round for M483 family.

Increases 155MM HE range 32% to 22.5 km.
ANTIPERSONNEL BEEHIVE

Killer Junior.
IMPROVED CONVENTIONAL MUNITIONS (ICM)
## Dual-Purpose Improved Conventional Munition

Enhances lethality of light forces.

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<th>Max Charge</th>
<th>Payload</th>
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<tr>
<td>XM91 5</td>
<td>10-14 km (M119 only)</td>
<td>PA117 metal canister</td>
<td>8</td>
<td>42 XM80 Grenades (w/self-destruct)</td>
</tr>
<tr>
<td>XM91 6</td>
<td>3-11 km (All 105 MM)</td>
<td></td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>
Characteristics:
- 155MM projectile.
- Extended range. **= US survivability.**
- Greater accuracy.
- Increased reliability.
- Self-destruct mode.
- "Wooden round".
- Compatible with M109 series, M198, and Crusader.
XM982 EXTENDED RANGE DPICM PROJECTILE

Payload Expulsion
Self-Destruct within 4 minutes

Base Burn 15 seconds
Rocket Burn 2 sec
coast
**M825A1 WHITE PHOSPHORUS SMOKE**

Provides restriction free smoke up to 22 km.

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<th>Max Charge</th>
<th>Status</th>
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<tbody>
<tr>
<td>M109 A2/A3</td>
<td>4.5-17.5 km</td>
<td>116 WP-SATURATED FELT WEDGES</td>
<td>8 Red</td>
<td>Fielded</td>
</tr>
<tr>
<td>M109 A5/A6 M198</td>
<td>4.5-22.5 km</td>
<td></td>
<td>8 Red</td>
<td></td>
</tr>
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</table>
PRECISION

- Copperhead.
- Selected Armor Defeating Artillery Munitions (SADARM).
- Brilliant Anti-Armor Submunition (BAT).
RESOURCES

- Mortars.
- Field artillery.
- Naval gunfire.
- Tactical air.
- Army aviation.
- Electronic warfare.
LIGHT MORTARS

- 60MM.
  - Two per light infantry company.
  - Six per light infantry battalion.

- 81MM.
  - Four per light infantry battalion.
M119

- 105MM, towed.
- Eighteen per light artillery battalion (3x6).
M198

155MM, towed.
M109A5

155M, SP.
M121

- 120 MM mortar.
- Six per heavy task force.
M109A6 (PALADIN)

- M109A6, 155mm, SP.
- Equipped with a modular azimuth position system (MAPS).
PALADIN
MLRS
HIGH MOBILITY ARTILLERY ROCKET SYSTEM (HIMARS)

- Support light divisions (C-130).
TACTICAL AIR - A10
ARMY AVIATION - HELLFIRE
AN/TPQ-36

- Locates short-range, high-angle weapons, also artillery and rockets.
- Range of 12 km artillery and mortars, 24 km rockets.
- Located 3-6 km behind FLOT.
AN/TPQ-37

- Locates long-range, low-angle weapons.
- Range of 30 km artillery, 50 km rockets.
- Located 8-12 km behind FLOT.
RADAR ZONES

- Critical friendly zone:
  - Area, usually a friendly unit or location, the maneuver commander designates as critical.
  - Priority 1 message for FA is generated.

- Call-for-fire zone:
  - Search area, forward of the FLOT, the maneuver commander wants destroyed, neutralized, or suppressed.
  - Priority 2 (may upgrade 1) message.
RADAR ZONES

Artillery target intelligence zone:
- Area in enemy territory the maneuver commander wants to monitor.
- Target report message is generated.

Censor zone:
- Area the maneuver commander wants to ignore all target detections.
- Example: to protect friendly artillery/mortar units.
SUPPORT RELATIONSHIPS

- Direct Support (DS).
- Reinforcing (R).
- General Support Reinforcing (GSR).
- General Support (GS).
DIRECT SUPPORT (DS)

- In support of a maneuver brigade, prioritize with the Field Artillery the needs of supported brigade only.
- Most decentralized of the standard tactical missions.
REINFORCING (R)

- One field artillery battalion to augment the fires of another Field Artillery battalion.
- A field artillery battalion may only reinforce one direct support battalion.
- First priority is to the reinforced unit.
GENERAL SUPPORT REINFORCING (GSR)

- Under control of the force Field Artillery HQs.
- Second priority is to reinforce the fires of a direct support battalion.
GENERAL SUPPORT (GS)

- Supports the force as a whole.
- Immediately responsive to the needs of the force commander.
- Most centralized of the standard tactical missions.
ARMOR/MECHANIZED INFANTRY DIVISION

- Radar:
  - Q37 - 2.
  - Q36 - 3.

- M109, 155MM (3x8).

- MLRS Battery.
LIGHT INFANTRY DIVISION

- M119, 105MM (3X6).
- M198, 155MM (8 guns).
  Each direct support battalion has one (1) Q-36 Radar.
- No MLRS.
AIRBORNE/AIR ASSAULT DIVISION

- M119, 105MM (3X6).
- No organic radar.
- No 155MM or MLRS.
- Units having 155MM capability are assigned from corps.
FIELD ARTILLERY BATTALION (DS)

HHB  Service
Adequate Field Artillery for command forces.
\[\Rightarrow\text{Brigade control: 1-5 FA (155, SP) (DS).}\]

Weight main effort.
\[\Rightarrow 2-636 \text{ FA (155, SP) (R 1-5 FA).}\]

Facilitate future operations.
\[\Rightarrow 4-5 \text{ FA (155, SP) (%R 1-5 FA).}\]

Field Artillery capability immediately available for commander to influence the action.
\[\Rightarrow B/6 \text{ FA (MLRS) (GSR 1-5 FA).}\]

Maximum feasible, centralized control.
\[\Rightarrow \text{Defense: Centralized.}\]
\[\Rightarrow \text{Offense: Decentralized.}\]
TARGET TYPES

- Target of opportunity - target appears during combat; fires are not planned.
- Planned target - a target which fire is preplanned.
PLANNED TARGETS

- Scheduled target.
- On-call target.
- Priority target.
- Final protective fire.
POINT TARGET

Less than 200 meters wide.
CONVERGE SHEAF
OPEN SHEAF
LINEAR TARGET

AB1000

250-500 meters
RECTANGULAR TARGET

KJ2000

Wider and longer than 250 meters.
CIRCULAR TARGET

Center grid and a radius.
FINAL PROTECTIVE FIRE

- Immediately available.
- Prearranged barrier of fire.
- Priority target.

AB3000  FPF

B/1-7
GROUP OF TARGETS

Simultaneous Attack

A1B

AB2000

AB2001

AB2003

Two or more targets
SERIES OF TARGETS

Fired in a predetermined time sequence.
SUMMARY

- Mission of field artillery.
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