# Ft. Gordon Range Control Center
BLDG. 482
N. Range Road
Ft. Gordon, GA 30905

## M16A2, 25m Zero and Qualification Range

Standing Operating Procedures (SOP)

1 JAN 02

# Fort Gordon Range Control Mission

**TO SUPPORT THE COMMANDERS INTENT BY SCHEDULING, ADVISING, AND ASSISTING TRAINERS IN PROVIDING HIGHLY REALISTIC TRAINING WITHOUT COMPROMISING SAFETY. MONITOR THE ENVIROMENTAL IMPACT OF TRAINING ON FORT GORDON. CONDUCT CERTIFICATION TRAINING TO THE UNIT CADRE**.

# Administrative Procedures

**Physical Location**: Range 7 is physically located on N. Range Road.

**Grid location:** LS 85679365

**Type of Range:** Range 7 is primarily used for:
(1) **25 meter** zero
(2) **25 meter** Alternate "C" qualification (Only if the Modified Record Fire Range is not available FM 23-9).

**Types of Weapon & Ammunition Authorized**:
**Weapons:**
a. M16A1
b. M16A2
c. M4 Carbine
**Ammunition:**
a. 5.56mm Ball only

**Scheduling Range**: This range is scheduled through the Range Facility Management Support System (RFMSS). Scheduling office is located at BLDG. #482 Range Control Headquarters. Telephone #706-791-5005/5008. DSN: 780-5005/5008. All ranges are scheduled by your S3 utilizing a RFMSS unit customer account. Non-account users may schedule via memorandum signed by units Battalion Commander or his/her representative.

**Classroom (RTC Building);** The RTC Building must be requested by the unit during the time of requesting for the range. The RTC building is not available on Friday's between the hours of 0800-1130 due to Range Certification Testing.

**OIC/RSO/MEDIC Range Check-in procedures:** OIC/RSO/MEDIC will show up at Range Control at the same time to sign for the range.

They will provide the following documents upon arrival at Range Control:
**OIC:** Current Range certification card
**RSO:** Current Range certification card
**MEDIC:** Current Medical certification CLS(Combat Life Saver) or higher and Medical Aid bag. A dedicated medical vehicle must be on site at all times.

**Day of Range**: OIC/RSO/MEDIC will arrive together to sign for the range. (Without these three and the proper documents the range will not be signed out)

**Range Firing Hours**: 0730-1630

**Range Availability**: Range 1is available seven days a week. Weekend firing and extended range hours, must be requested during the RFMSS scheduling phase. If you need to go past **1630 hours** to complete your firing, request permission as soon as possible to the range control OIC.

**Radio Communications**: You will receive two Motorola radios when you sign for the range. Radios must be used on Channel 1 and used only for communications with Range Control. Gate guards will not be issued one of the radios.

a. Request "hot" time
b. Make hourly radio checks every hour on the hour
c. Immediately "cease fire" anytime there is a problem on the range and contact Range Control.
d. Continuously monitor Range Control frequency
e. Request "cold" time
f. Request Range Control to come out and clear you off the Range
g. Use of the Radios for anything other than communicating with Range Control is strictly forbidden.

**Range Control Provides**:

a. PA system.

b. Red & White safety paddles for each line safety.
c. Metal rods for rodding soldiers on and ofF the range and firing line.
d. Ammunition Point building.
**e.** Range Tower
**f.** Range SOP, and briefing on range tower operation.

**Unit Provides**:

- Two (2) 1-A:10B:C [dry chemical] fire extinguisher.
- Combat lifesaver/Medic, dedicated emergency vehicle and medical aid bag.
- Plastic trash bags, toilet paper
- Hearing protection.
- Drinking water.
- TM and FM on all weapon systems being fired.
- FG REG 210-21(On Range Control Homepage)
- White tape for designating safety personnel
- Armorer's tool kit
- Weapon's cleaning equipment
- Life saver procedures
- Repair parts/spare weapons

**RECORD FIRE SCORECARDS:** Provided by the unit. The unit will maintain proper scoring and zero paperwork needed in use of the range.

**Ricochet Hazard:** It is of paramount importance that only authorized weapon systems, ammunition and target placement are utilized on this range.

**Target Placement:** Unit will place targets on the firing line. The OIC/RSO will ensure all weapons are cleared of rounds prior to anyone going down range.

**Firing Positions Authorized**:

**a**. **Prone**
**b.** **Prone Supported** (sand bags)
**c.** **Prone Unsupported**

**Courses of Fire Authorized:** The following courses of fire are authorized:

## - M16/ M4-

25 meter zero, 25 meter Alternate "C" qualification
FM-23-9

**Night Fire**: N/A

**MOPP Firing:** Maybe conducted on this range if coordinated with Range Control

**Other Uses**: No other uses authorized.

**Pyrotechnics Use**: Pyrotechnics are not authorized for use on the range.

**Special Range Planning Assistance**: Special range planning assistance is available from the Range Control staff. We will assist you in every way that we can to help make your training experience safe, realistic and effective. Pay us a visit - let's discuss your ideas.

### Basic Weapons Safety Procedures

The following basic weapons safety procedures will be observed:

a. When arriving and departing the range.
b. When arriving and departing the firing line.
c. While weapons are stacked with a guard posted within Arms reach.

## - M16, M4 -

Magazine removed
Bolt locked to the rear
Dust cover open
Weapon on safe
Barrel rodded

### WEAPONS SAFETY BRIEFING

It is the responsibility of the unit OIC to ensure that the RSO conducts a “basic weapons safety briefing” for all personnel, as a group, upon arrival at the range. Also, provide a briefing for all persons arriving after the initial briefing has been given.

**PMI Instruction/Concurrent Training**: Behind the firing line Dry- fire exercises, PMI (weapon drills, individual instruction, manipulation of weapons, aiming of weapons) will be supervised by an NCO and conducted in designated PMI areas only.

**Hearing Protection**: protection is required for all personnel, including workers and visitors, while within **50 meters** of the firing line.

**Tracer Ammunition:** No tracer ammunition will be used on this range. No exceptions.

## Standard Targets Provided

M16, M4 - Wooden frames with “E”-type silhouette available for zero and qualification target attachment.

**Medical Support:** There will be a medic or combat-lifesaver with an ambulance or designed vehicle on the range at all times during firing. A litter with aid bag complete will be on site.

**MEDEVAC Procedures**: For serious injury or illness the range OIC will contact Range Control @ 706-791-5005/5008 or by radio FM 42:000 to request Medical assistance from DDEAMC.

**Severe Weather Conditions:** For severe weather conditions the OIC will cease all fire when he/she identifies

lighting, thundering, and severe rain. Contact range control, ground weapons, and move soldiers to a safe area.

**Special Use Airspace (SUA):** Nonparticipating aircraft may not enter the area during the time the area is being used for the purpose designated. Precautions will be taken to insure the safety of aircraft operating in the airspace near the planned trajectory of all ammunition firing. The OIC/RSO will brief soldiers to stop firing in the event an aircraft becomes visible, and a hazard to the aircraft in flight exists.

**Gate Guard Requirements:** From time-to-time unauthorized persons or visitors may attempt to gain access to the range. The gate guard will be posted at all times while the range is occupied to aid in preventing the unauthorized access. At no time will the gate guard attempt to stop **RANGE CONTROL** or any **EMERGENCY** vehicle from gaining access to the range.

**Environmental Compliance**: Vehicle refueling operations will not be conducted on this range. All tactical vehicles will have a drip pan under the vehicle when it is parked. If a spill occurs report it to Range Control immediately. Bring plastic trash bags; take your trash with you. Using unit must clean the latrine prior to departing the range.

**Pyrotechnics, Blanks, CS Gas:** At **no time** will pyrotechnics, blanks, or CS gas be used on the range.

**Sleeping on Range:** Sleeping on the range is not allowed. It is pertinent that all soldiers stay awake and alert to help maintain a safe environment on the range.

**Animals on Range:** Unit mascots, such as **dogs**, are not allowed on the range.

**End of Firing Comments**: We encourage all **OICs** and **RSOs** to make constructive written comments on the second page of their **Range Checklist** at the completion of firing. Your input is valuable to this operation. Help us improve "your" range.

**Range Safety Violations**: It is not our intent to "find things wrong" with your range but rather to reduce and mitigate hazardous unsafe conditions. **OICs** and RSOs operating in an unsafe manner will cause their range to be closed - with the possibility of being decertified. All range safety violations will be forwarded to your higher headquarters and to the Garrison Commander through DPTM.

**What Does Unsafe Mean**: This can be explained quite simply: Operating your range in a manner that creates a dangerous situation for others; operating outside of weapons safety standards set forth in AR 385-63, USASC&FG Reg 210-21 this SOP and other applicable FM and TM guidelines.

**OIC/RSO/NCOIC Duties**: General duties of the unit **OIC**, **RSO**, and **NCOIC**. See AR 385-63, Chapter 4, 4-3, 4-5.

**OIC Duties**: The **OIC** [E7 or above] is responsible for activities that take place on all areas of the range not just the firing line. The **OIC** will stay on the range at all times.

**RSO Duties:** The RSO [**E6 or above**] is specifically responsible for weapons safety on all portions of the range.

**Line Safety NCO's:** [**E4(CPL) and above**] safety duties:
(1) Assist the **RSO** with firing line safety procedures.

(2) Observe and mitigate unsafe conditions on the firing line.
(3) Utilize red and white safety paddles for command and control.
(4) Rodding weapons on/off the range and firing line.
(5) Weapons safety checks.
(6) Bleacher safety.
(7) Providing safety related assistance for soldiers.

**NCOIC:** normally runs the range tower by announcing fire commands and taking directions from the **OIC**.

**Red Ammunition Amnesty Box**: Located in the motor pool at Range Control Headquarters.

This box is not intended for unit trash, brass or ammunition that is to be turned back into the ASP.

**Munitions:** Distribute small arms ammunition to troops only on the ready line or firing line. Cover all ammunition to protect it from the elements and direct rays of the sun. When any round or item of ammunition has malfunctioned further use of rounds or items will be suspended. The OIC/RSO will turn in the LOT #, DODIC, and number of unserviceable rounds to the Post Ammo Manager located at range control.

**Munitions Amnesty Turn in Policy**: Range Control will arrange Explosive Ordinance disposal support. Contact Range Control fire desk at 706-791-5005/5008 or by radio FM 4200. If you cannot contact Range Control, call the MP desk at 706-791-4380.

**Fire-Fighting in Training Areas:** Because fire potential is so great at Fort Gordon, all field units will be prepared to assist in fighting any fire which might occur. The OIC of firing issues an order to cease-fire, notify Range Control, move soldiers to a safe area, and take all commands from range control. At no time will soldiers enter the

impact area to fight the fire, unless under the supervision of the fire department, or forestry. This is a year round requirement.
upon discovering a fire outside the impact area, contact Range Control. The unit commander/OIC of an exercise will commit personnel and equipment available to fighting the fire, without soldiers being in any danger, and will continue to fight the fire until properly relieved.

## HIGH HAZARD IMPACT AREA

At no time will soldiers enter into a high hazard impact area (Artillery Impact Area). A high hazard impact area is permanently designated within the training complex and used to contain sensitive high explosive ammunition and explosives and the resulting fragments, debris, and components. High hazard impact areas are normally established as part of dedicated impact areas where access is limited and strictly controlled due to the extreme hazard of DUD ordnance (i.e., 40mm HE and other highly sensitive ammunition and explosives.

**IF YOU HAVE ANY QUESTIONS PERTAINING TO THIS SOP PLEASE CONTACT RANGE CONTROL AT 706-791-5005/5008. DSN 780-5005/5008.**

**Ramtahal, Ramdeo**
**MSG, USA**
**Range Control OIC**

Range7.obd

SOP

# TOWER COMMANDS

1) IS THERE ANYONE DOWN RANGE? IS THERE ANYONE DOWN RANGE? THE RANGE IS NO LONGER CLEAR.
2) FIRERS, STAND BEHIND YOUR FIGHTING POSITION.
3) FIRERS, GET INTO THE FIGHTING POSITION.
4) WATCH YOUR LANE AND IDENTIFY THE TARGETS IN YOUR LANE. (RAISE ALL TARGETS)
5) FIRERS, ASSUME A GOOD SUPPORTED FIRING POSITION.
6) COACHES, ISSUE THE FIRER A 20 ROUND MAGAZINE.
7) LOCK AND LOAD ONE 20 ROUND MAGAZINE.
8) IS THE FIRING LINE CLEAR ON THE LEFT?
9) IS THE FIRING LINE CLEAR IN THE CENTER?
10) IS THE FIRING LINE CLEAR ON THE RIGHT?
11) THE FIRING LINE IS NOW CLEAR.
12) FIRERS, ROTATE YOUR SELECTOR LEVEL FROM SAFE TO SEMI, AND WATCH YOUR LANE.
13) CEASE FIRE, CEASE FIRE, CEASE FIRE.
14) SAFETIES, ENSURE THE BOLTS ARE LOCKED TO THE REAR, THE WEAPON IS CLEARED AND PLACED ON SAFE.
15) PLACE YOUR WEAPON IN THE V-NOTCH STAKE.
16) FIRERS, EXIT TO THE REAR OF THE FIGHTING POSITION.
17) FIRERS, ASSUME A GOOD UNSUPPORTED FIRING POSITION.
18) IS THE FIRING LINE CLEAR ON THE LEFT?
19) IS THE FIRING LINE CLEAR IN THE CENTER?
20) IS THE FIRING LINE CLEAR ON THE RIGHT?
21) THE FIRING LINE IS NO LONGER CLEAR.
22) COACHES, ISSUE THE FIRER ONE 20 ROUND MAGAZINE.
23) FIRERS, LOCK AND LOAD ONE 20 ROUND MAGAZINE.
24) FIRERS, ROTATE YOUR SELECTOR LEVEL FROM SAFE TO SEMI, AND WATCH YOUR LANE.
25) CEASE FIRE, CEASE FIRE, CEASE FIRE.
26) LOCK AND CLEAR ALL WEAPONS AND PLACE THEM IN THE V-NOTCH STAKE.
27) SAFETIES, ENSURE THE BOLTS ARE LOCKED TO THE REAR, THE WAEPON IS CLEARED AND PLACED ON SAFE.

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND
Fort Monroe, Virginia 23651-5000

TRADOC Regulation
No. 350-29

31 December 1987

Training
# PREVENTION OF HEAT AND COLD CASUALTIES

Supplementation of this regulation is permitted.
However, proposed supplements must be submitted
to HQ TRADOC, ATTN: ATTG-I, for approval.


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APPENDIX A. SAMPLE HEAT INJURY PREVENTION CARD..... A-1
B. SAMPLE COLD INJURY PREVENTION CARD..... B-1
C. SAMPLE WIND CHILL CARD..... C-1


1. Purpose. To prescribe policy and provide guidance to assist commanders in preventing heat and cold injuries.

2. Applicability. This regulation applies to all Active Component (AC) and Reserve Component (RC) training conducted at service schools, Army training centers (ATC), or other training activities under the control of HQ TRADOC,

3. Responsibility. Commanders and supervisors at all levels are responsible for protecting soldiers and civilian personnel from heat and cold injury,

4. General. Extremes in weather conditions pose additional problems to our training efforts and increase the risk of heat and cold injury, Successfully preventing climatic casualties depends largely on educating personnel and applying methods to reduce exposure. Additionally, to prevent heat and cold

injuries, commanders must develop procedures to alert individuals of heat stress and windchill conditions and adopt techniques to reduce the susceptibility of personnel to climatic injury.

5. Recognition and treatment. Commanders and supervisors must ensure every individual who may be exposed to unaccustomed environmental conditions is informed of the potentially serious results of climatic injuries and how to recognize and treat those injuries if they occur. The U.S. Army Training and Audiovisual Support Center (TASC) has available for use pocket-size guides for identification, first aid treatment, and preventive measures for heat (GTA 8-5-45 (appendix A)) and cold (GTA 8-6-12 (appendix B)) injuries.

a. Heat injuries that commanders should be particularly concerned with include heat cramps, heat exhaustion, and heat stroke. The symptoms and treatments for these heat injuries are listed below.

(1) Heat cramps. Heat cramps result primarily from excessive loss of salt from the body. This condition occurs when individuals who have been actively sweating don't replace the salt lost in their sweat.

(a) Symptoms. Painful contraction of muscles (normally the extremities and abdominal muscles). Body temperature is normal unless heat cramps are accompanied by heat exhaustion.

(b) Treatment. Heat cramps are promptly relieved by replacing the salt lost from the body. Move victims to a shaded area, loosen their clothing, and make them slowly drink at least one canteen of salted water (l/4 teaspoon of salt per quart of water). If salt is not available, use plain water.

(2) Heat exhaustion. Heat exhaustion occurs as a result of excessive loss of water and salt from the body.

(a) Symptoms. Profuse sweating, headache, tingling sensations, paleness of skin, shortness of breath, palpitations, trembling, nausea, and vomiting. The skin will be moist and cool; the pulse will be rapid; and the body temperature will be normal or slightly below normal. Individuals with heat exhaustion may also act slightly confused or may momentarily lose consciousness.

(b) Treatment. Move victims of heat exhaustion to a shaded area, loosen their clothing, and elevate their feet to promote the return of blood to their heart. Make them drink at least one canteen of salted water (1/4 teaspoon of salt per quart of water). Recovery is usually prompt. However, individuals suffering from heat exhaustion will be assigned to light duty for 24 to 48 hours following their recovery.

(3) Heat stroke. HEAT STROKE IS A MEDICAL EMERGENCY WITH A HIGH MORTALITY RATE. This condition, caused by overexposure to the sun or heat, results from a breakdown of the body's ability to control its temperature.

(a) Symptoms. Extremely high body temperature, sudden loss of consciousness, convulsions, delirium, headache, dizziness, weakness, and nausea, Sweating is absent in the typical case, and the skin is hot, dry, and flushed. Pulse and respiration are rapid.

(b) Treatment. Lowering the victim's body temperature as rapidly as possible is the most important objective in the treatment of heat strokes. Remove the patient's clothes, and, if any source of cool water or ice is nearby, immerse the victim in it. Otherwise, sprinkle water over the patient and fan the patient to hasten the water evaporation. Transport victims of heat stroke to the nearest medical facility as soon as possible. While awaiting transportation, keep patients in the shade with their feet elevated. If they are conscious, make them drink at least one canteen of salted water (1/4 teaspoon of salt per quart of water). Continue efforts to reduce body temperature while transporting victims.

b. Cold injuries are classified as nonfreezing (trench/immersion foot/ and hypothermia) and freezing (frostbite). Symptoms and treatments for cold injuries are listed below.

(1) Trench/immersion foot. Immersion foot or trench foot is an injury that results from fairly long exposure of the feet to wet conditions at temperatures from approximately 50 to 32 degrees fahrenheit. Inactive feet in wet socks and boots or tightly laced boots impair circulation and are even more susceptible to injury. Prolonged exposure can cause the feet to swell. Pressure closes blood vessels, cuts off circulation, and can lead to loss of parts of the feet.

(a) Symptoms. Feet are cold and reddish in color and have swelling, blistering, bleeding, and numbness.

(b) Treatment. Individuals with immersion injury should elevate and rewarm their feet gradually by exposing them to warm air. Do not moisten, massage, or apply heat or ice to feet with immersion injuries. Covering the patient with several layers of warm coverings is preferable to using extreme heat. Evacuate patients as soon as possible.

(2) Hypothermia. Hypothermia is a state in which core body temperatures of individuals are below normal because they are losing heat faster than they can produce it. General cooling of the entire body to a temperature below 95 degrees fahrenheit is caused by continued exposure to low or rapidly dropping temperatures, cold moisture, snow, or ice.





(a) Symptoms. As the body cools, the following progressive

stages of discomfort and impairment occur: shivering; faint pulse; mental confusion; slurred speech; glossy eyes; slow, shallow breathing; uncoordinated movements; unconsciousness; and irregular heart beat.

(b) Treatment. Since hypothermia is a medical emergency, prompt medical treatment is necessary. The victim's body must be rewarmed with an external heat source since the victim can't generate heat. Perform cardiopulmonary resuscitation (CPR), if necessary, and keep the victim dry and protected from the elements. Evacuate the victim as soon as possible.

(3) Frostbite. Frostbite is the injury to tissue caused from exposure to below freezing temperatures. Severe frostbite can result in loss of affected body parts such as fingers, toes, hands, or feet.

(a) Symptoms. Frostbite starts with a discoloration of the skin of the nose, ears, cheeks, fingers, or toes. This is followed by a tingling sensation for a short time and then numbness. The skin may briefly appear red for light skinned individuals or greyish for dark skinned individuals and then become pale or waxy white. Upon thawing, the signs vary with the degree of injury. Mild to moderate frostbite injury appears red and swollen, has blisters, and is painful. Severe frostbite injuries have blue-black discoloration, blood filled blisters, and an absence of pain.

(b) Treatment. Remove tight clothing or boots from the injured area. Warm the frozen body part by placing it next to the skin of another person. Keep the victim warm and covered to prevent further injury. Do not massage, expose to open fire, rub with snow, or soak injuries in cold water. Evacuate the victim to a medical treatment facility as soon as possible.

6. Heat injury prevention.

a. Reference 10e contains a comprehensive discussion of heat casualty prevention. Commanders, cadre, and other responsible officers and non-commissioned officers (NCO) must be able to identify environmental conditions under which adverse effects of heat are likely to occur. The Wet Bulb Globe Temperature (WBGT) Index and the Wet Globe Thermometer (WGT) are the best means of evaluating the degree of heat stress imposed by all environments. Commanders must use at least one of these indexes during all operations in heat and take measurements in a location which is the same as, or closely approximates, the environment to which personnel are exposed.

b. Heat conditions are classified by color (green, yellow, red, and black; in increasing order of heat stress according to Botsball (WGT) and WBGT readings. Commanders must adapt training/physical activity and uniform requirements to conform with the precautions for each heat condition listed on next page.





| HEAT | BOTSBALL (WGT) | WBGT | WATER INTAKE | **ACCLI-MATIZED |
|---|---|---|---|---|

| CONDITION | INDEX F | INDEX F | QTS/HR | WORK/REST | UNACCLIMATIZED |
|---|---|---|---|---|---|
| * | <80 | <82 | 1/2 | 50/10 | Use caution in planning extremely intense physical exertion. |
| GREEN | 80-82.9 | 82-84.9 | 1/2 to 1 | 50/10 | Use discretion in planning heavy exercise. |
| YELLOW | 83-85.9 | 85-87.9 | 1 to 1 ½ | 45/15 | Suspend strenuous exercise during the first 3 weeks of training. Activities may be continued on a reduced s scale after the 2d week. Avoid activity in the direct sun. |
| RED | 86-87.9 | 88-89.9 | 1 1/2 to 2 | 30/30 | Curtail strenuous exercise for all personnel with less than 12 weeks of hot w weather training. |
| BLACK | 88 & up | 90 & up | >2 | 20/40 | Suspend physical training and strenuous exercise. Essential operational commitments (e.g., guard duty) will not be suspended. |

* Mission Oriented Protective Posture (MOPP) or body armor adds 10 degrees fahrenheit to the Botsball or WBGT index.

** An acclimatized soldier is one who has had progressive degrees of heat exposure and physical exertion for about 2 weeks. These work/rest periods do not apply to soldiers in MOPP gear or body armor.

c. The following actions, if emphasized by the commander, will reduce the risk of heat injury:

(1) Training. Give classes on heat injury recognition, treatment, and preventive measures annually to cadre and to soldiers in training. These classes will stress the causes of heat injury, the potentially serious result, first aid treatments, and the importance of water consumption in preventing heat injury. Briefings for commanders and supervisors will also include discussions on the following topics:





(a) Past experience with heat injury at the installation.

(b) The need for acclimatization and careful scheduling of

physical activities.

(c) The recognition of personnel who are at increased risk of heat injury (e.g., those with prior heat injury, current illness, recent immunization, obesity, and those who take medication).

(d) Use of the WBGT and WGT indexes.

(2) Use of the buddy system. Soldiers do not always recognize or react to their own early symptoms of heat injuries. They must be taught to observe their buddies for evidence of heat stress.

(3) Acclimatization to heat. Acclimatization is acquired by working in hot environments for gradually increasing periods of time on a daily basis over a period of about 2 weeks. Schedule training programs to provide for increasingly longer periods with alternating rest periods for personnel who are climatically unseasoned to heat. Commanders must take advantage of the cooler hours of the day when it is necessary to accomplish work during the acclimatization period.

(4) Water intake. Adequate water intake is the single most important factor in avoiding heat injury. An individual subjected to high heat stress may, through sweating, lose water in excess of one quart per hour. Water loss must be replaced, preferably by periodic intake of small amounts of water throughout the work period. Thirst is not an adequate stimulus for water intake. Therefore, commanders must require soldiers to drink water to prevent dehydration. Commanders must enforce an unlimited water drinking policy, particularly during times of increased physical stress.

(5) Salt replacement. In addition to water, sodium chloride is lost in sweating. While the diet ordinarily contains an adequate amount of salt, additional salt may be provided cautiously during the first few days of exposure to heat, especially in the case of unacclimatized individuals. Salt loss tends to be greater during acclimatization than after acclimatization. Using extra salt in cooking and on the plate will meet most requirements. Avoid excessive intake of salt, since it may cause increased thirst and incapacitating nausea.

(6) Scheduling work/training. Commanders must schedule activities to fit the climate, the physical condition of personnel, and the military situation. Schedule intense physical activity during the cooler hours of the day and avoid scheduling work in direct sunlight on hot days when possible. Commanders must closely supervise their soldiers to complete training requirements with minimum hazard.





(7) Physical conditioning. The general physical condition of the individual has a significant bearing on the reaction to heat stress. The risk

of heat injury is much higher in overweight, unfit persons than in those of normal weight. Commanders must exercise special care where such persons are exposed to high temperatures. Since one attack of either heat stroke or severe heat exhaustion may predispose to a second, commanders must identify individuals who have experienced previous heat injury and exercise caution in exposing them to subsequent heat stress.

(8) Clothing. Clothing reduces the exposure of the body surface to solar radiation; however, at the same time, it decreases the movement of air over the skin. To take full advantage of its benefits and minimize its disadvantages, clothing should be loose fitting, especially at the neck and wrists. Commanders may authorize exceptions to the prescribed wear of the Battle Dress Uniform (BDU) to protect troops and maintain efficiency. During heat condition "yellow," commanders will have soldiers unblouse trousers during strenuous physical activity or exposure to heat. Commanders will require soldiers to remove their jackets during strenuous physical activity or exposure to heat in heat categories "red" and "black." However, commanders must avoid exposing soldiers to intense solar radiation for extended periods of time (>1 hour).

d. Do not use water sprays to cool down soldiers in training (except as a first aid treatment for heat stroke casualties). This does not prevent heat injuries. The temporary cooling effect achieved through spraying may in fact increase core body temperature and intensify heat injuries.

7. Cold injury prevention.

a. Prior planning and adequate training are essential to minimize cold injury casualties. Reference 10d contains a detailed discussion on proper measures for preventing cold injuries. Commanders, cadre, and other responsible officers and NCOs must be familiar with environmental conditions (such as temperature, wind, humidity, and ground surface conditions) that influence the risk of cold injury. They should know how to use the wind chill chart in table 1 of reference 1Od. A pocket size wind chill card (GTA 8-5-40 (appendix C)) is available for use through TASC.

b. Commanders must establish appropriate guidelines on training/physical activity, uniform wear, and troop support requirements to conform with the precautions for each wind chill level listed below.

| WIND CHILL (Degrees Fahrenheit) | PRECAUTIONS |
|---|---|
| 30 and below | Alert personnel to the potential for cold injury. |





| WIND CHILL (Degrees Fahrenheit) | PRECAUTIONS |
|---|---|
| 25 and below | Leaders inspect personnel for wear of cold weather clothing. |

| | |
|---|---|
| | Provide warm-up tents/areas and hot beverages. |
| 0 and below | Leaders inspect personnel for cold injuries and emphasize that buddies must also check each other.<br><br>Increase the frequency of rotating soldiers exposed to wind chill conditions to warming area. |
| -20 and below | Curtail all but mission essential operations where soldiers are exposed to wind chill conditions. |

c. Effective cold injury prevention programs must include the following:

(1) Training. Give classes on cold injury recognition, first aid, and preventive measures annually to all cadre and soldiers in training.

(2) Use of the buddy system. Soldiers do not always recognize or react to their own early symptoms of cold injuries. They must be taught to observe their buddies for evidence of overexposure to cold.

(3) Clothing. The chain of command must ensure that soldiers are issued serviceable, properly fitting clothing and footgear for cold weather. Additionally, commanders must emphasize that preventing cold injuries depends on wearing clothing properly. Soldiers should be encouraged to wear as little as possible, consistent with the weather. (It is better for the body to be slightly cold and generating heat than excessively warm.) Clothing should be clean, dry, loose fitting, and worn in layers. Layering clothing provides layers of air to insulate the body and permits good circulation of the blood. Dirty clothes conduct heat more rapidly and afford less protection from the cold. Moisture causes clothing and footgear to lose their insulating qualities. Encourage soldiers to remove some layers when they are exposed to heat or performing any physical activity to prevent perspiration and subsequent chilling.

(4) Scheduling work/training. Commanders must tailor schedules to fit weather conditions by scheduling activities requiring exposure to cold as the wind chill factor increases and frequently providing warm-up breaks.



(5) Physical conditioning, The general physical condition of soldiers has a significant bearing on their susceptibility to cold injury.. Physical fatigue contributes to apathy, inactivity, personal neglect, and carelessness. These lead to loss of heat production and retention and increase the risk of cold injury. Soldiers with prior cold injuries have a higher than normal risk of subsequent cold injuries. Commanders must ensure soldiers maintain their

self-discipline in cold weather to protect themselves from cold injury, Additionally, commanders must identify soldiers with previous cold injuries and exercise caution in exposing them to hazardous wind chill conditions.

(6) Exercise. Commanders must encourage physical activity in cold weather, Activity of large muscle groups of the shoulders, trunk, and legs is required in order to generate and maintain body heat. When the situation prohibits such gross activities, frequent changes of positions; moving toes, feet, legs, fingers, arms, and hands; and, to a lesser extent, isometric contractions are less satisfactory alternatives. In such situations, some delay in heat loss can be accomplished by sitting or standing on insulating material rather than on cold or wet ground.

8. Evacuation. Commanders must establish a liberal policy of evacuation of injured personnel to the nearest medical treatment facility.

9. Reporting. In accordance with AR 40-400, commanders will use the Special Telegraphic Report RCS MED-16(R4) to report all heat and cold injuries requiring hospital admission or any significant clusters of heat or cold injuries that occur in one unit that do not require hospitalization. Commanders must furnish a copy of this report to Commander, TRADOC, ATTN: ATMD, Fort Monroe, VA 23651-5000.

10 . References.

a. Army Regulation 40-5, 1 Jun 85, Preventive Medicine.

b. Field Manual 21-10, 22 Dec 83, Field Hygiene and Sanitation.

c. Field Manual 21-11, 7 Oct 85, First Aid for Soldiers.

d. TB Med 81, 30 Sep 76, Cold Injury.

e. TB Med 507, 25 Jul 80, Occupational and Environmental Health: Prevention, Treatment, and Control of Heat Injury.

f. TRADOC Regulation 350-6, 13 Feb 87, Initial Entry Training Policies and Administration, 13 Feb 87.





APPENDIX A

SAMPLE HEAT INJURY PREVENTION CARD

**HEAT CRAMPS** **BASIC HEAT INJURY PREVENTION**

| SYMPTOMS | FIRST AID |
|---|---|
| Muscle cramps of the abdomen, legs or arms. | 1. Move the soldier to a shaded area and loosen clothing.<br>2. Dissolve ¼ teaspoon table salt in a (one quart) canteen of water. Have soldier slowly drink at least one canteen of this salt solution. If no salt is available, use plain water. DO NOT USE ADDITIONAL SALT. |

**HEAT EXHAUSTION**

| SYMPTOMS | FIRST AID |
|---|---|
| Profuse sweating with pale, moist and cool skin, headaches, weakness, loss of appetite, dizziness. May also have heat cramps, nausea, urge to defecate, chills, rapid breathing, tingling of the hands or feet and confusion. | 1. Move soldier to a shaded area, loosen or remove clothing; elevate legs, pour on water and fan if it is very hot.<br>2. Dissolve ¼ teaspoon table salt in a (one quart) canteen of water. Have the soldier slowly drink at least one canteen of this salt solution. If no salt is available, use plain water. DO NOT USE ADDITIONAL SALT. |

**HEATSTROKE**

| SYMPTOMS | FIRST AID |
|---|---|
| Headache, dizziness, stomach pains, confusion, weakness, may Suddenly lose consciousness, and may have seizures; skin is hot and may be dry; pulse and respiration are rapid and weak. Heatstroke is a medical emergency. | 1. Immerse in water or pour water on and fan.<br>2. Transport to the nearest medical treatment facility at once.<br>3. While awaiting or during transport move to a shaded area, remove clothing and boots, elevate legs; continue pouring on water and fanning; massage the skin. If conscious, have him drink the salt water as described under Heat Exhaustion. DO NOT USE ADDITIONAL SALT. |

1. Consider water a tactical weapon. Reduce heat injury by forcing water consumption.

2. When possible, provide cooled water (50F to 60F) to enhance its taste and increase voluntary water consumption.

3. Drink one quart of water in the morning, at each meal, and before and during hard or strenuous work.

4. Take frequent drinks since they are more effective than drinking the same amount all at once. Larger soldiers need more water

5. The use of salt tablets for replacement of salt lost through sweating is not recommended. An adequate salt intake is best achieved by eating three salt-seasoned meals per day.

6. When possible, schedule heavy workloads for the cooler hours of the day such as early morning or late evening.

7. Give frequent rest periods. Lower the workrate and workloads as the heat condition increases.

8. When possible, workloads and/or duration of physical exertion should be less during the first days of exposure to heat: then they should be gradually increase to allow acclimatization.

# APPENDIX B

## SAMPLE COLD INJURY PREVENTION CARD

GTA 8-6-12
AUGUST 1985

**ADVERSE EFFECTS OF COLD**
**CAUSE AND SYMPTOMS**

**FREEZING INJURY (FROSTBITE).**

a. Cause: EXPOSURE TO BELOW FREEZING TEMPERATURES,

COMMONLY ASSOCIATED WITH DAMP CLOTHING OVER THE INVOLVED BODY PART.

b. Symptoms: Skin is waxy, white/gray and numb while frozen. Upon thawing, the signs vary with the degree of injury as follows:

1. Mild-Moderate: Redness, swelling, clear blisters, pain.
2. Severe: Blue-black discoloration, blood-filled blisters, early absence of pain.

**NONFREEZING ("TRENCH FOOT," "IMMERSION FOOT").**

a. Cause: PROLONGED EXPOSURE TO COLD (USUALLY 32o -50o F) AND WETNESS.

b. Symptoms: Redness, swelling, blistering, bleeding, numbness.

SEE REVERSE FOR PREVENTION AND FIRST AID

HEADQUARTERS, DEPARTMENT OF THE ARMY

**PREVENTION**

**TO KEEP WARM REMEMBER THE WORD C-O-L-D**

**C – Cleanliness and Care –** Feet, socks, and clothing are warmer when clean. Proper care of the feet is imperative.

**O -- Overheating –** Wearing too much clothing causes overheating, perspiration, dampness and coldness.

**L -- Layers and Looseness –** Clothing in loose layers assures air spaces which hold body heat. Adjust the number of layers to the temperature and activity. Loose-fitting clothing insures circulation and insulation.

**D -- DAMPNESS –** A wet garment is a cold garment. Wear the field jacket as a windbreaker and to repel water.

**FIRST AID TREATMENT**

Get off your feet, change to warm, dry clothing, and seek medical assistance. DO NOT RUB, AND DO NOT USE SNOW.

**SEE REVERSE FOR CAUSE AND SYMPTOMS**

DISTRIBUTION: US Army Training and Audiovisual Support Center (TASC).



APPENDIX C
SAMPLE WIND CHILL CARD

HOW TO USE THE WIND CHILL CHART

Find the windspeed in the left-hand column, then read across to the column under the actual temperature. This number is the equivalent temperature which would be acting on any exposed skin. For example, if the wind is

blowing at 20 mph (32 kph) and the actual temperature is 10° F (-12° C), the effect on bare skin would be the same as a temperature reading of -25° F (-32° C) under calm conditions. Any movement has the same cooling effect as the wind. Running, skiing, or riding in an open vehicle must be considered in using the wind chill chart.

* GPO : 1983 0 - 417-503

The proponent for this regulation is the Office of the Deputy Chief of Staff for Training. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications) through channels to Cdr, TRADOC, ATTN: ATTG-I, Fort Monroe, VA 23651-5000.

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# CONDUCT OF TRAINING

In the conduct of marksmanship training, the instructor/trainer first discusses an overview of the program to include the progression and step-by-step process in developing firing skills. (This can be accomplished by showing Once the soldier realizes the tasks and skills involved, he is ready to begin. He receives preliminary rifle instruction before firing any course. Also during this initial phase, an understanding of the service rifle develops through review.

## MECHANICAL TRAINING

Mechanical training includes characteristics and capabilities, disassembly and assembly, operations and functioning, serviceability checks, and weapons maintenance. It also stresses the performance of immediate action to clear or reduce a stoppage, and the safe handling of rifles and ammunition. Examples of mechanical training drills, along with tasks, conditions, and standards, are provided in. These examples are also used for initial entry training at the Army training centers. Mechanical training must encompass all related tasks contained in the soldier's manual of common tasks (SMCT) to include the correct procedures for disassembly, cleaning, inspection, and reassembly of the rifle and magazine.

Serviceability inspections and preventive maintenance checks must be practiced to ensure soldiers have reliable weapons systems during training and in combat. Technical information necessary to conduct mechanical training is contained in the soldier's operator's manual (Ml6Al - TM 9-1005-249-10; M16A2 - TM 9-1005-319-10). Once the basic procedures have been demonstrated, soldiers should practice the mechanical training skills under varied conditions to include during nighttime, and in MOPP and arctic clothing.
As part of mechanical training, soldiers must be taught and must practice procedures for properly loading ammunition into magazines to include both single loose rounds and speed loading of 10-round clips.

Emphasis on maintenance and understanding of the rifle can prevent most problems and malfunctions. However, a soldier could encounter a stoppage or malfunction. The soldier must quickly correct the problem by applying immediate action and continue to place effective fire on the target.
**Immediate-action procedures** contained in Chapter 2 and the operator's technical manual should be taught and practiced as part of preliminary dry-fire exercises, and should be reinforced during live-fire exercises.
**Immediate-action drills** should be conducted using dummy ammunition (Ml99) loaded into the magazine. The soldier chamber the first dummy round and assume a firing position. When he squeezes the trigger and the hammer falls with no recoil, this is the cue to apply the correct immediate-action procedure and to refire. Drill should continue until soldiers can perform the task in three to five seconds.

The word **SPORTS** is a technique for assisting the soldier in learning the proper procedures for applying immediate action to the M16Al and M16A2 rifles.

First, **THINK**, then:

**S**lap up on the bottom of the magazine.

**P**ull the charging handle to the rear.

**O**bserve the chamber for an ejection of the round.

**R**elease the charging handle.

**T**ap the forward assist.

**S**queeze the trigger again.

**NOTE:** When slapping up on the magazine, be careful not to knock a round out of the magazine onto the line of the bolt carrier, causing more problems. Slap hard enough only to ensure the magazine is fully seated.

**DEPARTMENT OF THE ARMY**
**HEADQUARTERS, U.S. ARMY SIGNAL CENTER AND FORT GORDON**
**Fort Gordon, Georgia 30905-5735**

**USASC&FG Regulation No. 210-21** **30 July 2001**

**Installations**
# RANGE REGULATION

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**Summary.** This regulation provides procedures for the safe use of the ranges and training areas on Fort Gordon.

**Applicability.** This regulation applies to any person, military, or civilian who uses the training areas and ranges on Fort Gordon. All units utilizing any range/training area facility must possess, read, understand, and comply with this regulation and familiarize themselves with Army Regulation (AR) 385-63.

**Supplementation.** Supplementation of this regulation is prohibited unless specifically approved by Commander, United States Army Signal Center and Fort Gordon (USASC&FG), ATTN: ATZH-DP.

**Suggested improvements.** The proponent of this regulation is the Directorate of Plans, Training, and Mobilization (DPTM). Users are invited to send comments and suggested improvements on Department of the Army (DA) Form 2028 (Recommended Changes to Publications and Blank Forms) to Commander, USASC&FG, ATTN: ATZH-DP, Fort Gordon, Georgia 30905-5735 and/or submit DA Form 1045 (Army Ideas for Excellence Program (AIEP) Proposal) to the installation AIEP coordinator.

**Administrative note.** The words "he" or "his" as used in this publication are intended to include both the masculine and feminine genders.

**Availability.** This regulation is only available at the USASC&FG publications website at: http://www.gordon.army.mil/doim/imc/Forms.htm.

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***This regulation supersedes USASC&FG Regulation 210-21, 2 May 1994.**

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## Section I. General

**1. Purpose.** To establish procedures to ensure personnel safety during training and special activities conducted on the Fort Gordon Military Reservation. It is designed to facilitate combat realism in training, to maximize the availability of safe training areas and facilities, to minimize safety hazards, and to eliminate unsafe practices.

**2. Scope.** This regulation:

a. Establishes standard terminology pertaining to range and training area facility operations.

b. Prescribes procedures for the safe conduct of training on ranges and in training area(s) facilities.

c. Prescribes procedures for the scheduling of ranges and training areas and/or facilities.

d. Provides a general description of ranges and training areas and facilities available for unit training.

**3. References.** Required and related publications and prescribed and referenced forms are listed in appendix A.

**4. Explanation of abbreviations and terms.** Abbreviations and special terms used in this regulation are explained in the glossary.

## Section II. Responsibilities

**5. Directorate of Plans, Training, and Mobilization (DPTM).** The DPTM is responsible for:

a. Overall supervision of installation ranges and training areas.

b. Establishing policies and procedures governing the use of installation ranges and training areas.

c. Ensuring adequate staffing of Installation Range Control Branch.

d. Ensuring compliance with Environmental and Natural Resources Federal, State, and local regulatory requirements. Coordinating with Environment and Natural Resources Management Office (ENRMO), Directorate of Public Works (DPW) on all compliance issues.

**6. Range Control.** The Chief, Range Control has overall responsibility for the safe conduct of training on the installation's ranges and training areas. The Chief, Range Control will:

a. Ensure that specific standard operating procedures are established, published, disseminated, and used by occupying units for each range and firing point designated for the conduct of live-fire training.

b. Ensure Range Control operation center conducts Weapons Range and Training Area block of instructions, for certification of unit personnel. Operations will brief each occupying unit's designated officer in charge (OIC)(E-7 and above) and range safety officer (RSO)(E-6 and above) prior to the unit's use of the range or training area. The training will consist, but is not limited to: Range operations, environmental concerns, and Post safety requirements.

c. Verify that each individual unit has its own emergency medical support available. This support will be as a minimum, one soldier per active range who is certified as a "combat lifesaver". Each soldier acting as a "combat lifesaver" will have their own medical aid bag, vehicle, litter, and radio communications. All medical personnel will report to Range Control, along with the OIC and RSO, prior to occupying the range.

d. Coordinate and obtain use of Restricted Area, R3004, from the Federal Aviation Administration (FAA) (Macon and Atlanta Center, Georgia (GA)) in accordance with (IAW) AR 95-2 current Joint Use Letter of Agreement.

e. Ensure the current range safety fans are prepared IAW AR 385-63 and maintained in Range Control for each range used for live-fire training.

f. Ensure that proper signs are posted for all impact areas and dud areas IAW AR 385-63.

g. Coordinate and function as the team leader of the installation investigation team for investigating malfunctions and accidents that occur on the ranges and training areas.

h. Arrange for the maintenance, operation, coordination, and safe use of training areas and ranges on this installation. Perform operator maintenance beyond the capability of the occupying unit. Review, forward, and continue follow-up action on all work orders.

i. Designate danger areas, and where/when roadblocks need to be manned by units using ranges and training areas.

j. Coordinate placement and manning of roadblocks with Directorate of Public Safety (DPS).

k. Ensure that all airborne operations are staffed through Plans, Operations, and Training Division, to include providing flight following procedures.

l. Coordinate with ENRMO, DPW concerning compliance with Federal, State, and local regulatory requirements. Immediately report all failures to comply with regulatory requirements by Range and Training Area users to ENRMO, DPW.

m. Report all accidents caused by firing of any weapon system(s) to the DPS representative immediately.

n. Provide access to ranges to accomplish environmental missions.

**7. Directorate of Public Works (DPW).** The DPW is responsible for:

a. Direct support and maintenance of all weapons ranges.

b. Grading and maintenance of all roads within the training areas complex.

c. Providing range and road right-of-way, and vegetation maintenance support, within the constraints of base support contract requirements, funds and equipment availability.

d. Maintenance and/or installation of electric power to ranges, installation of electric power sources will be approved by DPW.

e. Maintenance and/or installation of target devices, M30/M31A1 counter devices, and panel boards.

f. Providing for range and forest fire suppression and for seasonal controlled burns or prescription burning, as needed.

g. Maintaining Preston Drop Zone (DZ), to include cutting of trees, brushes, and grass and harvesting.

h. Turning off the electrical power lines that run parallel to the eastern edge of Preston DZ prior to airborne operations. Reestablish the power upon completion of the airborne operation.

i. Repair electrical target devices, M30/M31A1 counter devices, Machine Arcade Combat Simulator (MACS); target mechanism, and panel boards.

j. Provide environmental and natural resources management support, recommendations, and approvals concerning compliance, impact, mitigation, report and documentation under statutory requirements of Federal, State, and local regulation.

**8. Public Affairs Office (PAO).** The PAO will:

a. Inform local community of pending airborne operations, artillery firing, and air-to-ground operations prior to the commencement of exercise.

b. Provide coverage and/or coordinate support to affected units or commands involved in the operation, to include media relations.

**9. Directorate of Public Safety/Military Police Activity (DPS/MPA).** The DPS will:

a. Provide roadblocks and traffic control points at predetermined locations and time prior to airborne assault operations and artillery live fire exercises.

b. Provide crowd control at all spectator events.

c. Investigate violations of Uniform Code of Military Justice (UCMJ) and complete Serious Incident Reports (SIR).

d. Providing technical assistance and advice to the Chief, Range Control to ensure that range safety procedures are established and published IAW AR 385-63.

e. Providing staff assistance to Range Control upon request by the Chief, Range Control.

**10. Directorate of Health Services (DHS).** The DHS is responsible for providing the following:

a. Conducting periodic Combat Lifesaver training for qualified units assigned to Fort Gordon.

b. Coordinating with DPTM, Plans, Operations, and Training Division for training dates and times.

**11. Reserve Components Support Division (RCSD), DPTM.** The RCSD is responsible for:

a. Coordinating logistical support for the Army National Guard (ARNG), U.S. Army Reserve (USAR), Reserve Officers' Training Corps (ROTC), civilian organizations, and active duty units not located at Fort Gordon.

b. Coordinating and scheduling ranges and training areas for all units mentioned in paragraph 11a, above.

**12. Unit occupying site.** The unit occupying site is responsible for:

a. Compliance with range and training area operating procedures specified in this regulation and AR 385-63.

b. Appointing a range OIC who will ensure that their unit complies with the general operating and safety procedures and specific procedures established for the range being used (see paragraph 15, this regulation). Certification is an annual requirement.

c. Appointing a separate RSO for each range used. The RSO will ensure compliance with specific safety procedures established for their range. The RSO will not be assigned any other duties. Certification is an annual requirement.

d. Ensuring that the Range OIC and RSO obtain a range safety briefing prior to signing for range.

e. Providing DZ safety officer for airborne and/or air assault operations.

f. Coordinating for Combat Control Team for utilization of DZ.

g. Furnishing necessary details required for range operations, (i.e., water, toilet tissue*, etc.).*

h. Ensuring that all weapons are rodded, on and off the range, prior to removal from the range.

i. Ensuring that a complete police call of the range is conducted. When night fire is conducted, occupying unit will turn in all equipment to Range Control personnel, and at 0730 the following day, OIC and a detail will be present to clear the range.

j. Inspecting all weapons before firing to ensure they are functioning properly, lubricated as required, free of dirt and other obstruction, moisture, and carbon buildup in the chamber.

k. Signing for ranges and training areas prior to unit occupation. Units occupying training areas must telephonically verify with Range Control, training areas to be occupied not later than (NLT) 1 working day prior to unit occupation. All ranges and training areas will be signed for prior to occupation. Ranges and training areas will be signed for by a senior noncommissioned officer (NCO) (E-7 or above).

l. Ensuring units scheduled for a range or training area notifies Range Control 24 hours prior to any cancellation.

m. Ensuring all ranges and training areas are cleared by Range Control prior to departure. Units departing training areas when Range Control is closed must ensure areas are properly policed. Range Control will inspect areas on the following workday. Unit commanders will be notified and required to correct any deficiencies noted.

**13. Battalion commanders.** Battalion commanders will:

a. Ensure persons in their command who are detailed to perform Range OIC/RSO, training areas OIC/noncommissioned officer in charge (NCOIC), have read and understand this regulation and AR 385-63 prior to certification and testing at Range Control.

b. Ensure persons in their command who are detailed to perform Range OIC and RSO are trained and technically proficient on all weapon systems to be employed.

c. Prior to individual Range and Training Area certification, submit a memorandum to Range Control, signed by the Battalion Commander, verifying by name and social security number, that individual has read and understood regulations USASC&FG Regulation 210-21 and AR 385-63, and is technically proficient on the weapon systems to be employed.

d. Ensure ranges and training areas are scheduled 45 days in advance and according to unit mission. Environmental Checklist will be submitted 45 days prior to occupying a training area. Do not schedule ranges and training areas that will not be used. Immediately cancel all ranges and training areas that will not be needed.

e. Ensure all ranges and training areas are signed for prior to unit occupation.

**14. Officer in charge.** The OIC will:

a. Possess a thorough knowledge of this regulation and weapon system(s) to be employed.

b. Sign for range prior to occupying the range or training area. The RSO and combat lifesaver (medic) will accompany the OIC when in-processing at Range Control. The OIC will be an E-7 or above.

c. Report any unsatisfactory or unsafe conditions to Range Control and ensure that any unsafe acts be corrected before firing status is requested.

d. Comply with the provisions of USASC&FG Regulation 210-21, AR 385-63, and other appropriate regulations and directives.

e. Ensure safety compliance on the range.

f. Designate necessary RSO(s) and safety NCOs (corporal (CPL) and above) to supervise and implement required safety procedures. There must be at least one RSO per active range. The RSO will not be assigned any other duties.

g. Display range streamers during firing. During hours of darkness, ensure the scarlet streamers are supplemented with blinking red lights.

h. Provide security and ensure safe use of ammunition. All unused ammunition (high explosive ball or blank) fuses, explosives, and pyrotechnics will be returned to the ammunition supply point (ASP). Under no circumstances are ammunitions and explosives to be stored unguarded or unattended outside an approved ammunition storage area. All misfires and/or dud rounds, except small arms, will immediately be reported to Range Control.

i. Supervise the handling of all ammunition after delivery to the range area to include ensuring live ammunition and brass are kept separate, and ammunition is issued only to firers on the firing line or ready line.

j. Account for all unexpended ammunition and explosives before leaving the range and ensure that no unauthorized personnel remove ammunition or brass from the range.

k. Give detailed briefing and instructions to be followed during the conduct of the exercise. Instruct soldiers and other personnel of their role in the exercise, including time events, safety limits, and other factors necessary for the safety of participants. Review safety measures whenever any change is made in the nature of the exercise. Brief all personnel on actions to be taken in the event of an injury. Also brief personnel concerning troop limits, dud areas, and danger of picking up or kicking duds.

l. Explain the characteristics of the type of ammunition to be used. This explanation is accomplished in such language as to leave no doubt in the minds of the firers about the type, potency, bursting radius, or other effect of the ammunitions. The soldiers are instructed to check the issued material to make certain that it is the type covered in the explanation.

m. All personnel will wear kevlar helmets while on ranges employing explosive and fragmentation type munitions, ranges requiring movement while under firing, and ranges employing overhead fire. In addition, all personnel in the target pits will wear kevlar helmets.

n. Visually reconnoiter down range before firing to determine if personnel are within the observed limits of fire.

o. Ensure that all required roadblocks, barriers, and guards are in position before firing.

p. Report accidents, injuries, malfunctions, missing persons, and fires as prescribed in this regulation.

q. Inspect and rod all weapons before and after firing to ensure weapons are clear.

r. Open and close the range IAW guidance given by Range Control and procedures outlined in the regulation.

s. Ensure all weapons not in use, are field stacked behind the bleachers, and are on SAFE, magazines removed, bolt placed to the rear, and the port cover open with a guard present.

t. Maintain a high state of police on the range at all times.

u. Ensure all persons in the noise hazard area of the range use hearing protection when firing is being conducted and that hearing protection devices are available for issue to all visitors who come to the range.

v . Ensure all left-hand firers use brass deflectors.

w. Maintain communication with Range Control at all times (see section VII, this regulation).

x. Ensure checklist items 1 thru 17 are completed prior to requesting opening time from Range Control.

**15. Range Safety Officer.** The RSO will:

a. Be an E-6 (staff sergeant (SSG)) or above.

b. Be required to be on the firing line at all times while range is in hot status.

c. Ensure there are enough safeties (1:5 day , 1:1 night fire).

d. Have no additional duties.

## Section III. Common Policies, Procedures, and Safety Requirements

**16. Restrictions.**

a. Access. Access to Fort Gordon range surface danger zones are carefully controlled and scheduled to provide maximum training utilization and maximize safe conditions. A surface danger zone is that area from the firing point out to and including the impact area.

(1) Access to impact areas is prohibited except when specifically authorized by the Chief, Range Control.

(2) In order to obtain maximum land utilization for both training and recreational activities, the following range access policy is in effect:

(a) Personnel participating in recreational activities are governed by the instructions contained herein, particularly as they pertain to ranges, duds, dud areas, impact areas, fires, roadblocks, fixed installations, and vehicle operations.

(b) USASC&FG Regulation 420-5 governs hunting, fishing, trapping, and horseback riding.

(3) Questions concerning exact limits of restricted, off limits, or surface danger areas will be answered at Range Control.

(4) Road guards and barricades will be temporarily placed on roads and trails in the range area to prevent access to danger areas. Road guards and barricades will not be bypassed without authorization of the Chief, Range Control.

(5) Unauthorized entry into surface danger areas, restricted areas, or off-limit areas is prohibited. Violators will be reported to the DPS for appropriate action.

(6) Training in wildlife food plot, pine seedling, and endangered species habitat areas is PROHIBITED.

(7) Privately owned vehicles (POVs) are not authorized on Ranges or Training Areas.

b. Firing restrictions.

(1) Firing of unfused projectiles on any Fort Gordon range is prohibited.

(2) All fired artillery rounds will be observed. When visibility is less than 1/2 mile, firing will cease unless radar is available to support the firing unit. All forward observers will have the safety fan for the unit they are supporting drawn on an overlay or map to ensure that rounds impact in the proper area.

(3) When personnel occupy any part of Surface Danger Area D as defined in AR 385-63, chapter 11, only lots of ammunition and components approved for overhead fire will be used. Shell improved capabilities munitions (ICM) and all mortar ammunition will not be fired over troops, or roads, which; are open to the public. (See section V, this regulation.)

(4) Shell illumination, white phosphorus, smoke, and all other pyrotechnic or incendiary devices will not be fired without the expressed permission of Range Control. Pyrotechnic or other incendiary devices will not be used where there is a possibility of starting a grass/forest fire or causing damage to equipment or vehicles. Powder burning details will contact Range Control prior to burning to determine if there are restrictions in effect concerning the burning of powder.

(5) Agent chlorobenzalmalonitrile (CS) will not be employed without the approval of Chief, Range Control. Furthermore, Agent CS will be employed only under the supervision of trained nuclear, biological, chemical (NBC) personnel. Unit commanders are encouraged to use good judgment and discretion prior to using CS or smoke devices in situations involving moving vehicles, or under blackout drive operations. Under no circumstances will Agent CS be used in any situation involving aircraft or under circumstances where CS could drift into areas outside installation boundaries. The use of Agent CS must be requested on the Unit Environmental Checklist for approval for use in a training area.

c. Environmental protection.

(1) Commanders at all echelons will ensure compliance with USASC&FG Regulation 420-7, Endangered Species Regulation, and AR 200-1, Environmental Protection and Enhancement.

(2) No live bushes or trees will be cut or damaged. Only foliage from dead trees on the ground will be used for camouflage. <u>Care will be taken to ensure soil is not stripped bare of vegetation</u>.

(3) All wheeled and tracked vehicles will use only established roads, trails, rating points, firebreaks. Tracked vehicles will avoid paved roads and will use tank trails/firebreaks. Vehicles

will not travel on unpaved shoulders or lawns. Use of ditches and shoulders for tank trails is prohibited. Off-road, cross-country shortcuts through trees or, across grass hay, wildlife plots, and planted areas are prohibited. New trails will not be established. Sharp turns by tracked vehicles, which cause damage to hard surfaced areas, is strictly prohibited. The above guidelines also apply to all private and recreational areas.

(4) Each unit or activity is responsible for cleaning up after completion of exercise or operation. Upon completion of training, the unit OIC/NCOIC will initiate a thorough police of the area to ensure that all spade holes, foxholes, sumps, etc. have been filled, and all track mounds leveled. All trash will be collected, removed from the field training areas and deposited in a dumpster.

(5) All ground disturbing activity to include foxholes, trench's, tank ditching, etc., is prohibited unless permission is granted from Range Control. Request for the ground disturbing activities must include grid coordinate and the number to be dug in the environmental forms.

(6) Burning, burying, or abandonment of garbage refuse, and rubbish including field and concertina wire, wooden pallets, and projectile fiber containers and other ammunition residue is prohibited. Commanders will ensure that the above materials are disposed of properly.

(7) Fuel sumps must be placed in such a manner to contain any fuel spillage. This can be done by digging a hole and lining it with plastic or by building up an area on the ground surface with sandbags with the use of a plastic liner. Size and depth of a sump constructed must be able to hold the amount of fuel stored. All fuel sumps, as a minimum, will have a 10-lb fire extinguisher, a shovel, and ax located within 50 feet of the sump.

(8) All fuel tankers will be grounded properly and use of an over flow container is mandatory when dispensing fuel.

(9) When petroleum, oils, and lubricants (POL) spills occur in any size, unit involved will immediately contact Range Control, who will contact ENRMO, DPW, 791-2327 during normal duty hours, after normal duty hours, spills should be reported to Fire Department, 791-2989.

d. Perimeter gates. All requests for access to perimeter gates will be forwarded to Range Control and DPW.

**17. Duds.** Range Control will be notified immediately. All personnel are warned NOT to pick up or to handle artillery projectiles, airplane flares, artillery simulators, or any ammunition or fragments that may be found. Any movement of a dud may cause it to explode. If duds of any kind are found, their locations will be marked, secured and reported at once to Range Control or the Center Duty Officer (CDO). A stake, branch, or any object which can be seen above the foliage of the immediate area containing the dud will be driven into the ground no closer than 10 yards from the dud. Engineer tape or piece of cloth will be securely fastened to the stake or object marking the location of the dud. The exact location of duds will be determined and reported by map coordinates or graphic representation. The removal of any material, component parts of projectiles, targets or other objects, is prohibited. The CDO will contact Range Control

or if Range Control cannot be contacted, the 723d Ordnance Company (Explosive Ordnance Disposal (EOD)). Fort Gillem, GA (DSN 797-5436) and the Signal Branch Safety Office, 791-3227.

**18. Explosive ordnance disposal.** Explosive ordnance disposal support will be arranged for by Range Control. Range impact clearance operations will be conducted by the 723d Ordnance Company EOD.

**19. Mines and explosive charges.** Responsibility of overall supervision for the preparation, placement, and firing charges of a demolition project will be assigned to the OIC who will:

a. Be present to personally supervise the demolition project.

b. Ensure that all connections are inspected before firing.

c. Inspect connections after firing to determine that all charges have been detonated.

d. Supervise the neutralization of all misfires.

e. Be aware of the following restrictions and requirements:

(1) No detonations will take place within 300 meters of any main or secondary road. Road guards will be posted and traffic halted.

(2) Fire fighting materials will be available at all times in blasting areas and will be posted immediately to suppress grass fires.

(3) The detonation OIC/NCOIC will be familiar with the provisions of AR 385-63, chapter 18, prior to reporting to the demolition area.

(4) During training which requires troops to maneuver in the vicinity of demolition pits, an additional individual will be assigned as a safety officer when the OIC/NCOIC responsible for detonating the charges cannot observe the proximity of troops to the demolition pits. During the training, either the safety officer or the OIC/NCOIC of detonation will be in a position to observe both demolition pits and maneuvering troops. The safety officer must be in constant contact with the detonations OIC/NCOIC in order to stop firing if a safety hazard develops. If an explosive charge does not detonate when fired provisions will be made to restrict any troop movement within the minimum safe distance for that particular charge until the charge is rendered safe. For example, the minimum safe distance for a 1-pound (1b) block of TNT is 50 meters. If the TNT fails to detonate, no one other than demolition personnel will be allowed within 50 meters of the charge until it has been rendered safe.

(5) Communication with Range Control will be established prior to the start of any demolition exercise.

(6) The following information will be required by Range Control from the OIC/NCOIC of detonation:

(a) Unit (if any).

(b) Radio telephone operator, detonation OIC/NCOIC, and safety officer.

(c) Number of personnel involved in the training.

(d) Actual time check in and check out with Range Control.

(e) Type of explosive (i.e., TNT). Grid coordinates of detonation.

(f) Exact explosive weight of each detonation.

(g) Number of explosions.

**20. Transporting explosives.** Explosives will be transported and handled only under-the direct supervision of competent and qualified personnel who are thoroughly familiar with the handling and safety requirements listed in AR 190-1, AR 385-63, AR 385-64, Technical Manual (TM) 9-1300-206, Field Manual (FM) 5-250, and in FMs of specified explosives.

**21. Aggressor actions.** Any unit or testing team using aggressor personnel for a field training exercise will comply with the following:

a. Aggressors will be dressed distinctively, to be easily recognized as aggressor.

b. All aggressor activity will be coordinated with OIC of the exercise/problem. Aggressor will not undertake any operation, which may create an unsafe situation.

c. Aggressor attacks will be executed according to a definite coordinated, planned schedule.

d. There will be an OIC or NCOIC of aggressors who shall be present at aggressor actions. His primary duty is to ensure each is conducted safely. Each safety representative is responsible for proper care and handling of ammunition issue within his assigned unit of responsibility. An inspection will be conducted to ensure that all cartridges are blank ammunition. The safety representative will ensure that no live ammunition is presented within area/unit of responsibility. The OIC/NCOIC:

(1) Will carry no weapon and will not actively participate in aggressor actions. He will ensure no actions are undertaken which are prejudicial to safety.

(2) Will ensure that blank adapters are securely fitted to individual weapons.

(3) Must have continuous radio contact with the exercise/problem director.

e. Actual body contact between aggressors and opposing unit personnel is prohibited. Such unsafe acts as actual fighting, rock throwing, using rifle butts, etc.-- will not be tolerated. A distance of 10 meters will be maintained between the exercise unit and aggressors.

f. No aggressor action will be undertaken in an area where live ammunition is being fired. This includes field artillery positions during period of live fire. No aggressor action will take place in artillery firing positions when powder increments are present.

g. Blank cartridges will not be fired at individuals.

h. All aggressor personnel will be accounted for by name at termination of an exercise.

**22. Medical support.**

a. All units utilizing Fort Gordon ranges and training areas must provide their own medical support with a dedicated medical (litter bearing) vehicle, litter and medical aid bag. Combat lifesaver must have current certification. A minimum of one combat lifesaver per using unit is required. A qualified medic must be present on any range using 50 caliber (cal) ammunition and above or fragmentary device. Additional combat lifesavers are recommended if more than one range is being used simultaneously. Qualified civilian medics, doctor, etc. may be utilized with proof of qualifications.

b. For emergencies, (aeromedical evacuation) from range location to Dwight David Eisenhower Army Medical Center (DDEAMC) will be available on an on call basis. Requests for aeromedical evacuation from range locations are to be relayed to Range Control who, in turn, will contact the 4th Platoon, 498th Medical Company (AA), Fort Benning, GA. Arrival time is approximately 90 minutes. To establish adequate preparations for evacuation, the following information is required:

(1) Pickup location and destination (grid coordinates with common name should be given, if available; (i.e., LS 009009, firing point India (I)).

(2) Number of patients.

(3) Urgency of mission. (Care should be employed, in determining urgency. Routine or non-emergency cases should utilize ground ambulance or organic transportation).

(4) Brief description of the patient's condition.

(5) Call sign and frequency at pickup point; if radio is available, or name of person to contact in the event aircraft is met.

(6) Any special equipment necessary (e.g., blood (amount and type).

c. Units should incorporate the selection of a helicopter landing zone into their field standing operating procedure (SOP).

(1) Landing Zone (LZ) should be away from overhead power lines, trees, high bushes, and boulders.

(2) Landing Zone should be as flat as possible and free of depressions, ditches, and debris.

(3) Any obstacles should be observable from the air. (If panel markers or other day or night time site identification devices are available they should be utilized and stake down).

(4) Landing Zone will be free of all loose objects, which could be blown up into the helicopter rotor blades.

d. Units with organic medical vehicles and personnel are to use them for field medical coverage. Requests for additional ground evacuation and medical support will not normally be accepted unless fully justified to include reason for non-availability of organic medical support.

e. Unit commanders must ensure that all unit personnel are fully trained in basic first aid and life support procedures as indicated in appropriate soldier's manuals.

**23. Accident reporting and investigation.**

a. All accidents will be immediately reported by the unit, to Range Control, 791-5005/5008. Any accident/incident involving weapons or ammunition will be handled IAW paragraphs 43 and 44, section V, this regulation, pertaining to malfunctions and erratic firing.

b. Accidents will be immediately investigated by the unit's higher headquarters concerned (see section XI, this regulation).

c. Contact DPS who will complete SIR.

**24. Privately owned vehicles (POVs).**

a. Privately owned vehicles are prohibited in any tactical training or bivouac area, on any operational or impact areas, firebreaks, and all dirt roads (Louisville Road, Harlem Road, Gibson Road, etc). Privately owned vehicles are prohibited from parking on ranges or roads adjacent to the ranges and will not be used for transportation of military personnel or equipment to or from the ranges or training areas.

b. No privately owned motorcycles, dirt bikes, three-or four wheeled all terrain vehicles (ATV), bicycles, or other off-road vehicles are authorized in the Fort Gordon Training Complex, on any range or in any training area, except as outlined in USASC&FG Regulation 420-5, paragraph 11.

c. Privately owned vehicles may be operated and parked on range roads, as indicated in USASC&FG Regulation 420-5 during hunting season.

d. Reserve Component/National Guard (RC/NG) units conducting Annual Training (AT) may request permission to park their POVs during AT. Request for a parking area will be made through the Installation Range Officer at the time of the request for ranges and training areas.

e. Violators will be reported to the DPS (Game Wardens) for action.

**25. Range fire prevention and firefighting.**

a. Applicability. These measures are applicable to all portions of the Fort Gordon Military Reservation outside the cantonment area.

b. Range Fire Marshal. The Chief, Range Control, is the Range Fire Marshal.

c. Fire prevention and protection.

(1) All units conducting operations on the installation will maintain continuing programs in fire prevention, prompt reporting of fires, and fire fighting. The following points are to be emphasized:

(a) All flammable debris must be scraped away from demolition pits. A distance of 10 meters from the edge of the pit or fire will be maintained.

(b) No open fires are permitted on the installation.

(c) Operate tent stoves IAW applicable TMs and the unit SOP. Clear grass and flammable materials away from the stove by at least 1 meter. A 10-lb or 25-lb ABC fire extinguisher must be available in the tent.

(d) Lighted smoking materials and matches will not be discarded from vehicles.

(e) No smoking is allowed within 50 meters of ammunition or petroleum products.

(2) The position commander (OIC) of artillery firing points will ensure proper disposition (burning) of all excess powder charges or propellant. The burning of excess powder charges at each firing point is authorized. When a burning area has been designated by the unit, transport charges or increments to the burning area in a metal container in a cargo type vehicle, which has a metal cargo bed, the required explosive signs, and the required operational fire extinguishers. No, other material, equipment, or passengers will be transported in the cargo bed during such movements. (THE ONLY AREAS AUTHORIZED FOR POWDER BURNING ARE FIELD ARTILLERY FIRING POINTS.) Powder burning will be accomplished as follows:

(a) Contact Range Control to determine fire danger category.

(b) All personnel and equipment (except a five-man burning detail) will be at least 5 feet from the burning site.

(c) Only those powder-burning areas indicated above maybe used to burn excess powder. (Burning must be done in short strings in the center of the area and string will not exceed 50 feet in length, 12 inches wide, and be only a single layer deep). This will allow the explosive material to be gradually exposed to the flame to prevent sudden, uncontrolled flare-ups of burning explosives.

(d) Ignite the exposed explosive from the windward (downwind) side. Causing the excess powder to burn against the wind direction helps keep the fire burning slowly and under control.

(e) Sufficient fire fighting equipment and unit personnel will be present in the vicinity of the burning site to control the fire. In any case, have at least 10 gallons of water, one shovel, one fire beater, nearby and one operable fire extinguisher.

(f) Excess powder bags will be burned only during fire code 1 and 2 (see paragraph 25e). Unused powder increments will be packed in metal containers and returned to the ammunition supply point. Vehicle requirements for transporting unused powder Increments will be packed in metal containers and returned to the ammunition supply point. Vehicle requirements for transporting unused powder increments are the same as outlined in paragraph 25c(2), above.

d. Fires.

(1) Because fire potential is so great at Fort Gordon, all field units will be prepared to assist in fighting any fire, which might occur. The OIC of firing issues an order to "cease fire", and notifies Range Control, 791-5008/5005, giving name, range, and unit. OIC of Firing Ranges will have at minimum a 5-man detail standing by to assist Range Control and Post Forestry. At no time, will personnel enter the impact area to fight the fire, unless under the supervision of professional fire fighting personnel. This is a year-round requirement.

(2) Upon discovering a fire outside the impact area, contact Range Control or after 1630, contact the Fire Department. The unit commander/OIC of an exercise will move personnel and equipment away from the fire maintaining accountability of personnel. Unit will not attempt to extinguish fire unless directed by Range Control or Post Forestry Service.

(3) Anyone observing a fire will report it immediately to Range Control or after duty hours to the CDO, 791-4517, and Post Fire Department, 791-4241.

(4) Personnel of Range Control will report Range/Training Area fires to the Post Forestry/Fire Department, CDO, Chief, Range Control, and Chief, Plans, Operations, and Training Division, DPTM.

(5) The Post Forestry Service, DPW, when notified by the Post Fire Department, will take the necessary actions to extinguish the fire. Responsibility for coordinating the alert or ordering into action standby or supplemental fire righting forces and/or equipment is assigned to the Post Fire Marshal or his representative at the scene of the fire.

e. Range fire conditions.

(1) The condition will be posted on the fire danger sign across from Range Control.

| CODE | POSSIBILITY OF FIRES |
|---|---|
| RED 5 | EXTREME - No firing of any weapon or pyrotechnical device |
| ORANGE 4 | CRITICAL - No high explosives, tracer. Burn barrel for pyrotechnics |
| YELLOW 3 | HIGH - Range Control discretion |
| BLUE 2 | MEDIUM - No restrictions |
| GREEN 1 | LOW - No restrictions |

(2) Range Control will coordinate with Georgia State Forestry Service at 1530 daily to obtain current fire urgency status.

## Section IV. Range, Training Area, Training Complex, and Drop Zone Scheduling

### 26. Assignment of range training facilities.

a. The assignment of training areas, ranges, bivouac areas, and other range training facilities will be coordinated by the Chief, Range Control. The following priority system will be used to resolve conflicting range requests:

(1) Priority No. 1 - Firing activities directed by this or higher headquarters and units alerted for deployment for actual contingencies, off-post exercises, and emergency deployment readiness exercise called by Plans, Operations, and Training Division, DPTM, or higher headquarters.

(2) Priority No. 2 - Units undergoing an Army Training and Evaluation Program (ARTEP) external evaluation preceding a formal technical validation inspection.

(3) Priority No. 3 - United States Army Forces Command (FORSCOM) units Fort Gordon.

(4) Priority No. 4 - Other Fort Gordon resident organizations.

(5) Priority No. 5 - ARNG and USAR units conducting annual training.

(6) Priority No. 6 - Active U.S. Army units from other than Fort Gordon.

(7) Priority No. 7 - ARNG and USAR units conducting inactive duty training.

b. The assignment of a range training facility to a unit does not include the exclusive use of roads and trails within the area unless special requirements are justified and sole user authority for the duration of the problem has been approved by the Chief, Range Control.

c. Special requirement, of a unit, which cannot be accommodated by the above guidelines will be referred to Chief, Plans, Operations, and Training Division.

**27. Requests for ranges and training areas/facilities.**

a. Units equipped with Range Facility Management Support System (RFMSS) must schedule all ranges; training areas or facilities, using the remote access program 45 working days prior to date of requested training. A Unit Environmental Checklist will be submitted a minimum of 45 days from date of training with all pertinent data concerning training to be performed.

b. All other units must submit a memorandum in two copies to the Commander, USASC&FG, ATTN: ATZH-DPP-R (off-post units, USAR, ARNG, and civilian organizations must submit their request to the Commander, USASC&FG, ATTN: ATZH-RCT) a minimum of 45 working days prior to desired date of usage. Request will contain a point of contact (POC) who will be familiar with the planned activities. The POC will contact Range Control 1 week prior to confirm scheduled ranges training areas, or facilities. Units must sign for training areas prior to occupation. Requests will include six-digit grid coordinates for command post. Digging of foxholes and use of pyrotechnics must also be requested.

c. Schedule training area based on unit mission/goals and size of unit, (i.e., do not schedule live training areas for a platoon conducting squad tactics, unless absolutely necessary to meet unit mission/ goals). Ranges available for scheduling are in appendix B.

d. All personnel desiring to take Range Certification Test must have a memorandum, signed by an O5 (lieutenant colonel (LTC)) or above, certifying that they are proficient on appropriate weapon system and applicable regulations. This memorandum must be received in the Range Control office NLT 1600 the Wednesday prior to the test. Range Control will conduct certification testing each Friday at 0900 at the Range Training complex located on Range 6. Upon completion, Fort Gordon (FG) Form 6729-R-E (Range Certification) will be issued. Certification is good for 1 year only.

e. Requests for small arms ranges will contain the following information:

(1) Date and time period the facility is to be occupied. Allow time for preparation, non-firing and cleanup activities.

(2) Type of weapons and ammunition to be used.

(3) Type of firing.

(4) POC, phone number.

(5) If units want to allow spectators on a range, the provisions of AR 385-65, chapter 4, will be followed. In addition, units will include in their request that spectators will be present on the range. Units will ensure spectators execute a Release and Hold Harmless Agreement (see sample at figure 1) prior to entering range. Parents will sign for minors (age 17 and below).

f. Requests for artillery, mortar, and live firing areas will include:

(1) Date and time period required. Allow time for preparation, non-firing and clean up activities.

(2) Firing position location (1/1000 accuracy).

(3) Observation posts requirements and locations.

(4) Type of weapon (caliber and model) and ammunition (fuse and type of projectile).

NOTE: Ammunition must be approved for overhead fire.

(5) Types of fire (high angle, low angle, or direct fire).

(6) Time/dates live fire.

(7) POC, phone number.

g. Requests for training facilities to support demolition training must include:

(1) Firing and detonation location coordinates.

(2) Type and amount of explosives.

(3) Elevation of explosions (airspace requirements).

(4) Exact times for the detonations.

(5) POC, phone number.

NOTE: Use of demolition pit is authorized for training purposes only.

h. Complex exercises involving several training maneuvers or bivouac areas or which involve smoke or chemical attacks, aggressor activities, etc., will include a schedule of events (FM 25-4) and overlay depicting routes of march locations of special activities, and dates and times of events.

i. Reserve component units will follow the guidelines established by RCSD, DPTM when submitting requests to use range facilities at Fort Gordon. Fort Gordon units acting as hosts for off-post units may make all administrative arrangements for the sponsored unit to use range facilities.

**28. Cancellations.** Once it is determined that a range or training area/facility will not be required, a telephonic report will be made to Range Control, 791-5005/5008, as soon as possible, this will allow Range Control to make the facility available to others. Range Control will maintain a record of no-shows. Repeated failures to notify Range Control of cancellations will be reported to the units' higher headquarters for resolution.

**29. Planning and operating considerations.** Personnel responsible for preparing requests for range training facilities, and for programming the exercise/problem must consider the criteria established in AR 385-62 and AR 385-63. No portion of the surface danger zone for weapons or explosives will intersect or cross the following areas:

a. Reservation boundaries.

b. Post ammunition storage area and post ammunition vehicle holding area.

c. Built-up areas.

d. Cantonment areas.

e. Bivouac site.

**30. Range and training area facility utilization.**

a. Units will be authorized to use Fort Gordon ranges and training areas/facilities only if the following criteria have been met:

(1) Units have submitted request*s* IAW paragraph 27, above.

(2) Requests for use have been approved.

(3) The occupying units must maintain communications with Range Control IAW section VII, this regulation.

b. Units using Fort Gordon ranges/training areas/facilities in violation of any provisions of this regulation are subject to be removed from the range/training area for a 30-day period.

c. Reconnaissance of training areas may occur 24 hours before occupation of training areas.

d. Reconnaissance will be conducted using tactical or General Services Administration (GSA) vehicles. No POVs authorized.

**31. Range and training area/facility police.**

a. Range and training area facility police policy.

(1) Range Control is responsible for the police of ranges and training areas/facility outside the cantonment area when not in use by units conducting training. Greater emphasis will be placed upon areas of heavy use (e.g., firing points, observation posts, bivouac areas, and stream crossings). Once a range or training area is signed for by the using unit, the unit assumes full responsibility for its police. Any debris found prior to a unit signing for a facility will be the responsibility of Range Control. Notify Range Control of any deficiencies prior to occupation.

(2) Using units are responsible for the removal and disposal of unsightly and objectionable debris (paper, discarded field wire, wood, cardboard, barbed wire, bottles, boxes, cans, containers, rags. and camouflage or roadblock material; i.e., lumber, brushwood, small trees, and branches).

(3) Range police activities will be accomplished IAW the following guidelines:

(a) Dead trees and brush piles will not be removed from infrequently used wooded areas since these items afford cover and concealment for wildlife.

(b) Upon completion of training, the unit commander will require a thorough police of the range, or training area/facility to ensure that no debris has been left in the area, and that weapon spade holes, sumps, etc., have been filled and leveled. Foxholes will not be dug under any circumstances unless prior approval has been obtained from Chief, Range Control. All destroyed, or damaged firing point markers will be reported to Range Control office, 791-5005.

(c) Garbage and trash accumulated by using range facilities or training areas will not be buried or discarded. All trash will be collected and removed from the range/training area and deposited into a dumpster.

(d) Anyone discovering an area which is not properly policed will report the incident to Range Control.

(4) Range Control is responsible for police adjacent to the impact area.

b. Police of firing points, position areas, ranges, courses, and training facilities.

(1) The OIC/NCOIC of all activities has primary responsibility for ensuring that police of the area used meets the highest ecological standards prior to leaving the range/area.

(2) Before a unit has departed an area, it will be inspected by Range Control. If it is desired to delay clearing an area by more than 24 hours, coordination with Range Control is required.

(3) It is expected that an honest effort will be made by the using unit to police an area prior to inspection time. Adequate police of an area is defined as follows:

(a) Police of all trash whether left by the using unit or not, within 200-meter radius of the training area. Adequate police of an area is defined as follows:

(b) Fill in all holes.

(c) Knock down all dirt mounds regardless of cause.

(d) Remove all communication wire.

(e) Remove concertina wire.

(4) Units departing training areas on weekends/holidays will be cleared by Range Control the following workday. Units will be required to return to Fort Gordon if police is inadequate.

**32. Damage, loss, or theft of range equipment or facilities.**

a. Restitution for any damage, loss, theft of range equipment or facilities is the responsibility of the unit occupying range or range facility. The occupying unit will make restitution, as required, by immediately repairing any damage, replacing any lost or stolen equipment, or by completing appropriate cash collection arrangements with Directorate of Resource Management (DRM). Arrangements for appropriate restitution must be made before the occupying unit will be cleared from the range by Range Control.

b. Any unit that fails to clear a range or training area through failure to correct a deficiency or to provide restitution for damage, loss or theft of range equipment or facilities will be denied further access to Fort Gordon facilities until the required correction or restitution is made.

**33. Scheduling of landing and drop zones.**

a. The LZ is located in Training Area 37 (vicinity of LG8290). The LZ is a dirt strip covered with perforated steel platform (PSP). The runway is 3,500 feet long and 60 feet wide. The LZ is presently unable to handle fixed wing aircraft. After coordination with Range Control, units may use the LZ to land rotary aircraft.

b. The Preston DZ is located in Training Area 23 (vicinity of LG 8789). The DZ is 1,260 meters by 500 meters. The occupying unit commander must assume responsibility for jumper safety and brief jumpers on tree landing procedures. The power lines paralleling the eastern edge of the DZ must be turned off prior to personnel drops. The DZ is approved for day operations only. For additional information on DZ, see appendix C.

c. Requests to use the LZ/DZ will be submitted, in writing, to Commander, USASC&FG, ATTN: ATZH-DPP-R, to arrive NLT 45 days prior to requested date of usage. Army National

Guard and Reserve units will submit request through RCSD, DPTM. Request will include the following information:

(1) Unit name.

(2) Size of unit (i.e., platoon, company, or battalion).

(3) Number of personnel to be dropped/landed.

(4) Number and type of equipment dropped/landed.

(5) Number of aircraft involved in exercise by type (i.e., airborne, assault, etc.).

(6) Date and time group for commencement of activity and time of completion.

(7) POC and telephone number of requesting unit.

## Section V. Range Operations and Safety Procedures.

### 34. Safety requirements.

a. Using unit commander will ensure that personnel designated as OIC and RSO meet qualifications in AR 385-63, table 4-1, for these duties.

b. All persons engaged in live tire training will be familiar with pertinent ARs, FMs, TMs, and other directives regarding the care, handling, operation, and employment, and safety precautions of the weapon(s) and ammunition being fired.

c. The OIC and RSO will be present at all times during the conduct of firing/training. USASC&FG Regulation 210-21, AR 385-63, and rating procedures must be on hand.

d. All personnel on or in the immediate vicinity of a firing line will have and wear approved hearing protection devices as specified in AR 40-5, or as approved by the National Rifle Association.

e. All personnel on or in the immediate vicinity of a firing line will wear appropriate protective headgear on ranges employing explosive and fragmentation type munitions, requiring movement while firing, and/or employing overhead fire. Using unit commander may specify the wear of protective headgear on ranges other than those noted above.

f. Running or double-timing on ranges is prohibited except in emergencies or when specifically required by the course of fire.

g. Smoking on range and/or in buildings is prohibited except in the designated areas.

h. Firing will not commence on any range unless appropriate medical support is on site. The occupying unit utilizing the range will provide medics or combat lifesavers.

i. Training ammunition will be maintained in the designated ammunition point for each range until issued to the firing personnel on the firing line. Training ammunition will not be stored unattended or overnight on a range.

**35. Operating procedures-direct fire ranges.** The following procedures apply to all ranges and will be accomplished by the Range Control OIC unless otherwise specified:

a. Before firing.

(1) Block all access roads into the impact area of the range being used.

(2) Obtain a scarlet range flag from Range Control and ensure it is displayed on the range flagpole, prior to firing. In addition, when conducting night firing, turn on the red blinking light located adjacent to Range Control.

(3) Conduct a visual and/or physical reconnaissance of the range impact area to ensure it is cleared of personnel and that only equipment required for the course of fire is present. This excludes fragmentation type where a visual reconnaissance only is required.

(4) Visually inspect the range and its administrative support facilities. Report any unsatisfactory or unsafe conditions to Range Control. Unsafe conditions noted on or near the firing line, on or near the ammunition storage area, or in the target area must be corrected prior to use of the range.

(5) Ensure a range operating and safety briefing is given to all participants.

(6) Ensure all items on checklist are complete.

(7) Notify Range Control that the above has been accomplished and obtain approval to open the range for firing.

b. During firing.

(1) Comply with operating procedures specified for the range in use.

(2) Comply with specific safety procedures.

(3) A cease-fire will be initiated and immediately reported on any and all accidents, incidents, range fires, or other activities likely to result in personal injury. Ensure that immediate lifesaving measures are taken pending arrival of emergency medical personnel.

c. After firing.

(1) Account for all used and unused ammunition.

(2) Ensure range is returned to the state in which it was found prior to unit occupation.

(3) Recover scarlet range pennant and, if used, red blinking light.

(4) Notify Range Control that firing is complete, items (1) through (3) above have been accomplished, and ensure range is ready for clearance (see appendix D).

**36. Restrictions.** The general restrictions given below apply to all ranges.

a. Digging of entrenchment, foxholes, emplacement of protective berms, and similar modifications to existing ranges is prohibited.

b. Relocating permanent or temporary structures as well as relocation of portable latrines and bleachers by using units is prohibited.

c. Parking of vehicles (military and private) is restricted to designated parking areas. Parking of vehicles on or along the side of range access roads as well as range roads is prohibited.

d. Using a range for other than the designated purpose specified in the specific range SOP is prohibited.

e. Tracer ammunition use is restricted to Range 11, 14,and 16. Refer to appendix B for permissible weapons/ammunition.

**37. Artillery firing points procedures.**

a. Artillery firing is restricted to firing points designated by the Chief, Range Control. Approved firing points are listed in appendix E.

b. Using unit will prepare fan overlays for each firing point to be used and submit them to the Chief, Control, NLT 2 weeks prior to desired firing date. Overlay will be prepared IAW AR 385-63.

c. General safety, operating procedures, and restrictions specified for ranges, above, apply except as follows:

(1) Preparation of a firing SOP, to include specific operating and safety procedures, is the occupying unit's responsibility.

(2) Using unit OIC will designate and establish temporary roadblocks to preclude uncontrolled access to their Range safety zone immediately in front of the firing battery position.

(3) Roadblocks and guard will be position in firing point area.

(4) All firing conducted will be observed. Location of observation firing point is at appendix E.

(5) Road movement of self-propelled howitzers is restricted to dirt roads, firebreaks, and to the area in the immediate vicinity of a firing point required to position the vehicle for firing. Occupying unit will avoid destruction of trees or other flora.

(6) The only authorized tracked vehicle trail starts at the Field Artillery Motor Pool (LS90509750) crossing 13th Street into Training Area 16 crossing hardened crossing on Range Road paralleling Range Road for 3.8 miles and crossing at Range 4 (hardened) into Training Area 26 out of Training Area 26 crossing Gibson (hardened) into Training Area 25 turn left onto Sawmill Road (clay road) follow Sawmill Road to access Firing Points D, E, F, and I. The tracked vehicle trail takes a right between Training Areas 29 and 30 to access Firing Points K and L. At Firing Point K follow dirt road for 5/8 mile to the Fish and Wildlife building to the hardened crossing at McDuffie Road into Training Area 23 to Firing Point G. From Firing Point K follow road to the four-way stop, it turns into Battle Hill Road, go straight to access Firing Point C. Follow Battle Hill to the stop sign and turn right onto Jones Chapel Road (clay) follow for 1/2 mile turn onto Training Area access road into 37A to access Firing Point J. Follow airstrip to hardened crossing over Gibson Road into Training Area 36 to access Firing Points A and B. From Firing Point A follow the west trail to cross over Harlem Road (clay) to Firing Point H. The tank trail is off limits to all POVs at all times.

(7) Parking is not authorized on the ranges for POVs. Parking is permitted on the ranges for military vehicles. Parking in the training areas is allowed in Training Areas 16, 25, 26, 37A, and Training Area 23 Preston DZ. No parking is allowed on the tank trail for POVs or military vehicles. No all terrain vehicles (ATVs) are allowed on any training areas or ranges.

**38. Artillery safety procedures.**

a. An OIC and RSO is required for each firing point.

b. The chain of command to which the OIC is assigned shall have complete responsibility for all aspects of firing and safety. Each commander will ensure that personnel who are participating in firing exercises are trained and/or supervised as specified in this regulation.

c. Commanders will ensure that the positions of OIC and OIC of training are firmly established prior to firing exercises. The commander must ensure appropriate assignments are made based upon his training requirements. The following are offered as examples of combination of responsibilities:

| TYPE OF EXERCISE | OIC OF TRAINING | OIC |
|---|---|---|
| FTX | Bn Cdr/XO/S3 | Btry Cdr/XO/FDO |
| ARTEP | Bn Cdr/XO/S3 | Btry Cdr/Btry XO |

d. Major commanders are authorized to publish safety SOP directives, which conform to the provisions of AR 385-62, AR 385-63, and the spirit of this regulation in order to meet the requirements of special situations. In no case will safety SOP publications be less restrictive or eliminate any of the safety checks required herein. Such publications must be coordinated with Headquarters, USASC&FG, ATTN: ATZH-DPP-R prior to publication implementation.

**39. Personnel to perform safety duties.**

a. Officer in charge.

(1) A commissioned officer will be present in each firing position.

(2) The OIC's next higher commander will ensure the OIC is properly instructed in his safety responsibility and is properly certified.

(3) The OIC's duties are spelled out in detail in paragraph 39 of this regulation, AR 386-62, and AR 395-63. Generally, his responsibilities include:

(a) Coordinating with the Chief, Range Control to obtain or verify the proper, authorized firing positions and impact area.

(b) Establishing an overall safety system within the firing position.

(c) Ensuring those personnel required to perform safety checks are competent, properly briefed on their duties, and command certified by their parent unit. The OIC must have attended Range Safety Briefing and have a FG Form 6729-R-E card.

(d) Ensuring rigid compliance with this regulation and common sense safety rules and practices.

(4) The OIC may also perform the functions required of the battery executive officer (XO), fire direction center (FDC), chief of firing battery, or chief of section when the size and scope of the exercise or problem are such that he can accomplish these tasks and still assure safety. While live firing is in progress, the OIC's duties will be limited to those he can perform without leaving the firing position.

b. Battery personnel.

(1) The Battery XO and Chief of Firing Battery are responsible for the general safety practices of the firing battery and for the professional competence of their personnel.

(2) The Chief of Section is responsible for all safety checks required within his section to include checks of the weapon and ammunition, provided he is command certified as being qualified to perform these checks.

**40. Safety duties.**

a. BEFORE DEPARTING FOR THE RANGE, the OIC and all other safety personnel will read, understand, and comply with:

(1) AR 385-62 or AR 385-63, as appropriate.

(2) USASC&FG Regulation 210-21.

(3) FM 6-50, chapter 5, 7, 12, and appendix D.

(4) Appropriate FMs and TMs for their weapon and ammunition.

b. BEFORE DEPARTING THE RANGE, the OIC will ensure that the following references and items of equipment for use in the firing position for safety purposes:

(1) USASC&FG Regulation 210-21.

(2) Copy of Artillery (Paladin) Procedures Manual

(3) Applicable tabular firing table.

(4) Applicable graphical firing table.

(5) Applicable graphical site table.

(6) Map of the area.

(7) A second properly functioning and decimated aiming circle.

(8) A serviceable gunner's guardant.

(9) FM 6-50.

c. BEFORE FIRING.

(1) The OIC will accomplish the following tasks:

(a) Verify exercise and date, and confirm any pen-and-ink changes with the Range Office.

(b) Prepare the safety diagram. The OIC will have in his possession copies of all, safety diagrams, and safety Ts applicable to the firing point for which he is responsible. All other personnel performing safety duties will have copies of appropriate safety Ts. The accuracy of safety diagrams/safety Ts will be verified by independent computations.

(c) Verify that all personnel responsible for safety checks are command certified and have the appropriate safety diagram/safety Ts.

(d) Verify that the battery is in the position specified.

(e) Verify the lay of the battery to within one mil variation from the azimuth of fire using a properly decimated second aiming circle. The second aiming circle may be oriented by three means: orienting angle, magnetic needle, or simultaneous observation. To take into account for magnetic variations, a maximum variation of plus or minus 10 mils will be allowed between the initial lay circle and the second circle when verifying lay with the magnetic needle method. If simultaneous observation is used to orient the initial lay circle; a second observation will be made with the safety aiming circle using a different master station.

(f) Verify that all sections and the FDC are using the common deflection used to compote the safety diagram.

(g) Verify that the FDC has the data drawn on the firing chart.

(h) Verify that range clearance has been obtained from Range Control.

(i) Verify azimuth of fire for each howitzer by means of a compass.

(2) The OIC will ensure that the following actions are properly accomplished. He may be assisted by qualified command certified members of the chain of command, such as the battery safety officer, FDC, or chief, firing battery.

(a) Verify the proper positioning of the aiming posts collimator, or aiming point in reference to the referred deflection by sighting through the weapon sight.

(b) Verify boresight of each weapon after each change of firing position.

(c) Verify the sight settings (to include slipping azimuth scale) and placement of safety stakes or safety tapes/chalk marks (self-propelled weapons).

(d) Verify minimum quadrant elevation (minimum quadroon elevation determined by the XO/firing platoon commander). Compare the XO's minimum quadrant elevation for the minimum range from the Artillery (Paladin) Procedures Manual, using the larger of the two as the safe minimum quadrant elevation.

(e) Verify that ammunition to be fired is the type specified on the DA Form 581 (Request or Issue and Turn-In of Ammunition).

(f) Verity that the visible portion of applicable danger areas are clear of personnel (check with forward observer). Ensure that firing does not commence until rounds can be observed visibly from manned observation post or electronically with reliable radar.

d. DURING FIRING, the OIC assisted by the command certified battery XO, FDC, and Chief of Firing Battery will:

(1) Closely, supervise the safe firing of the battery, to include proper performance of safety duties by all personnel and eliminating all unsafe conditions. Examples of unsafe conditions are:

(a) Safety features of weapon do not operate.

(b) Powder pit located 50 meters to rear of gun.

(c) Personnel smoking near pieces.

(d) Improper handling of ammunition.

(e) Time fuses previously set and not room to SAFE.

(f) Rounds on floor of howitzer.

(g) Failure of cannoneer to inspect powder chamber and bore after each round fired.

(h) Failure to swab powder chamber after each round fired from weapons using separate loading ammunition.

(i) Failure to level bubbles.

(j) Failure to listen to fire commands and reads backs.

(k) Guns will be taped for both deflection and quadrant, high and low angle to be located both inside and outside of gun.

(l) There will be no more than two rounds fused up at any given time.

(m) Failure to properly apply registration corrections to appropriate safety diagrams.

(2) Designate a command-certified officer or NCO to be responsible for the safety duties of the Chief of Section for sections led by uncertified Chief of Section (see paragraph e, below). If no command certified individual is available to assume the safety responsibilities of a particular section, that section may follow all commands but may not actually cut charges, set fuses, or fire rounds. Such sections may only dry fire.

(3) Visually check for parallel laying.

(4) Report accidents, malfunctions, erratic firings, and violation of this range regulation immediately to the appropriate next higher commander and to Range Control.

e. DURING FIRING, the command certified chief of section supervised by the OIC, battery XO, and/or chief, firing battery, will:

(1) Ensure his section fires only serviceable rounds of authorized ammunition. If he has any doubt whether a particular type round is authorized, he will check with the OIC before allowing the type round in question to be loaded and fired.

(2) Ensure his section fires only the proper, safe, charge as reflected on his safety T.

(a) He will ensure that the proper charge increments for each type round are present before the round is prepared for firing.

(b) Once the round is prepared, he will ensure that the correct number and type of charge increments are placed in the powder chamber before firing the howitzer.

(c) For mortar rounds, the remaining charge increments must be physically counted and verified as correct before each round is fired.

(3) Ensure that rounds are not fired below minimum quadrant elevation or above maximum quadrant elevation, outside lateral safe deflection limits, or with fuse settings below minimum time, as specified on his safety T.

(4) For all commands, which are unsafe to fire, command UNSAFE TO FIRE, and give reasons. Example: UNSAFE TO FIRE, 3 mils outside right safety limits and 20 mils above maximum quadrant elevation, or UNSAFE TO FIRE, 5 mils below minimum quadrant elevation.

(5) Accept final responsibility for safety of weapon settings and crew prior to command FIRE.

(6) Command CHECK FIRE if he observes any unsafe conditions, report these conditions to the chain of command, and suspend firing until the unsafe conditions are corrected.

f. The FDC will ensure that the safety limits specified are properly plotted on the firing charts and that only safe fire commands are transmitted to the firing sections. The FDC will be designated by the OIC and may be either a commissioned or NCO officer. Further he will:

(1) Verify and apply registration corrections to appropriate safety diagrams/safety T, to include those held by other individuals performing safety duties within the firing position.

(2) Exercise special caution in special situations. If a deflection difference or special correction is sent to the firing sections, he must ensure that for each section the total of the announced deflection and the deflections on the gunner's aid will be within lateral safety limits. This applies to quadrant corrections and range limits as well.

**41. Primary and supervisory responsibility.**

a. For every safety check connected with firing, there is a soldier responsible for performing the safety check, and there is another soldier responsible for seeing that it is done properly. The soldier performing the safety check has the primary responsibility; the soldier seeing that it is done has supervisory responsibility. In most cases, the supervisory responsibility rests with the chain of command. If any unsafe acts are committed, the severity of disciplinary action taken against those responsible depends on the unsafe act, the circumstances, and whether the soldiers involved have primary or supervisory responsibility.

b. To eliminate possible confusion about whom has which type responsibility, the following list (table 1) of unsafe acts indicates who has primary and supervisory responsibility for preventing the unsafe act. This list is not all encompassing but is detailed enough to indicate clearly what type firing safety responsibilities rest at which level in the chain of command. NOTE: The safety responsibilities of the chief of section are transferred to any command certified officer/NCO who temporarily assumes the duties of the chief of section.

**Table 1**
**Unsafe Acts Responsibility**

| UNSAFE ACT RESULTING IN A ROUND BEING FIRED OUT UNSAFELY | RESPONSIBILITY | |
|---|---|---|
| | PRIMARY | SUPERVISORY |
| Unsafe delayed fuse set by gunner and fired by C/Sec | C/Sec | C/FB, XO |
| Unsafe set by assistant gunner and fired by C/Sec | C/Sec | C/FB, XO |
| Unsafe fuse set by cannoneer and fired by C/Sec | C/Sec | C/FB, XO |
| Wrong charge cut by cannoneer and fired by C/Sec | C/Sec | C/FB, XO |
| Improper boresight by gunner | C/Sec | C/Sec, XO |
| Counter reset or slipping azimuth scale error by gunner | C/Sec | C/FB, XO |
| Preparation of handling accident with ammo, resulting in damage to personnel or equipment | C/Sec | C/FB, XO,OIC |
| Weapon deficiencies; bad ram; bad recoil mechanism, bad sights | C/Sec | C/FB, XO |

**Table 1**
**Unsafe Acts Responsibility**

| UNSAFE ACT RESULTING IN A ROUND BEING FIRED OUT OF SAFETY | RESPONSIBILITY PRIMARY | SUPERVISORY |
|---|---|---|
| Unsafe data sent by FDC, set by howitzer crew and firing by C/Sec | Btry FDO | C/FB, XO |
| Weapon laid out | XO | OIC |
| Intervening crest (XO minimum quadrant elevation) | XO | C/Sec, OIC |
| Incorrect safety diagram | OIC | XO |
| Wrong firing point | OIC | XO |
| Unauthorized ammo | XO | OIC, C/FB, C/Sec |
| Suspended lot of ammo: Failure to properly notify units | Ammo Supply Off | |
| Failure to implement suspension | XO | OIC, C/FB |
| Bad survey: | Survey Off | OIC, S3 |
| Grid of firing point | Survey Off | OIC, S3 |
| Oriented line | Survey Off | XO, OIC, S3 |
| Declination constant | XO | OIC |

**42. Artillery (Paladin) Procedures Manual.**

a. The Artillery (Paladin) Procedures Manual will be updated and maintained by Chief, Range Control, for approved firing activities being conducted on any training area. No ammunition, fuse, weapon, type of fire, or charge other than that authorized by the manual will be used.

b. The minimum and maximum ranges established in the Artillery (Paladin) Procedures Manual DO NOT provide for vertical interval. To determine site, the highest attitude will be used at the maximum range. When an isolated high peak at minimum range or a depression at

maximum range will cause an unnecessary limitation along the whole minimum or maximum range line. A separate site will be computed for the peak or depression, and firing in this area will be limited by the computed quadrant elevation and necessary deflection limits of the area.

c. Surface danger areas, computed and constructed by Range Control office personnel, include piece displacement factors.

(1) All weapons will be located within 200- meter radius of the firing marker or surveyed grid location. When firing extended fonts, all weapons displaced outside the 200-meter radius from firing point marker will have separate safety "T" computed based on displacement from the firing point marker. Ensure safety for weapons outside the 200-meter radius is within the safety limits of the safety computed from the firing point marker. The unit using an extended front must yield when in conflict with any firing point occupation. Extended front must be requested, in advance, through Range Scheduling.

(2) Special firing requirements/requests, which are not covered above, should be referred to the Chief, Range Control, for coordination and/or decision.

(3) Requests for firing position from units using less than a complete battery of weapons should reflect a preference for a firing position of less than 200-moter radius. A smaller firing position radius allows the size of the impact area assigned on the Artillery (Paladin) Procedures Manual.

d. Prior to registration, targets must be selected in the central portion of the impact area. After registration, registration corrections must be applied to deflection and quadrant elevation limits. Should no registration be conducted, metro add velocity error (VE) correction will be applied to these limits or all targets will continue to be selected in the central portion of range/deflection limits as prescribed in the Artillery (Paladin) Procedures Manual.

e. In high angle fire, the deflection limits will be corrected by moving the right limit to the left by the amount of maximum drift for the charge being fired within the range limits. The left deflection limit will be corrected by moving the left limit to the left by the amount of minimum drift for the charges being fired within the range limits in the Artillery (Paladin) Procedures Manual.

f. If the minimum quadrant elevation to clear a mask is greater than minimum quadrant elevation computed from the Artillery (Paladin) Procedures Manual; the minimum quadrant elevation for clearing the mask will be used to determine the near limit of the impact area. Members of the chain of command computing the minimum quadrant elevation to mask (XO's minimum quadrant elevation) will use FM 6-50, chapter 10, as a guide.

g. The officer/NCO responsible for the operation of the FDC will have the safety limits specified by the Artillery (Paladin) Procedures Manual drawn on the firing charts. Data required drawn on charts are the lateral azimuth limits and the minimum/maximum ranges, to include doglegs.

h. Basic safety diagram. See FM 6-50, chapter 12.

i. Safety stake diagram. See FM 6-50, chapter 12.

j. Minimum quadrant elevation (XO's minimum quadrant elevation). See FM 6-50, chapter 7.

k. Use of safety 'T'. See FM 6-50, chapter 12.

l. Special situations.

(1) Safety computations. Safety computations for high angle and shell illuminating, shell improved capabilities missile, and shell smoke (white phosphorus and hexachloride) are discussed in FM 6-50, chapter 12.

(2) Firing. Firing of shell illuminating, shell smoke, and shell white phosphorus is not authorized when the surface wind exceeds 18 knots.

(3) Fire prevention. As a fire prevention measure, clearance to fire pyrotechnics must be obtained from Range Control. Winds aloft must be considered for possibility of causing the flare to drift out of the impact area. In such cases where this does occur, firing of shell illuminating is prohibited, even though surface winds may be less than 18 knots.

(4) Shell beehive. The safety data for shell beehive will be the same as that computed for the high explosives diagram, except that the beehive tables are used to obtain elevation and fuse settings. Maximum quadrant elevation for direct fire will be specified on the safety card.

m. Direct firing of artillery weapons systems is unauthorized due to terrain and range limitation.

**43. Misfires and rounds in hot tubes.**

a. Officer in Charge. In the event of a misfire or rounds in hot tubes, the OIC is responsible to ensure:

(1) All personnel are safe.

(2) Proper procedures are followed as outlined in the appropriate weapons operators' manual.

(3) Range Control is notified and may request technical assistance from post support elements through Range Control.

b. Procedures. In the event of a misfire, check fire, or check fire with rounds in hot tubes, only the latest procedures as outlined in the appropriate Weapons Operators Manual will be followed. All responsible personnel must be thoroughly familiar with the latest procedures.

**44. Malfunctions.**

a. In the event of a weapon or ammunition malfunction other than routine cases, such as misfires, hang fires, and duds, the OIC will:

(1) Suspend firing.

(2) Ensure that the weapon and ammunition involved are retained intact.

(3) Make a report to Range Control. A responsible individual from Range Control will then immediately notify the Chief, Ammunition Branch (post ammunition officer, and chief maintenance), DPW, in all cases except instances involving nonstandard Army inventory items.

(4) Continue exercise/problem upon release authority issued by the Chief, Range Control, or by his designated representative.

b. The representative of the Chief, Range Control, chief of maintenance, unit representative and the Chief, Signal Branch Safety Office, will conduct a technical investigation of the incident, and will:

(1) Inform the Chief, Range Control, of the incident, findings, actions taken, and recommendations.

(2) Request through command channels the submission of a detailed report if appropriate, from OIC. This report will be submitted IAW AR 15-6 within 10 days, through channels to this Headquarters, ATTN: ATZH-DPP-R (exempt reports control, AR 335-15, paragraph 7-2t).

c. The Chief, Range Control or his designated representative will:

(1) Notify the Chief, Plans, Operations and Training Division, DPTM.

(2) Notify the Chief, Ammunition Branch, and DPW.

(3) Take the necessary action to advise all subordinate commands if the incident involved suspended ammunitions.

(4) Notify DPS if SIR is necessary.

(5) Notify the Chief, Signal Branch Safety Office.

(6) Notify other agencies, as required, (i.e. Fire Department).

(7) Authorize continuance of exercise/problem if circumstances indicate such action is appropriate.

**45. Erratic firing.** Any projectile that burst or lands outside safety limits as prescribed by the Artillery (Paladin) Procedures Manual will require immediate action and investigation, as outlined below, to determine and correct the cause.

a. Anyone detecting rounds landing outside their authorized limits or outside of the established impact area will:

(1) Cause the responsible unit to suspend firing if the unit can be immediately identified.

(2) Immediately report the incident to Range Control. The report will include:

(a) Date and time erratic round was observed.

(b) Injury to personnel.

(c) Equipment damaged.

(d) Number of rounds.

(e) Location of round.

(f) Airburst estimated height.

(g) Ground burst, crater available. (Ensure that the crater and any fragments are not disturbed prior to the arrival of the Range Officer.)

(h) Location of observed.

(i) Knowledge of source of erratic round.

(j) Name and unit of person reporting.

b. Upon receipt of a report of a round out of impact, whether ground or air burst, Range Control will issue the following directives to all artillery and mortar firing points on the appropriate ranges. <u>All artillery and mortar firing points… All artillery and mortar - firing points, All artillery and mortar firing points, All artillery and mortar firing points, This is Range Control... This is Range Control. CEASE FIRE.. FREEZE... CEASE- FIRE. FREEZE</u> All appropriate firing points will then stand by to acknowledge receipt of the call by responding with initials of radio telephone operator when his firing point is called.

c. On receipt of a CEASE-FIRE message, containing the word FREEZE, no weapons will be moved or fired. Sighting and aiming stakes will be left in place, fire control equipment will not be altered, and ammunition will not be moved. All personnel will move away from the weapons.

d. Ground burst will be analyzed as soon as possible to determine if any direct fire ranges were affected. Direct fire ranges are selectively put into a dry status when their danger fans cover the crater analysis and will remain so until the crater team returns from down range.

e. The Chief, Range Control, will:

(1) Notify the Chief, Plans, Operations, and Training Division, DPTM.

(2) Notify the Signal Branch Safety Office of the incident.

(3) Notify DPS if SIR is necessary.

(4) Analyze available facts and data to determine suspect unit.

(5) Require technical service investigation if ammunition or weapon malfunction is suspected. Notify Chief, Ammunition Branch, and DPW.

(6) Report incidents to the suspect unit's major command headquarters and require them to conduct an investigation IAW AR 15-6. A copy of the investigation will be submitted to Commander, USASC&FG, ATTN: ATZH-DPP-R.

f. As the investigation proceeds with the identification of caliber and the responsible firing unit, those units determined to be safe will return to firing status. Units, which have not fired within 30 minutes of reported impact would be allowed to start fire once circumstances permit.

g. The OIC of a suspect or known unit will:

(1) Suspend firing.

(2) Immediately cause cannoneers to fall in at the rear or their pieces and ensure that all pieces remain as laid. No ammunition will be disturbed until clearance has been given by the Chief, Range Control.

(3) Determine the facts surrounding the incident and report them to both the Chief, Range Control and an appointed disinterested investigating officer.

h. Upon completion of investigation, the investigating officer will notify the Chief, Range Control of units cleared. Range Control will notify the unit concerned when the check fire has been lifted. Once a unit is given a check fire by Range Control, no one but the Chief, Range Control has the authority to lift it.

**46. Unsafe conditions.**

a. Any individual (military or civilian) who observes an unsafe act or condition may cause firing to cease by commanding CEASE- FIRE. The act or condition will than be explained and corrected immediately.

b. Everyone must remain alert and watchful for personnel, vehicles, or aircraft, which might inadvertently wander into danger areas. If this occurs, firing will cease and notify Range Control immediately. Firing will not be resumed until personnel, vehicles, or aircraft have cleared the danger area and Range Control has lifted the check fire.

**47. Surface danger area "D".**

a. The surface danger area "D" is the area where hazards are minimal and will vary according to the required dimensions for the target area, impact area, and danger areas "A", 4, Cll, and "E". AR 385-63, chapter 11, discusses ammunition clearance for overhead fire. When personnel occupy any part of surface danger area "D", only lots of ammunition that is cleared for overhead fire will be used. The vast majority of firing points at Fort Gordon will require the use of ammunition cleared for overhead fire. Ammunition requisitions should be clearly marked "For Overhead Fire" whenever personnel may be in surface danger area "D".

b. All artillery ammunition used in training exercises involving overhead firing and close support of ground troops by over head or flanking fire will be from the same lot number for each exercise. If lot numbers must be changed, the new lot will be fired for adjustment prior to firing over head for unprotected troops. Small quantities of several lots of ammunition may be fired in training exercises; however when firing mixed lots, over head and flanking fire is prohibited.

c. If ammunition cleared for overhead fire is not available from the ammunition supply point, special precautions must be taken to preclude access to surface danger area "D". Roads and tank trails passing under the trajectory of artillery ammunition must be blocked and all personnel removed from Area "D" before firing can commence.

d. Area "D" will not be occupied under any circumstances during direct fire, or during the firing of any mortar ammunition.

**48. Surface danger area "E".**

a. The surface danger area "E", for all cannon firing indirect fire, is that area immediately in front of the piece bounded by the deflection limits expanded right and left by 445 mils, and extending forward by 300 meters for a 105 millimeter (mm) howitzer, 350 meters for a 155mm and 84-inch howitzer.

b. During firing, personnel or vehicles will NOT be permitted inside area "E". The firing unit must control access to roads passing through area "E". Road guards must be able to communicate with the fire control element of their unit.

c. Only during the conduct of unit training using position areas in tactical configurations, such as terrain positioning, box, circular, star, etc., may unit personnel be inside area "E" during firing. These personnel will be limited to gun crews and the minimum number of people

required to lay the weapons, complete ammunition preparations, or perform safety functions. Commanders are responsible to ensure that personnel inside area "E" adhere strictly to hearing conservation provisions.

**49. Fire and maneuver exercises.**

a. Live fire combined arms exercises are authorized within the limits of this regulation, AR 385-63, and the restrictions of the weapons ammunition employed.

b. Because of the inherent complexity of this type exercise, it is necessary that comprehensive, detailed planning be accomplished between the OIC and the Chief, Range Control. This planning should include, but not be limited to, the following:

(1) Scheme of maneuvering and fire support plans.

(2) Weapons, ammunition, and pyrotechnics to be fired.

(3) Control of weapons and maneuvering elements.

(4) Survey and safety card requirements.

(5) Terrain and facilities desired.

**50. Lasers.** Lasers will not be operated on Fort Gordon ranges without prior approval of use from ENRMO and Chief, Range Control.

## Section VI. Training Areas and Facilities

**51. Procedures.** The following general policies and procedures apply to the use of training areas and facilities available for unit use on the installation.

a. Training areas and facilities will be scheduled separately. No training area will be signed for without a Unit Environmental Checklist that has been approved by the integrated training area management (ITAM) and ENRMO and proper certification. Only E-7 (SFC) and above will be certified to sign for training areas.

b. Safety is of paramount concern. If any unsafe acts are seen, they will be immediately halted. Speed on all dirt roads is limited to 15 miles per hour. If an adverse weather condition exists, speed will be adjusted accordingly.

c. Digging of entrenchment, preparation of individual righting positions, erection of protective beams and similar activities involving requests for waivers will be forwarded to the Chief, Range Control. If approved, all such improvements will be filled in or leveled, as appropriate, upon termination of training unless otherwise directed by the Chief, Range Control.

d. Stripping of flora by using unit for use in position camouflage, clearing fields of fire, preparation of LZs, etc., is prohibited without specific approval of the Chief, Range Control. Plant material authorized for camouflage is specified in paragraph 16c, this regulation.

e. Preparation and use of slit trenches for the deposition of human waste is prohibited. Units will use permanent portable latrines provided by the DPW or will request some if not available in assigned training area or facility. Movement of portable latrines is prohibited.

f. Dumping of waste POL products, and similar waste is prohibited. All spills regardless of amount will be reported to Range Control immediately upon discovery. Additionally, the spill is to be reported to the Fire Department, 791-4141, if Range Control is not available. See appendix F for environmental protection and spill procedures.

g. Open burning of trash or burning off areas is prohibited.

h. Using units finding a training area or facility in an unsatisfactory state of police or repair will immediately notify the Chief, Range Control and arrange for cleanup and repair. Any unsafe conditions found must be corrected prior to use. Using unit is responsible for police of assigned training area facility during the period in which the area is used by the unit. Unit will contact the Chief, Range Control prior to clearing a training area facility to arrange for a clearance inspection IAW appendix G.

**52. Night tactical training exercises.**

a. As a minimum, the following safety requirements must be implemented:

(1) Establish sleeping area policies and ensure personnel use only designated and protected areas for sleeping.

(2) Prior to moving a vehicle, require the driver or crew member to walk around and look under the vehicle to ensure no one is endangered by movement of the vehicle.

(3) Require ground guides for all vehicles operating within areas occupied by dismounted personnel. The driver must see ground guides at all times, or the driver will stop the vehicle.

(4) Require two ground guides for all vehicles when backing.

(5) Establish manned dismount points at entrances to assembly bivouac areas and restrict movement of vehicles during hours of darkness in such areas.

(6) Within a tactical position, a minimum of one person must be awake at all times.

(7) Do not sacrifice safety for speed.

(8) The above and other safety practices must be enforced by the chain of command.

b. Vehicle lighting during road marches conducted at night must, above all, provide for the safety of our soldiers. Unit SOPs must specify the conditions under which vehicle lights or night vision devices will be used. Blackout lights may only be used on post after approval of the tactical plan by Range Control, DPTM.

**53. Roadblocks.** All roadblocks and barriers erected on roads and all barriers established in troop areas (e.g., concertina wire) which will remain in place during hours of darkness or reduces visibility will be marked with reflective tape, white engineer tape, or similar material.

## Section VII. Communications with Range Control.

**54. Communication requirement.** Occupying unit using a range at Fort Gordon must establish and maintain communications with Range Control at all times during use. Hourly radio and/or telephone checks will be made to Range Control. This communication is necessary to ensure maximum safety and complete control of all firing conducted on the reservation.

**55. Radio.** Range Control operates on radio net frequency 173.5125 megahertz (MHz), and frequency modulated (FM) 42.00 MHz. These nets are operational from 0730 - 1600, Monday through Friday, and anytime ranges are conducted at night or weekends. The portable units are available for use on ranges when telephonic communication cannot be established. Units in the training areas must conduct daily communication checks via FM 42.00 MHz with Range Control.

a. All the firing activities at Fort Gordon will be controlled by FM radio communications. OICs/NCOICs have primary responsibility to ensure that communication equipment is operational and being monitored at all times. The loss of communication with Range Control is a serious matter. The OIC/NCOIC will impose an immediate cease- fire on their unit if communication with Range Control is lost. If radio operators fail to properly monitor the Range Control FM net, Range Control will place the unit under check fire until the OIC/NCOIC can correct the situation. If communications are lost again, the unit will be placed under check fire until permission of the Chief, Range Control is granted. The Chief, Range Control may, at his discretion, deny a unit permission to continue firing. In such cases, the Director, Plans, Training, and Mobilization, DPTM will be notified, as will the unit's major headquarters.

b. The OIC/NCOIC of all firing and non-firing exercises must check in with Range Control upon arrival at the training site, and ensure that constant communication is maintained throughout the exercise.

c. Frequency modulated radio net operation and procedures:

(1) Range Control is the Net Control Station (NCS). The NCS call sign is RANGE CONTROL. This is a directed not requiring all communication to either originate from or directed to RANGE CONTROL. Units conducting firing/non-firing activities will use radio net frequency 173.5125 MHz, or FM 42.00 MHz.

(2) Unit call signs will be the range or firing point number assigned as established by Range Control.

(3) Traffic on all Range Control nets will be limited to the following:

(a) Checking into or out of the net.

(b) Reporting or ordering "Cease Fire".

(c) Lifting of check fire by Range Control.

(d) Reporting to Range Control any incidents, accidents, fires, and malfunctions.

(e) Hourly radio checks to Range Control.

(f) Transmitting warning and control information from Range Control. These broadcasts serve to reassure units of their communications link with Range Control and require no answer.

d. It is strongly recommended that units maintain logs of all communication with Range Control. The log can be used as a reference for any investigations, etc.

e. Units will make every effort to keep the radio free of unnecessary traffic.

(1) Listen before transmitting.

(2) Be brief.

(3) Utilize proper radio procedures.

(4) NOTIFY RANGE CONTROL BEFORE SWITCHING FROM ONE MEANS OF COMMUNICATION TO ANOTHER (e.g., radio to telephone).

**56. Telephones.** Maintenance of all installed telephones is the responsibility of the Directorate Information Management (DOIM). Only authorized persons will make alterations or repairs to this system. Upon loss of telephone communications, the OIC will order an immediate CEASE-FIRE until communication is re-established either by telephone or radio.

**57. Public address system.** The using unit of each range is responsible for the proper operation of the address system. Additional speaker systems are available at Range Control, if necessary.

**58. Field wire operations.**

a. Most of the ranges have telephones available (see appendix B). Some training areas have telephones. Using unit will coordinate with DOIM for use of telephone drops.

b. Installation.

(1) Field wire will not be connected to the range lines until the wire has been laid from the telephone location to the range line drop, and a continuity check has been accomplished with a telephone connected to both ends.

(2) Switchboards WILL NOT be connected to the range lines.

(3) When a unit prepares to depart a range/training area, field wire will be disconnected from the range circuit drop prior to disconnecting the field wire from the telephone. Failure to disconnect from the range circuit drop prior to disconnecting the field wire from the telephone may cause the entire circuit to be shorted out.

(4) Most training areas have a communications network composed of multiple cable systems. This network is not connected to Range Control, and is to be utilized for intra- or inter-unit purposes unless authorized by DOIM. Contact the DOIM for information concerning the cable system. This cable system may never be connected into the above ground wire system.

c. Installation and removal of field wire lines will be accomplished IAW the following operating principles:

(1) Field wire lines must be tagged to indicate the unit designation, firing point/training site, and inclusive dates of use. Wires found to be improperly tagged will be disconnected.

(2) Road crossings will be accomplished as prescribed in Training Circular (TC) 24-20 for parallel or culvert-type crossing.

(3) Wire lines will not be dug in or covered when crossing hard surfaced or improved (gravel) roads.

(4) Overhead crossings, over hard surfaced or improved roads are authorized when the lowest point of the wire is at least 20 feet above the roads.

(5) The laying of field wire in the vicinity of or across aircraft landing strips of staging areas is prohibited.

(6) The utilization of telephone or power poles for field wire laying is prohibited.

**59. Artillery control.**

a. If a unit desires to have the battalion FDC control the fires of subordinate batteries, the battalion FDC may check in the batteries and handle all communications between Range Control and the battalion. The firing units must monitor the Range Control FM frequency, and the battalion will he responsible for obtaining and recording check-in and checkout codes and other data. A memorandum will be submitted to Range Control in advance of the exercise indicating a desire for "Battalion Control."

b. If the battalion's controlling element fails to perform satisfactorily, the individual batteries will be required to obtain their own check-in and checkout codes.

c. The following information will be required to obtain a wet (firing) or dry (non-firing) check-in code:

(1) Unit identification.

(2) Firing point.

(3) Name and rank of radio telephone operator.

(4) Name and rank of OIC.

(5) Unit phone number (if applicable).

(6) Number and type of weapons.

(7) Number of personnel.

(8) Range Control will copy down this information and reply with a check-in code, check-in time, and the initials of the radio operator. The unit in the field must copy down the check-in code, because they will need it when checking out.

d. The following information will be required when checking out of the range from a wet status:

(1) Unit identification and check-in code.

(2) Number of rounds fired by type.

(3) Charge(s) fired.

(4) Range Control will copy down this information and reply with a checkout code, checkout time, and the initials of the radio operator. It is suggested that units keep this information for at least 1 week.

e. The following will be required to obtain a checkout code from a dry (non-firing) status:

(1) Unit identification.

(2) Check-in code.

## Section VII. Training Ammunition

**60. General.** Training ammunition will be maintained under positive control at all times. Live ammunition will only be used on designated ranges and firing points. All personnel issued and/or handling training ammunition will be familiar with provisions of AR 385-63, AR 190-11, TM 9-1300-206, and FM 5-250 as they pertain to the munitions being used.

**61. Forecasting ammunition.** Units will use a 12-month moving forecast to maintain an up-to-date projection of monthly ammunition needs that align with planned training events. The forecast will result in an allocation based on available assets. Forecast requirements to the post installation ammunition manager supporting ammunition supply activity correctly to ensure supplies will be available when needed. AR 700-22 is the directive requiring ammunition forecasting, and DA Pam 710-2-1 provides a standard format.

a. Ammunition forecasts are feeder reports for the Worldwide Ammunition Reporting System (WARS) and the forecasts establish minimum 90-day stockage levels at ASPs.

b. Unit training ammunition managers must submit any changes to the 12-month ammunition forecasts for their units in time to meet the 90-day stockage objective. The installation manager will consolidate, submit the 12-month forecast into the WARS report by month for the next 12 months for planning purposes. Always show 12 months of forecasts, even when it requires forecasting into the next fiscal year. This assumes that the next year's authorization will be similar to the current year's authorization.

c. Units may only forecast authorized training ammunition.

d. Do not forecast substitute/secondary Department of Defense identification code (DODIC). Forecast only primary ammunition DODIC.

e. Committee for Ammunition Logistics (CALS)-controlled items require a minimum 120-day forecast to TRADOC from Fort Gordon. Without this minimum lead-time, support cannot be guaranteed. Due to production scheduling and criticality of some CALS-controlled items, a longer forecast period is recommended.

f. Forecast training ammunition at the site of the proposed training (e.g., units going to another installation will forecast to that installation at least 90 days in advance--120 days for CALS items).

g. The installation training ammunition manager will not approve requests in excess of unit forecasts if this would cause a shortfall for another unit that forecasted properly. The installation ammunition manager may support issues to meet emergency, unforecasted requirements on a case-by-case basis after reviewing the asset posture and all other forecasted requirements.

h. Users drawing training ammunition from other than their home installation will comply with the installation's forecasting and logistics policies. The Fort Gordon ammunition manager must verify that the user forecasts only authorized ammunition.

i. When forwarding monthly WARS to Headquarters, United States Training and Doctrine Command (HQ TRADOC), the Fort Gordon training ammunition manager will verify that forecasted quantities support all training plans, unit authorizations, and scheduled institutional training.

j. Ammunition forecasts do not carry over to the next month if the requester does not draw the ammunition. The requester must resubmit the forecast through the installation training ammunition manager.

**62. Training Ammunition Management Information System (TAMIS).** Annual training ammunition authorizations correspond to units/activities by unit identification code (UIC) using the Training Ammunition Management Information System (TAMIS). Fort Gordon uses the same system to report expenditures and summarize training ammunition use. Headquarters, Department of the Army (HQDA) gives TRADOC a bulk training ammunition authorization approximately 6 months prior to the start of a fiscal year, which TRADOC subauthorizes to subordinate installations and activities. Fort Gordon bases this authorization distribution upon stated requirements, available quantities, and training priority. Recipients further subauthorize to training activities, and they may submit increase requests, with impact statements, for quantities that are not sufficient to support training. TRADOC will adjust authorizations and provide revisions before the start of the fiscal year. Due to production or procurement problems, some ammunition may not be available.

**63. Ammunition authorization procedures.** During the fiscal year, training brigades may request authorization changes from their support major command (MACOM). Fort Gordon supports these change requests as much as possible.

a. Units will use long-range requirements reported to their MACOM to establish individual fiscal year requirements.

b. The MACOMs issue initial installation authorizations approximately 4 months prior to the start of a fiscal year. This allows time for unit training ammunition managers to review and update their requirements and to request, with training impact justification, additional authorizations.

c. The MACOMs satisfy training ammunition authorization shortfalls when possible by redistribution of authorizations, identification of substitute items, or acquiring additional authorizations from HQDA.

d. Throughout the fiscal year, the Fort Gordon ammunition manager will attempt to satisfy unresolved authorization shortages when training ammunition authorizations change with the training units MACOM.

e. Units may request authorization changes to their MACOM by using the following format (show installation totals only) example:

| DODIC | Current Auth | Plus/minus | Required |
|---|---|---|---|
| A071 | 50,000 | +25,000 | 75,000 |

JUSTIFICATION: Approved POI change added 10 rounds per 11B10 OSUT student.

f. MACOMs approve training ammunition authorization changes in writing or by the TAMIS Program.

g. MACOMs/Installation training ammunition managers may adjust subauthorizations between units under their control, with the following exceptions:

(1) Do not exceed installation training ammunition authorizations.

(2) Do not exchange authorizations between units of different MACOMs.

**64. Approval.** The Fort Gordon training ammunition managers must use TAMIS to validate training ammunition requests before approving any issues.

a. Each user must have forecasted training ammunition use, and they may not exceed their authorization.

b. Before a request for issue of training ammunition (DA Form 581) is presented to the installation ASP, the Fort Gordon training ammunition manager must validate or approve it.

c. TAMIS provides several options for authenticating subauthorizations, and installation training ammunition managers should not approve training ammunition requests unless supported by TAMIS authorizations. However, the Fort Gordon ammunition managers must take all steps to verify the unit's authorization before stopping training. Recommended procedures are:

(1) Contact the unit's higher headquarters.

(2) Use authorized substitute munitions.

(3) Request TRADOC assistance.

**65. Reconciliation.**

a. Reconciliation is the process of assuring accountability for all issues of ammunition through the:

(1) Return of unused serviceable and unserviceable ammunition.

(2) Return of expended brass, pins, links, ammunition packing material, and other salvage items.

(3) Verification by the ASP that the returned items account for the ammunition issued, as per DA Pam 710-2-1.

b. Units will account for all expended ammunition packing material, residue, and brass. The ASP must provide supported units a copy of the residue (casings, links, pins, etc.) that they must return at the completion of training.

c. In the event of any overages or lost, stolen, or missing ammunition, initiate administrative action per AR 735-5. In the case of lost, stolen, or unaccounted for sensitive items, AR 190-11 or AR 15-6, may require additional action.

d. DA Pam 710-2-1 provides for small arms and pyrotechnic residue, which cannot be completely recovered due to range, terrain, or climatic conditions. This does not preclude the return of all outside packaging (wire bound boxes, metal cans, etc.) nor relieve the commander/range officer from direct responsibility.

e. Units will identify on all turn-in documents the document number and training event code (TEC) used for the ammunition issue.

f. Unit training ammunition POC will reconcile each training ammunition issue.

g. Units will contact the ASP at 706-791-3576 to coordinate a turn-in date and time.

h. Units failing to accomplish reconciliation will not be allowed to request ammunition until the prior DA Form 581 is cleared by the ASP. If unit's DA Form 581 is not cleared at least 5 working days after unit's training is completed, the ASP will contact the unit.

**66. Reserve Component ammunition forecasting.**

a. State Adjutants General and major Army Reserve commands submit by 1 August prior to the new fiscal year, annual forecasts to the Fort Gordon installation ammunition manager. This forecast should be by month for a full 12-month period (October-September). The forecast must agree with TAMIS authorizations. It may be necessary to fill out multiple forecasts for units training at more than one installation (i.e., annual training (AT) site, site support installation).

b. Another forecast for a 12-month period is submitted when changes occur.

c. Ammunition forecasts will also be a major topic at pre-camp conferences to discuss actual training planned, training facilities availability, and anticipated AT attendance. Forecasts will be updated as required based on results of the pre-camp conference and forwarded to the Fort Gordon ammunition manager.

d. Adjustments to forecasted requirements will be submitted as they occur, but major adjustments should be made not less than 60 days before scheduled training. Short-term major

adjustments normally do not provide enough time for the ammunition logistical system to respond.

e. State Adjutants General and major Army Reserve commands forward actual total requirements on a DA Form 581 to the Fort Gordon ammunition manager to arrive 60 days before units are scheduled to arrive for training.

f. The ASP will support reserve requirements to the maximum extent practicable. This support will include extended daily and weekend hours for receipt and turn-in of live ammunition and residue. Coordination will be made by the unit with the ASP.

**67. Storage.**

a. Storage of ammunition, including quantity distance and compatibility storage requirements, will be IAW AR 385-64, TM 9-1300-206, and this regulation. Where operation of a temporary field ammunition supply point at an installation is necessary to meet training requirements, the storage regulations outlined in TM 9-1300-206, chapter 4, section II, will be observed. Quantity distance standards will be applied when determining required distances between "Field Storage Units" (FSU) in a field ASP and external exposed sites (e.g., inhabited buildings, public traffic routes, turn-in operations, surveillance/inspection operations, ranges, firing points). Each FSU is to be considered as a single above ground storage site when determining these external distance requirements. Installation quality assurance specialist ammunition supply (QASAS) and Signal Branch Safety Office personnel will review and approve all temporary field ASP site plans prior to authorizing operations.

b. Observe the following procedures for efficient storage management:

(1) Use properly trained ammunition personnel.

(2) Preplan storage as outlined in AR 385-64. Explosive storage license requirements and procedures are outlined in AR 385-64.

**68. Issue.**

a. Individuals signing for ammunition must be listed on a valid DA Form 1687 (Notice of Delegation of Authority - Receipt for Supplies) maintained on file at the ASP. Delegation of authority will be approved with unit commander's signature on DA Form 1687. Ammunition will be issued to authorized personnel upon presentation of a properly prepared DA Form 581 which includes the TAMIS codes required by AR 5-13, appendix B. The State Adjutant General (USPFO) or major U.S. Army Reserve Command (MUSARC) must validate DA Form 581 for ARNG and USAR, respectively. DA Pam 710-2-l and AR 190-11, paragraph 7-10b, specify individuals that may be authorized to sign for security category II ammunition.

b. Ammunition lot numbers will be recorded on DA Form 581 after review of surveillance records and stock record lot cards. Cite restrictions applicable to ammunition lots issued on DA Form 581. Affected lots will be identified as either "cleared for overhead fire" or "not suitable for overhead fire" IAW TB 9-1300-385, appendixes C and D. Unserviceable/suspended ammunition will not be issued.

c. The receiving unit supply officer or authorized representative will sign the request for issue and turn-in of ammunition verifying lots and amount received. The original voucher showing lot numbers will be filed at the installation ammunition supply activity.

d. When ammunition is issued for training, the issuing activity will provide customer units with a list of residue to turn in after completion of their exercise.

e. Any restrictions on ammunition issued will be clearly annotated on all copies of the DA Form 581 and brought to the attention of the unit representative receiving the ammunition.

**69. Turn-ins.** To facilitate turn-ins and preserve ammunition quality and lot integrity, using units will keep ammunition in its original package prior to use. Unpacking and leaving ammunition exposed to the elements cause deterioration, which may adversely affect functional and physical characteristics of the items and make turn-in more difficult.

a. Upon completion of firing, the unit returns all unused ammunition, fired ammunition cartridge cases, packing components, containers, and other items (see DA Pam 710-2-1, appendix L) required by the support or training installation to the applicable property officer who will account for all rounds issued by making a check of rounds previously issued against turn-ins. Each unit or activity turning in the above items will show the original issue document number on DA Form 581, block 11. Ammunition for on-post training must be reconciled within 5 days of completion of training. ROTC units may turn in/reconcile training ammunition every 90 days when training off post. Failure to reconcile previous training issues may cause denials of future training issues until the reconciliation is accomplished.

b. Use a receiving and inspection building or a location at proper quantity distance to receive unit turn-ins. Only ammunition identified as not being removed from the original sealed overpack will be returned to the storage magazine without an inspection (conduct damage in transit inspections). A QASAS, or an appointed representative, will inspect 100 percent of the ammunition in packages with broken seals on the outer pack or other evidence of the outer containers having been opened or damaged to the point that the condition of contents could be affected. This inspection will determine serviceability of the materiel before returning it to storage. The items, which can be made serviceable by minor package repair or reassembly, shall be returned to storage after the required repairs. The condition code of the returned ammunition will be annotated on DA Form 3151-R (Ammunition Stores Slip), or local documents. The QASAS or designated representative will be responsible. Condition code entries will be legibly signed or initialed.

c. Units turning in ammunition will show national stock number (NSN), nomenclature, lot number, and quantity on the turn-in document.

d. Add the serviceable quantity returned to the balance on stock records. Unserviceable quantities shall be separately annotated and disposition determined or requested by ammunition surveillance.

e. A unit turning in unserviceable ammunition will include a statement on the DA Form 581 explaining the reason for unserviceability. The ammunition will be inspected, the serviceability status verified, and the condition code assigned by the QASAS or designated representative. Normally, the results of the inspection will be annotated on DA Form 3022-R (Army Depot

Surveillance Record). When neglect or misuse is evident, a DA Form 4697 (Department of the Army Report of Survey) or other action may be required IAW AR 735-5. Unit commanders will be notified when neglect or misuse of ammunition is identified.

f. Suspended and unserviceable ammunition will be returned to the ammunition storage activity for appropriate disposition. The local explosive ordnance disposal unit will be notified when a potentially dangerous condition exists.

g. Units use a separate DA Form 581 for turn in of residue. All residue items should be turned in to the ASP for disposal; units should not dispose of residue.

(1) The turn-in document will be marked: "Contents have been inspected. They do not contain any live rounds, unfired primers, explosives, or other dangerous material." The unit representative performing the inspection prior to delivery to the storage activity will sign this statement. An officer, warrant officer, or senior noncommissioned officer (NCO) designated in writing by the unit commander, should make this inspection.

(2) Visually inspect ammunition residue turned in as empty 100 percent with the assistance of the unit personnel making the turn-in. The unit must provide personnel to expeditiously open and reassemble containers and provide support to inspectors. Immediately prior to shipment to the Defense Reutilization and Marketing Office, depot, landfill, or any other release of residue, a designated technically qualified individual will conduct a 100 percent inspection and certify "The item (or items) listed hereon have been inspected by me and contain no items of a dangerous or hazardous nature." The QASAS or designated representative shall verify the absence of explosives, ammunition, and ammunition components using a sampling inspection IAW SB 742-1, paragraph 11-7.

(3) Follow the instructions in DOD Manual 4160.21-M, chapter VI, paragraph 37, for certification of fired small arms cartridge cases.

h. The ASPs are encouraged to maintain hours of operation that will accommodate unit turn-ins. Every effort must be made by units to reduce turn-in time by proper preparation of turn-in documents, providing sufficient personnel to handle ammunition and residue turn-ins, and ensuring all items turned in are properly assembled and completely packaged. Ensuring seals on containers of unused ammunition are not broken can expedite an ammunition turn-in; however, expenditures in excess of training requirements to avoid repackaging ammunition or reduce turn-in time are not authorized.

i. The ASP will separate material to be processed from material that has been subjected to 100 percent inspection and certified free of explosives.

**70. Ammunition stored in unit areas.**

a. Ammunition, which may be stored in unit arms rooms, is limited to items authorized by AR 385-64, tables 9-6, 9-10, and 9-11 when unit operations require immediate access to ammunition in order to perform daily no training mission requirements. Limit quantities of class/division 1.4 items stored in arms rooms (e.g., MP, security guard forces) to quantity necessary to meet one-day operational requirements. Do not store class/division 1.4 items in training unit arms rooms. Within these limitations, unit commanders responsible for each

respective arms room facility must maintain their written command authorization for storage of ammunition, by type and quantity, on file as required by TM 9-1300-206, paragraph 4-1a.

b. Unit commanders storing ammunition in arms rooms are responsible for ensuring ammunition is stored and handled IAW current DOD and DA safety regulations. Proper fire symbols and chemical hazard symbols must be displayed on all buildings where ammunition is stored. Commanders must ensure ammunition stored in arms rooms is serviceable and not suspended or restricted in a way that would preclude its use in completing the intended mission. For assistance, units will contact local supporting quality assurance specialist (ammunition surveillance) or ASP.

**71. Unit junior officers/senior NCOs.** Soldiers will be trained in range operations, ammunition accountability, and be familiar with their assigned duties to properly inspect and ensure control, use, and accountability of ammunition.

**72. Ammunition Amnesty Program**

a. Program policy. This program has a no questions asked policy. The Fort Gordon ammunition amnesty program provides a no intimidating atmosphere for soldiers or civilians to freely turn in ammunition improperly in their possession. To maintain this atmosphere and encourage use of the amnesty program, do not ask personal identification questions (name, address, unit). Questions about how they obtained the ammunition may be asked so that ammunition control can be improved. Ammunition amnesty program users are not required to answer such questions. No attempt should be made to prosecute individuals using the amnesty program since that will discourage use by others in the future.

b. Turn-in procedures. This ammunition amnesty program has multiple turn-in procedures and locations. One of the locations is Range Control. During duty hours, call Range Control at 706-791-5005/5008 or DSN 780-3576.

(1) ASP. The ASP is designated amnesty turn-in point. The ASP has the knowledgeable personnel and appropriate facilities to be your most effective turn-in point. The phone number for the ASP is 706-791-3576 and DSN 780-3576.

(2) Military Police (MP). The MP station can be designated to accept amnesty turn-ins provided they are trained to recognize hazardous items and instructed in what to do after taking possession of the ammunition. MP stations are potential sites for 24-hour a day turn-ins. The number for the MP desk is 706-791-4380. The MP desk will notify Range Control to determine the course of action to take.

(3) Amnesty boxes. Amnesty boxes are prohibited unless they meet quantity distance (QD) and explosive safety requirements for all classes of ammunition. When used, the `boxes" must be configured to notify trained personnel immediately when items are placed in the box. Personnel will respond and remove the item(s) to prevent accumulation of ammunition in the amnesty box.

(4) Chain of command. Soldiers have the option to turn in amnesty ammunition through their chain of command without fear of reprisal. The command chain must know how to return amnesty ammunition to the ASP.

c. Records. Either EOD/Range Control or the ASP will ultimately receive all amnesty turn-ins. Records should be kept on the items, quantity, date, lot number, and condition of ammunition recovered through the amnesty program. EOD will destroy any item determined to be hazardous. Any item not in hazardous condition will be inspected, picked up on records at the ASP, and returned to stock for issue if positively determined to be serviceable. The ASP will take required action for unserviceable ammunition.

d. Quarterly briefings. Company commanders will brief personnel at least quarterly on the ammunition amnesty program. Maintain records of these briefings.

**73. Ammunition found on post.** All ammunition found on post (AFOP) may be turned in through the ammunition amnesty program. When ammunition is actually found on post (or off post when coordinated with local authorities), EOD should be notified and respond to recover the item. EOD will determine when recovered ammunition is hazardous and must be destroyed and when it can be safely returned to the supply system at the ASP. Any questions pertaining to ammunition, contact the Fort Gordon Ammunition Manager, 706-791-5005/5008.

**74. Blank training ammunition.**

a. Blank adapters will be used on all weapons for which an adapter is available.

b. Blank ammunition will be inspected by OIC prior to issue for serviceability and to ensure that ball ammunition has not been intermixed. In no case will blanks and live ammunition be stored or transported in the same container or vehicle.

c. Small arms blank ammunition will not be fired at personnel at distances less than 20 meters.

d. All blanks issued to troops will be accounted for at the termination of training and all brass collected and returned to the ASP.

**75. Pyrotechnics and explosive training simulators.** Pyrotechnics and explosive training simulators will be maintained under positive control at all times. Numerous fires are caused annually due to mishandling of pyrotechnics and disregard of subparagraphs a through e, below.

a. Approval must be granted by Range Control prior to use of any pyrotechnics devices. Permission to use pyrotechnics must be requested daily through Range Control. Permission is granted based on the current fire danger category and recommendations from Signal Branch Safety Office, Forestry, and Fort Gordon Fire Department.

b. Use of pyrotechnics is prohibited during periods when the fire danger is at category 3, 4, or 5. Permission to use pyrotechnics may be granted during a category 3 fire danger classification only with detailed coordination with Range Control. Fire category 4 is a high risk activity, tracer fire must be approved by the Commanding General of Fort Gordon. Fire category 5 is an extremely high-risk activity and requires the approval of the Commanding General, TRADOC.

c. All explosive simulators (e.g., booby traps, practices, mines, etc.) will be removed from the training areas upon termination of training.

d. Unexploded pyrotechnics will be handled according to AR 385-63, chapter 18.

e. Units using pyrotechnics without permission will be reported directly to Director, DPTM. Training utilizing pyrotechnics will cease. The Chief, Range Control will submit a request to the DPTM that the OIC of the unit be decertified for a minimum of 90 days.

**76. Smoke and chlorobenzalmalononitrile (tear gas)(CS) grenades.** Smoke and CS grenades may be used subject to the following:

a. Restrictions specified in paragraph 75, above, for pyrotechnics apply. Used and unused smoke pots and grenades will be turned in to ASP upon completion of training for disposal.

b. Chief, Range Control will be notified prior to use of CS.

c. All effects of CS will remain on the installation.

d. Location and wind conditions must be considered in order to control the agent from crossing improved roads, cantonment areas, or reservation boundaries. In no case, will CS be allowed to cross into the areas listed above.

e. When using CS, all personnel likely to encounter the agent will have a serviceable protective mask available for their use.

**77. Field ammunition storage.**

a. References.

(1) TM 9-1300-206.

(2) TM 9-1300-250.

(3) FM 5-250.

b. A field ammunition storage (FAS) site has been constructed adjacent to Range Control for the use of visiting units. The FAS may be scheduled for use through Range Control. Requirements of subparagraph d, below apply. Storage of ammunition on any range is prohibited.

c. Using units must coordinate with the Chief, Range Control, prior to storing ammunition on a field site. A written request must be submitted to Range Control to establish a field ASP.

d. The minimum requirements for establishing a field ASP are as follows:

(1) Ammunition must be stacked on pallets or dunnage and separated by type and lot number. Ammunition will be covered by tarps.

(2) Two strands of concertina wire must surround the ASP. The wire will be outlined with engineer tape or white reflective tape.

(3) At least two class 2A (10 BC) rated portable fire extinguishers will be provided at the field ASP.

(4) Two roving guards with weapons and loaded magazines (NOT IN WEAPON) will conduct continuous patrolling of the ammunition supply point. Guards will have operable flashlights, an access roster, and a means of summoning assistance.

(5) The location of any field ASP will be determined by the Chief, Range Control.

(6) Distances between explosives, roads, buildings, and troops in the open will be computed with cooperation from the Signal Branch Safety Office, Post ASP, and the Chief, Range Control. Ammunition stored in vehicles (e.g., 155mm artillery) will be separated by at least 100 feet (see TM 9-1300-206).

e. Using unit commander is responsible for the safety and security of the field ASP.

f. Using unit commander is responsible for communication with the guards at the ASP.

g. Using unit commander is responsible for posting of access at the ASP.

h. See AR 190-11 for further guidance.

## Section IX. Helicopter Operations

**78. Helicopter operations procedures.** Pilots conducting helicopter operations or training on the Fort Gordon Military Reservation will use the following guidance:

a. Comply with operating and safety requirements specified in appendix H of this regulation.

b. Prior to conducting operations on the reservation, the pilot in command or unit operations personnel will:

(1) Check notice to airman for notice of activation of restricted areas R-3004.

(2) Contact Range Control on 42.00 FM or ultra high frequency (UHF) 356.450 prior to entering installation boundaries.

(3) Contact Range Control by phone (791-3842/5005) to verify notice to airman, reason for notice to airman, and intent to conduct operations within the restricted areas. If R-3004 is inactive, no further action is required.

c. While operating within activated R-3004, comply with the following:

(1) Artillery firing. Range Control or artillery unit will provide location of active/scheduled firing points. Operations within 500 meters of an active firing point along the gun target line prohibited.

(2) Remain outside artillery impact area and/or other areas as directed by the Chief, Range control.

(3) Monitor Air Force frequency 356.450 (UHF).

## Section X. Air-to-Ground Operations

**79. Air-to-ground operations.** For air-to-ground procedures, operations, and scheduling, see appendix I of this regulation.

## Section XI. Accident/incident Plan

**80. Accidents.**

a. In case of an accident involving the use of a weapon or ammunition, the OIC of the range or safety officer will:

(1) Call an immediate CEASE- FIRE on the range.

(2) Call Range Control at 791-5005/5008. Use FM radio frequency 42.00 or Motorola radio to contact Range Control if no phone is available. Range Control will notify DDEAMC if ambulance support is needed.

(3) Care for the injured.

(4) Notify Range Control and furnish the following information:

(a) Is an ambulance required?

(b) Range, training area, grid location.

(c) Type of injury.

(d) Name of the individual(s) involved.

(e) Rank.

(f) Social security number.

(g) Unit assigned.

(h) Time.

(i) Place.

(j) Circumstance.

(k) Condition of the injured.

(5) After duty hours contact CDO (791-4517/791-4518).

Note: Range Control is operational Monday-Friday, 0730-1600, and when live firing is conducted. If no ranges are operational on weekends/holidays, Range Control will be closed. If no phone is available to call ambulance, transport injured soldier immediately to hospital.

(6) Weapon and unexpended ammunition will not be moved until an investigation is made by the Chief, Range Control.

(7) Ensure all firing data set on weapon remains unchanged (if applicable).

(8) Follow Range Control instructions concerning continuation of firing.

(9) Submit DA Form 285 (Accident Report) through command channels to the Signal Branch Safety Office.

(10) Range Control notifies DPS if serious incident report is requested.

b. Malfunctions/Misfires.

(1) Malfunctions/misfires must be handled correctly.

(2) OIC/NCOIC must be knowledgeable of misfire procedures for appropriate weapon system. Time is of essence.

(3) At a minimum, keep weapon up and down range, evacuate. Follow misfire procedures as outlined in appropriate weapons manual. If these steps fail to correct the malfunction, firing will be suspended and the Chief, Range Control notified.

(4) Misfires should be returned to the post ammunition depot upon completion of firing.

(5) Malfunctions/misfires are a unit responsibility, not Range Control.

(6) Follow instructions of the Chief, Range Control concerning continuation of firing.

c. The Chief, Range Control, will:

(1) If the extent of the injury requires medical evacuation, dispatch the nearest ambulance to the scene of the accident or malfunction.

(2) Notify the Chief, Plans, Operations, and Training Division, DPTM and Signal Branch Safety Office in the event of an accident/ malfunction relaying the information above.

(3) Notify the unit commander concerned.

(4) Notify the Ammunition Section and the Maintenance Officer, DPW, in the event of a malfunction.

**81. Action to be taken upon report of missing person(s).**

a. Any individual discovering a person missing notifies the OIC or NCOIC.

b. Any individual on site takes the following actions, in the listed:

(1) Call Range Control or CDO during non-duty hours giving his exact location and furnishing the following information:

(a) Name, rank, social security number of individual missing.

(b) Unit of assignment.

(c) Time and date person(s) was/were discovered to be missing.

(d) Circumstances.

(2) Inform the commanding officer of the unit concerned.

(3) Organize search parties consisting of a minimum of five persons each including an NCOIC. Two-way radios may be obtained at Range Control. The number of search parties should be limited to the number of radios available.

(4) Set up roving patrols using as many vehicles and persons as necessary. Under no circumstances will roving patrols leave the main route of travel to enter an impact area without approval of Range Control.

(5) Hold a muster after the missing person(s) has/have been found and all search parties have returned. Upon determination that all persons are present and accounted for notify Range Control/CDO.

c. During the conduct of the search, the individual in charge will:

(1) Maintain radio contact with each patrol.

(2) Keep Range Control posted as to the progress of the search.

d. Upon being notified that a person(s) is/are missing, the Chief, Range Control:

(1) Orders an immediate CEASE-FIRE on all ranges involved.

(2) Notifies the following:

(a) Chief, Plans, Operations, and Training Division.

(b) Director, Plans, Operations, Training, and Mobilization (DPTM)

(c) Desk Sergeant, DPS.

(d) Chief, Signal Branch Safety Office.

(e) Upon notification that the missing person(s) has/have been found and that all search parties are physically accounted for, the Chief, Range Control will lift the CEASE-FIRE on ranges involved.

**RELEASE AND HOLD HARMLESS AGREEMENT**

The undersigned is aware of the provisions as follows:
In consideration of receiving permission from the United States Army to view firing on ranges at the Fort Gordon Military Reservation, the receipt of such permission being hereby acknowledged, I hereby release the United States Government, its agents, officers, servants and employees, from any and all liability, claims, demands, actions, and causes of action whatsoever, arising out of or related to any loss, damage, or injury, including death, that may occur from any cause during participation at Fort Gordon Military Reservation. Furthermore, I will indemnity the United States Government, its agents, officers, servants, and employees and save it or them harmless from and against any and all claims, actions, damages, liabilities, and expenses in connection with loss of life, personal injury, and/or damages to property arising from and out of any occurrence in, upon, or at ranges including the parking lot of any property adjoining ranges occasioned wholly or in part by any of my actions or omissions. In the event the United States Government, its agents, officers, servants, and/or employees shall without fault on it or their part be made a party to any litigation commenced by or against the signee. The signee shall protect and hold the United States Government, its agents, officers, employees, and/or servants harmless and shall pay all costs, expenses, and reasonable attorney's fees incurred or paid by the United States Government, its agents, officers, servants and/or employees in connection with such litigation.

**Figure 1. Sample of Release and Hold Harmless Agreement**

# APPENDIX A

# REFERENCES

**Section I.**
**Required Publications.**

**AR 5-13**
Training Ammunition Management System

**AR 15-6**
Procedures for Investigating Officers and Boards of Officers

**AR 40-5**
Preventive Medicine

**AR 95-2**
Air Traffic Control, Airspace, Airfields, Flight Activities and Navigation Aids

**AR 190-11**
Physical Security of Arms, Ammunition and Explosives

**AR 200-1**
Environmental Protection and Enhancement

**AR 385-62**
Regulations for Firing Guided Missiles and Heavy Rockets for Training, Target Practice and Combat

**AR 385-63**
Policies and Procedures for Firing Ammunition for Training, Target Practice and Combat

**AR 385-64**
U.S. Army Explosives Safety Program

**AR 700-22**
Worldwide Ammunition Reporting System (WARS)

**AR 735-5**
Policies and Procedures for Property Accountability

**DA Pam 710-2-1**
Using Unit Supply System

**DOD 4160.21-M**
Defense Materiel Disposition Manual

**FM 5-250**
Explosives and Demolitions

**FM 6-50**
Tactics, Techniques, and Procedures for the Field Artillery Cannon Battery

**FM 23-8**
M14 and M14A1 Rifles and Rifle Marksmanship

**FM 23-9**
M16A1 Rifle and M16A2 Rifle Marksmanship

**FM 23-23**
Antipersonnel Mine M18A1 and M18 (Claymore)

**FM 23-31**
40-MM Grenade Launcher, M203

**FM 23-33**
60-MM Heat Rocket, M72A1, M72A2 (Light Antitank Weapon)

**FM 23-35**
Combat Training with Pistols and Revolvers

**FM 23-67**
Machine Gun, 7.62MM, M60

**FM 25-4**
How to Conduct Training Exercises

**SB 742-1**
Inspection of Supplies and Equipment

**TB 9-1300-385**
Munitions Restricted or Suspended

**TC 23-14**
Sniper Training and Employment

**TC 57-1**
The Jumpmaster

**TM 9-1300-206**
Ammunition and Explosives Standards

**TM 9-1300-250**
Ammunition Maintenance

**USASC&FG Reg 420-5**
Hunting, Fishing, Trapping, and Horseback Riding Regulations

**USASC&FG Reg 420-7**
Endangered Species Regulation

**Section II**
**Related publications**

**AR 95-1**
Flight Regulations

**AR 200-2**
Environmental Effects of Army Actions

**AR 210-21**
Army Ranges and Training Land Program

**AR 350-1**
Army Training

**AR 350-6**
Army-Wide Small Arms Competitive Marksmanship

**AR 385-10**
The Army Safety Program

**AR 385-16**
System Safety Engineering and Management

**AR 385-30**
Safety Color Code Markings and Signs

**AR 385-40**
Accident Reporting and Records

**AR 385-61**
The Army Chemical Agents Safety Program

**AR 420-74**
Natural Resources: Land, Forest, and Wildlife Management

**FM 21-11**
First Aid for Soldiers

**FM 22-6**
Guard Duty

**FM 23-11**
90-MM Recoilless Rifle, M67

**FM 23-30**
Grenade and Pyrotechnic Signals

**FM 34-64**
Electronic Security (ELSEC) Techniques

**TC 24-20**
Tactical Wire and Cable Techniques

**TC 25-1**
Training Land

**TM 9-1300-214**
Military Explosives

**USASC&FG Reg 210-22**
Facilities Engineering Services and Supplies

**Section III**
**Prescribed Form**

**FG Form 6729-R-E**
Range Safety Certification

**Section IV**
**Related Forms**

**DA Form 285**
U.S. Army Accident Report

**DA Form 581**
Request or Issue and Turn-In of Ammunition

**DA Form 1045**
Army Ideas for Excellence Program (AIEP) Proposal

**DA Form 1687**
Notice of Delegation of Authority-Receipt for Supplies

**DA Form 2028**
Recommended Changes to Publications and Blank Forms

**DA Form 3022-R**
Army Surveillance Record

**DA Form 3151-R**
Ammunition Stores Slip

**DA Form 4697**
Department of the Army Report of Survey

# APPENDIX B

# AVAILABLE RANGES AND CHARACTERISTICS

## B-1. RANGE 1

Range Characteristics:

a. Type: 25-Meter Zero.

b. Firing Points: 110.

c. Weapon/Ammo Used: M-16/5.56mm.

d. Control Tower: Yes.

e. Bleachers: 1/120 Man Set.

f. Outlets: 1.

g. Facilities: (See special notes, subparagraph m below).

h. Communications: Telephone/Radio.

i. Targets: 25 Meter. Zero.

j. Lights: No.

k. Mess Area: No.

l. Ammo Point: 1.

m. Special Notes:

(1) Portable toilets/range house.

(2) Good visual aids.

n. Tracer fire not authorized.

## B-2. RANGE 2

Range Characteristics:

a. Type: Alternate Pistol Qualification Course

b. Firing Points: 24.

c. Weapons/Ammo Used: .22, 32, 357, 41, and.45 cal and 9mm.

d. Control Tower: No.

e. Bleachers: 1.

f. Outlets: 2.

g. Facilities: 1 range house/1 portable toilet.

h. Communication: Portable radio/telephone.

i. Targets: Pistol qualification silhouette target.

j. Lights: No.

k. Primary User: Not applicable.

l. Mess Area: No.

m. Ammo Points: 1 ammo table.

n. Tracer fire not authorized.

o. Special Note: Conduct of Range tables I, II, III, and IV, for the pistol may be fired on this range and the Standard American type target used for training and completion firing only will be used.

p. Safety Precautions:

(1) Before personnel proceed forward of the firing line, weapons will be unloaded and placed upon the pistol stand with bolts open and slides back.

(2) Additional safety instructions pertinent to the firing of the pistol are listed in FM 23-35, paragraphs 24 and 106.

**B-3. RANGE 4**

Range Characteristics:

a. Type: Known Distance (Rifle Marksmanship Range).

b. Firing Points: 55.

c. Weapons/Ammo Used: M-14/M-16 7.62 and 5.56mm or.22 cal with/sub-cal device.

d. Control Tower: No.

e. Bleachers:0.

f. Outlets: No.

g. Facilities: 1 portable toilet.

h. Communications: portable radio.

i. Targets: Known Distance Type.

j. Lights: No.

k. Primary User: Special Reaction Team and National Marksmanship Competition

l. Mess Area: No.

m. Ammo Points: No.

n. Special Notes:

(1) 6-Firing Berms.

(2) Range Control will furnish bullhorn.

(3) Unit must furnish FM communication for target pit.

(4) Known Distance Range has 20 targets with firing lines at 200, 300, 400, 500, 600, and 1,000 meters.

o. Rifle and Sniper Marksmanship Training:

(1) References.

(a) FM 23-8.

(b) FM 23-9.

(2) Safety Precautions:

(a) Pit personnel "will wear Kevlar helmets."

(b) Safety precautions listed in above references are applicable during firing.

(c) Personnel will not proceed forward of the firing line until all weapons have been cleared, weapons placed on the firing point or in racks with the bolts open.

(d) Under no circumstances will personnel go downrange. Equipment such as public address systems and vehicles required in the pit area will be pulled in as close to the target line as possible.

(e) Personnel will not climb on target frames or carriers for any reason, while firing is in progress. If a target jams and it is necessary to continue using it, the pit officer will request the OIC of the firing line to impose a check-fire until the difficulty is corrected.

(f) When firing the 500-, 600-, and 1,000-meter lines, the occupying unit will control traffic on the road between Ranges 4 and 5. Traffic will not be allowed to pass when firing is in progress.

(g) If a weapon fails to fire and the weapon can be cocked without opening the bolt, cock and make one additional attempt to fire. If the weapon still fails to fire, wait 10 seconds before opening the bolt to remove the round. If the weapon CANNOT BE RECOCKED without opening the bolt and extracting the round, wait10 seconds from the failure to fire before actuating the bolt to remove the round. The safety officer or the OIC of firing will immediately make a physical check of the weapon that malfunctioned to ascertain that the bore is clear before allowing the firer to continue firing.

**B-4. RANGE 6**

Range Characteristics:

a. Type: Record Fire (IRETS).

b. Firing Points: 10.

c. Weapons/Ammo Used: M-16/5.56 mm.

d. Control Tower: Yes.

e. Bleachers: 4/120 Man Set.

f. Outlets: Yes.

g. Facilities: 1 range house/range training complex, 2 portable toilets.

h. Communication: Telephone/radio.

i. Targets: Electrical M62

j. Lights: Yes.

k. Primary User: Active Duty/Reserve Components.

l. Mess Area: Yes.

m. Ammo Point: 1.

**B-5. RANGE 7**
Range Characteristics:

a. Type: 25 meter Zero.

b. Firing Points: 20.

c. Weapons/Amino Used: M16 5.56mm.

d. Control Tower: Yes.

e. Bleachers: 2/120 Man Sets.

f. Outlets: Yes.

g. Facilities: 1range house/2 portable toilets.

h. Communications: Radio.

i. Targets: 25 meter Zero.

j. Lights: No.

k. Primary User: Not applicable.

l. Mess Area: No.

m. Ammo Point: 1.

n. Tracer fire not authorized.

**B-6. RANGE 8**
Range Characteristics:

a. Type: 25-Meter Zero.

b. Firing Points: 32.

c. Weapons/Ammo Used: M-16/5.56mm.

d. Control Tower: Yes.

e. Bleachers: 2/120 Man Sets.

f. Outlets: Yes.

g. Facilities: 1range house/2 portable toilets.

h. Communications: Telephone/radio.

i. Targets: 25 Meter Zero.

j. Lights: No.

k. Primary User: Not applicable

l. Mess Area: No

m. Ammo Points: 1.

n. Tracer fire not authorized.

**B-7. RANGE 9**

Range Characteristics:

a. Type: Record Fire (RETS).

b. Firing Points: 16.

c. Weapons/Ammo Used: M-16/5.56

d. Control Tower: Yes.

e. Bleachers: 1/120 Man Sets.

f. Outlets: Yes.

g. Facilities: 1 range house/2 portable toilets.

h. Communications: Telephone/radio.

i. Targets: M31Al.

j. Lights: No.

k. Primary User: Not applicable.

l. Mess Area: No.

m. Ammo Points: 1

n. Tracer fire authorized.

**B-8. RANGE 10**
Range Characteristics:

a. Type: Military Police Skill and Alternate Pistol Qualification Course.

b. Firing Points: 10.

c. Weapons/Ammo Used: 45, 9mm, and 12 Gauge Shotgun. Ammo: .45 cal, 12 Gauge Buckshot/Slugs.

d. Control Tower: No.

e. Bleachers: 1.

f. Outlets: Yes.

g. Facilities: 1 portable toilet.

h. Communication: Telephone/radio.

i. Targets: M31A1

j. Lights: No

k. Primary User: Not applicable.

l. Mess Area: No.

m. Ammo Point: 1

n. Tracer fire not authorized.

o. Special Notes:

(1) Public address system or bullhorn may be signed for at Range Control.

(2) Range 10 is a multipurpose range which allows for the firing of the **.**45 cal, 9mm pistol, and riot shotgun.

(3) Before personnel can proceed from one firing line to another, all weapons will be **unloaded, cleared, placed on safe, and kept pointed up and down range during movement**.

(4) Rappelling can be conducted from the rappelling tower located on Range 10. The OIC of Rappel Tower must be rappel master qualified.

p. Military Police Marksmanship Training References.

(1) FM 23-9.

(2) FM 23-35.

(3) AR 385-63.

(4) TC 23-14

(5) Range SOP

**B-9. RANGE 11**
Range Characteristics:

a. Type: Record Fire (RETS). Night fire, NBC fire.

b. Firing Point: 16

c. Weapons/Ammo Used: M-16/5.56mm.

d. Control Tower Yes.

e. Bleachers: 2/120 man set.

f. Outlets: Yes.

g. Facilities: 1 range house/2 portable toilets.

h. Communications: Radio/Telephone.

i. Targets: M31A1.

j. Lights: No.

k. Primary User: Not applicable.

l. Mess Area: No.

m. Ammo Points: 1.

n. Tracer fire authorized.

**B-10. RANGE 14**
Range Characteristics:

a. Type: M249 Saw and 60 Machine-gun Qualification and Familiarization.

b. Firing Points: 4.

c. Weapons/Ammo Used: M-60, MG 7.62mm ball/tracer, M249 MG 5.56mm

d. Control Tower: 1 tower.

e. Bleachers: 6/120 man sets.

f. Outlets: 2.

g. Facilities: Range house.

h. Communications: Radio/Telephone.

i. Targets: M31A1.

j. Lights: No.

k. Primary User: Not applicable.

l. Mess Area: Yes.

m. Ammo Points: 1.

n. Tracer fire is authorized.

o. Special Notes:

(1) Basic 10-meter zero range, left side of control lower and bleachers, eight lanes.

(2) Transition Range, right side of control tower, four lanes.

(3) Targets on Transition Ranges are located 400-8(X) meters front the fire line.

(4) This range is designed for Zero, Record, and Transition firing. Units may conduct familiarization type firing within the limitations of the range.

(5) Firing for practice and record can be accomplished on this range.

(6) Transition firing gives the gunner experience necessary to progress from the basic (10-meter) range firing to field firing. It is also the final phase of a gunner's qualification.

p. M60 Machine-gun Zero, Record and Transition:

(1) References:

(a) FM 23-67.

(b) AR 385-63

(2) Safety Precautions:

(a) The OIC of firing will see that no firing is directed outside the right or the left safety limits. Black and white-stripped panels mark Right and Left safety limits.

(b) No personnel will be permitted in front of the firing line prior to clearance and inspection of all weapons on the firing line.

(c) Movement downrange to place silhouette targets will be made only after securing permission from Range Control. The area to the front of both ranges is in the Small Arms Impact Area and permission must be granted from Range Control.

(d) If a misfire or stoppage occurs on the M60, the following procedures will be followed:

(3) Keep round locked in the chamber for 5 seconds in the event a hang fire develops.

(4) After the 5-second wait, open the boll and extract the round.

(5) If the round is not extracted or cannot be extracted within 5 seconds, and the barrel is hot, close the bolt and allow the round to remain locked in the chamber for 5 minutes. Due to the possibility of a cook off (150 rounds fired in a 2-minute period will make a barrel hot enough to produce a cook off).

(6) Additional safety precautions outlined in those FM listed, as references, are applicable.

**B-11. RANGE 15**

Range Characteristics:

a. Type: 40mm Grenade Launcher.

b. Firing Points: 8 (5 qualification and 3 familiarization).

c. Weapons/Ammo Used: M203, M791/40mm TP/HE.

d. Control Tower: Yes.

e. Bleachers: Yes

f. Outlets: 2

g. Facilities: Range Shack.

h. Communications: Portable Radio Only.

i. Targets: Stationary.

j. Lights: No.

k. Primary User: Not applicable.

l. Mess Area: No.

m. Ammo Points: 1.

n. Tracer tire not authorized.

o. M79/M203 Range:

(1) Reference: AR 385-63.

(2) Description and Capacity: This range consists of eight firing points.

(3) Communications: The occupying units will establish and maintain FM radio communications with Range Control.

(4) Special Notes:

(a) Only high explosive sand training ammunition maybe fired on this range.

(b) Tables I, II, and IV, as outlined in FM 23-31, may be fired on this range.

(c) A unit may prescribe and fire its own familiarization course, provided that all safety regulations are followed.

(5) Safety Precautions:

(a) All personnel within 100 feet of a M79 or M203 fragmentation grenade firing position will wear a kevlar helmet and hearing protection.

(b) The OIC of firing will ensure that each firer confines firing to targets located in the area to the front of his point.

(c) Firing grenades at any point closer to the firing line than the closet target is prohibited.

(d) No one, except Range Control and EOD personnel, will be permitted forward of the firing line at any time.

(e) The OIC of firing will instruct each firer to report any ammunition fired which results in a dud. At the conclusion of the day's firing, the total number of duds will be reported to Range Control.

(f) Anytime a round fails to fire, a hang-fire will be assumed and the following procedures will be followed:

(1) Firer shouts MISFIRE and keeps weapons aimed at the target.

(2) Wait 30 seconds, and then open the breech (Examine the Primer) to recock the weapon.

(3) If the primer is not dented, the firing mechanism is at fault. After the cause of failure to fire has been corrected, the round may be reloaded and fired.

(4) If the primer is dented, attempt to fire the round again. If the round fails to fire a second time, shout MISFIRE, keep the weapon aimed at the target and wait 30 seconds before removing the round. After moving the round, keep it separated from the other ammunition (place in misfire pit), and return it to Post Ammunition after completion of firing.

(5) Additional safety precautions outlined in FM 23-31 are applicable on this range.

**B-12. RANGE 16**

Range Characteristics:

a. Type: Familiarization of U.S. Weapons.

b. Firing Points: 5 - .5O cal/M-60, AT4.

c. Weapons/Ammo Used: .5O cal/M-60, 90mmRR, M-72A2 Law, and M-16 Rifle.

d. Control Tower: 1.

e. Bleachers: 1/120 Man Set.

f. Outlets: No.

g. Facilities: 2 portable toilets.

h. Communications: Portable radio of FM radio.

i. Targets: Stationary vehicles.

j. Lights: No.

k. Primary User: Not applicable

l. Mess area: Yes.

m. Ammo Points: 1

n. Authorized for tracer fire.

o. Familiarization with U.S. Weapons:

(1) References:

(a) FM 23-23.

(b) FM 23-31.

(c) FM 23-33.

(d) AR 385-63.

(2) Conduct of Range: Explanation and firing demonstration of anti-personnel mine M18 and M18A1 (claymore), 40mm Grenade Launcher, M203 or M79 (TP only), 66mm Heat Rocket, .45 cal Pistol, 5.56mm Rifle (M16), AT4, and 7.62mm Machine-gun (M60). Explanation and live fire demonstration of teamwork, suppression, cover, and concealment.

(3) It is vital all personnel be thoroughly familiar with the regulations governing the use of any weapon system used on this range.

p. Recoilless Weapon/Guided Missiles Firing:

(1) General: The operation of live fire on this range will be IAW AR 386-63, this regulation, and FMs, as appropriate.

(2) Specific:

(a) RSO will ensure that all firing is conducted as though service ammunition is being fired. No firing is to be conducted until all personnel are clear of the back-blast areas. Back-blast areas will be visually marked according to appropriate FMs when ammunition is being fired. Firing will be restricted to direct fire only. At no time will the tube be elevated higher than 10 degrees.

(b) Any duds will be reported at once to Range Control.

q. OIC Special Instructions, Recoilless Rifle/Guided Missile Firing:

(1) Prior to firing, the OIC will ensure that:

(a) Back-blast area is visibly marked as depicted in the appropriate FM.

(b) All personnel on the range are briefed on the back-blast hazard of recoilless rifle/guided missile firing.

(2) During firing. the OIC will ensure that:

(a) Personnel remain clear of the back-blast area at all times.

(b) Safety personnel ensure that no portion of anyone's body is behind the breech of the rifle when a live cartridge is in the chamber of the rifle.

(c) All loaded weapons on the firing line are pointed down range at all times.

(d) No one is forward of the firing line, unless all weapons are cleared.

(e) All safety markers are plainly visible.

(f) When targets need replacing, all weapons are cleared prior to moving personnel forward of the firing line.

(3) After firing is completed, the OIC will ensure that:

(a) All weapons are clear and breeches are open.

(b) All wire from wire guided missiles will be policed from range prior to clearance.

r. Trainfire Ranges.

(1) Reference: TM 9-1300-206.

(2) Responsibility:

(a) Schedule: Range Control Officer.

(b) Maintenance: Range Control.

(c) Conduct of Range: Occupying unit.

(3) Description and Capacity: There are two complexes, each consisting of 25-meter, Field Firing. and Record Firing Ranges.

(a) 25 meter ranges are live ranges. Range 1 has 110 firing points and Range 8 has 32 firing points.

(b) Field firing ranges are live fire ranges with targets located at a distance of 75, 175, and 300 meters from the firing line. Each range has 16 firing points.

(c) Record firing ranges are live fire ranges, which can each accommodate 16 personnel at a time. Targets are located at distances of 50,100, 150, 200, 250, and 300 meters from the firing line.

(4) Communications: The OIC will establish and maintain telephone and FM radio communications between these ranges and Range Control.

(5) Safety Precautions: Safety precautions are as outlined in above references, and as follows:

(a) All Ranges:

(1) Rifles will be inspected for clearance prior to leaving firing line.

(2) Every precaution will be taken to ensure that no person, instructor, or student has any ammunition in his possession on these ranges while off the firing line and upon departing the range.

(3) Blank ammunition will not be fired on ranges.

(b) 25 Meter Range: Firers will not be permitted to move downrange until all weapons have been cleared. The OIC will ensure that firers keep rifles pointed up in the air and pointed downrange when not firing.

**B-13. Range 18**
Range Characteristics:

a. Type: Special Operations Aviation Gunnery and Special Operations ground maneuver and live fire.

b. Aerial Gunnery area from LS7886 to LS8086 from LS7888 to LS8088 (Northern boundary McDuffie Road, Western Boundary Old Highway 47, Southern Boundary Field Artillery Impact Area (FAIA) Perimeter Road, Eastern Boundary Boggy Gut Creek.

c. Ground maneuver area from LS7686 to LS7886 from LS7690 to LS8090 (Northern Boundary Ivy Road, Western and Southern Boundary FAIA Road, Eastern Boundary Old Highway 47 to McDuffie Road intersection. Ground live fire from McDuffie Road intersection North to Ivy Road, East to Grid Line 79.

d. Weapon/ammo used: Aerial: Helicopter 7.62, AC130 Gunship 105mm, 40mm, 20mm and 7.62. Ground units: 5.56, 7.62, 40mm (smoke, illumination, or TPT).

f. Facilities: Operations building and arms room.

g. Communications: Radio (unit will supply cell phone for alternate means of communication with Range Control).

h. Special Notes:

(1) All requests for use of this range will go through 3/160th Special Operations Aviation Regiment (SOAR) prior to sending request to Range Control.

(2) No units or special events (i.e. hunting, horseback riding) will occur in any training areas adjacent to FAIA when gunnery is occurring.

(3) Any requests for observation of gunnery or Special Operations ground training will be requested through the 3/160th PAO.

i. All live firing by ground elements will be limited to firing south, east or west in the grid box for the range.

# APPENDIX C

# DROP ZONE (DZ)

## C-1. Scheduling.

a. Drop zone is a special use training facility and must be requested on an individual basis. Approval of requests for training area in which DZ is located will not constitute approval to use the DZ. Units requiring the use of DZ in conjunction with surrounding training areas must request the DZ and the training area separately.

b. Personnel acting as Drop Zone Safety Officer (DZSO), will be briefed by a representative of Range Control.

## C-2. Requirements for DZSO:

a. Have a rank of at least staff sergeant.

b. Be a qualified and current parachutist.

c. Have assisted a fully qualified DZSO at least twice before performing DZSO duties for the first time.

d. For operations involving more than four C-130s or more than two C-141s, the DZSO will meet the above criteria and have the rank of at least sergeant first class.

e. No personnel or equipment drops will be made unless the DZSO is physically present at the DZ.

f. Procedures.

g. All DZ missions must be closely coordinated with DPTM, DPW, and Signal Branch Safety Office, and Range Control.

h. The DZSO must contact Range Control a minimum of 30 minutes prior to scheduled airborne operations to verity all safety requirements have been met.

i. Contact Range Control as soon as communications have been established with aircraft.

j. The DZSO will call Range Control when aircraft are 5 minutes out from the DZ. At this time Range Control, will assure the DZSO that high trajectory firing along the aircraft's line of flight has ceased (if applicable). The cease-fire will remain in effect until Range Control has been notified by the DZSO that all aircraft has cleared. The DZSO will call Range Control as soon as the aircraft has cleared the DZ. Range Control will be **notified immediately** of any change in schedule.

k. The DZSO will establish communications with Range Control by radio and/or landline to ensure positive communication capabilities. The DZSO will maintain communications with Range Control during airborne operations in order to effect cease-fire of artillery and/or mortars in the event of emergency departure from the approved plan (if applicable). Aircraft being used in operation must have capability of communications with Range Control. The DZSO will establish and maintain ground-to-air communications with the delivering aircraft during airborne operations. If communication with the aircraft is not established or is lose the operation becomes a no-drop situation.

l. At no time will the DZSO change the flight pattern or route of the aircraft while the aircraft is within airspace restricted area R-3004, after it has been established by Range Control or airlift control element (ALCE).

m. The DZSO is responsible for coordinating with Range Control to ensure that power is turned off prior to the drop and that power is turned on when the drop is completed.

n. Vehicles other than those required for control purposes will not be permitted on the DZ, immediately preceding or during a parachute jump. DZSOs will ensure that the DZ is cleared of all other vehicles in advance of a scheduled drop and that they remain clear unfit all parachutists have landed.

o. Only after landing of all paratroopers will heavy drop recovery vehicles and ambulance be permitted on the DZ.

p. The DZSO in conjunction with DPS is responsible for spectator control on and in immediate vicinity of DZ.

q. At the completion of the drop, the DZSO will log out the DZ with Range Control and give all required information prior to breaking communications.

r. The DZSO will be responsible for the police of the DZ and spectator area and removal of all air delivery items; (e.g., platforms, bundles, webbing, trash, etc.) prior to closing of the DZ. In addition, all accidents and/or incidents will be reported to Range Control.

s. It is imperative that DZSOs follow procedures as outlined in this regulation. There are numerous activities, which can occur simultaneously during an airborne operation on the installation. Failure to do such things as making the drop at the prescribed time and/or maintaining communications with Range Control can result in the airborne operations being canceled in the interest of safety. For personnel drops, the DZSO will determine both surface winds and winds aloft IAW TC 57-1 immediately prior to the operation.

**C-3. Available drop zone.** Drop zone available for use at Fort Gordon is Preston DZ, SW comer, 870448914, NW 87048969, NE 88308969, SE 88308914.

**C-4. Use of Preston DZ.**

a. Air operations and ground occupation on DZ conflict with the firing of several artillery firing points west and east of the 88 north-south grid line.

b. All scheduled activity described in paragraph C-4a, above, will be stopped to allow airborne training.

**C-5. Electrical power cutoff.** Preston DZ is located near electrical power lines which require that the electrical power be terminated 30 minutes prior to and during any troop drops. Range Control will ensure this is accomplished by DPW.

# APPENDIX D

## RANGE CLEARANCE

**D-1**. The following procedures will be followed as a minimum in proper clearance of ranges:

a. Range area.

(1) Police mess area.

(2) Police bleachers.

(3) Sweep latrine.

(4) Police of complete area from firing line to Range Road.

b. Ammo point.

(1) Police of paper, etc.

(2) Police screen brass.

(3) Ensure all crates, bandoleers. clips, etc., are removed from range.

c. Firing lane.

(1) Police all brass and live ammunition from foxholes.

(2) Police foxhole and stand firing step-up.

(3) Neatly stack sandbags on top of foxhole covers with tied end facing down range.

(4) Staple now zero targets back on silhouette.

(5) Disconnect speakers and store them into range house.

(6) Return all equipment that was signed for from Range Control.

**D-2**. Remarks:

a. Police of range is a continual process. The occupying unit is responsible for police of the range during as well as after firing.

b. Any questions or recommendations to these instructions will be addressed to Range Control Officer, DPTM.

## APPENDIX E

## ARTILLERY AND MORTAR FIRING POINTS

**E-1.** Artillery and mortar firing is restricted to firing into the artillery impact area.

**E-2.** All safety requirements and procedures related to artillery and mortar firing is the responsibility of the occupying unit.

**E-3.** Safety data and overlays depicting safety fans, firing positions, and observation post requests are submitted by the occupying unit to this headquarters, ATTN: ATZH-DPP-P, 3 weeks prior to desired firing date.

**E-4**. Artillery and mortar firing points are located as indicated below:

a Firing points.

| FIRING POINT | GRID COORDINATES | TRAINING AREA |
|---|---|---|
| ALPHA - 8191 | 8182491824 | 36 |
| BRAVO - 8292 | 8247592573 | 36 |
| CHARLIE – 8381 | 8370690160 | 34 |
| DELTA - 8591 | 8527191818 | 29 |
| ECHO – 8390 | 8528290713 | 29 |
| FOXTROT - 8690 | 8693190681 | 24 |
| GOLF – 8889 | 8751289231 | 23 |
| HOTEL - 8091 | 8097191529 | 42 |
| INDIA - 8492 | 8405692559 | 28 |
| JULIET - 8291 | 8219590968 | 37 |
| KILO – 8690 | 8606590207 | 30 |
| LIMA – 8589 | 8524289708 | 30 |

b. Observation post locations.

| OBSERVATION POST | GRID COORDINATES |
|---|---|
| 1 | 80708830 |

**E-5**. Units requesting to fire artillery must designate which artillery firing point(s) they will utilize during their training exercise, (i.e., Firing Point A-8291).

**E-6.** Range 16 is the designated range for mortar demonstration firing.

**E-7**. Units requesting to fire from artillery firing points, which would like to use the adjoining training area, must request the training area separately.

**E-8.** The following procedure will be used for requesting artillery-firing points:

a. Unit.

b. Date and time group for utilization period.

c. Type of ammunition.

d. Type of equipment. (Weapon).

e. Firing point(s).

f. Training area (if needed).

g. OIC and RSO full name.

h. POC name and telephone.

i. Date and time group unit arrival. Departure.

j. Reason for training (ARTEP, AT, FTX, etc.).

k. Daily start/stop time for live firing.

# APPENDIX F

# ENVIRONMENTAL PROTECTION AND SPILL PROCEDURES

## F-1. General.

a. The policies and procedures outlined below are established to ensure maximum environmental protection of Fort Gordon Ranges and Training Areas within the framework of applicable environmental regulations and to ensure unit understanding and compliance.

b. All personnel are responsible for the protection of the environment. Maneuver damage will occur. Units will keep maneuver damage minimal by:

(1) Limiting trail usage to one road in and out of training site.

(2) Repairing damage done to training site (fill in fighting positions, trenches etc)

(3) Retrieving all equipment, wire and concertina rolls from sites.

(4) Prevention of damage to trees and brush. If a tree or large shrub prevents access of an area do not remove, call Range Control and they will notify Forestry to see if the tree or shrub can be removed.

(5) Be aware of endangered /protected species habitats and know what limitations are set for those areas.

(6) Keep vehicle movement restricted to area requested on RFMSS and Unit Environmental Checklist. There are limited tactical vehicle maneuver areas designated on Fort Gordon. If cross-country movement of vehicles is needed it must be requested on the Unit Environmental Checklist and approved for use by Range Control and ENRMO.

(7) Stay out of wetlands. There is one approved water crossing on Fort Gordon.

(8) Parking on road shoulders is prohibited unless vehicle is broke down.

c. Spill Procedures.

(1) When spill is discovered report immediately to Range Control or if after hours notify Fire Department.

(2) Unit is responsible for containment and clean up of spill. Do not dig deeper than 8 to 10 inches. Notify Range Control when this part of clean up is accomplished. Range Control will use a DRAGER Tube to determine if further clean up is necessary. This is the only Environmental Protection Agency (EPA) certified method to determine contamination levels.

(4) All materials associated with the clean up will be removed from training site in appropriate containers to prevent further contamination.

(5) Any spill greater than 10 gallons or in or near a water source is an emergency.

(6) All using units will have a Unit Spill Plan at every training site.

# APPENDIX G

## TRAINING AREA (S) CLEARANCE

**G-1.** The following procedures will be followed as a minimum in proper clearance of training areas:

a. Training Area:

(1) Police In and around boundary of training area.

(2) Fill in foxholes.

(3) Fill in sump holes.

(4) Remove trash and debris.

(5) Remove all field wire/concertina.

b. Training Area Facilities:

(1) Clean and sweep buildings.

(2) Police in and around buildings.

(3) Clean and sweep latrines.

(4) Sweep out all portable potties.

(5) Buildings not damaged.

c. Report damaged property and POL spills to Range Control.

d. Report unsafe conditions to Range Control.

**G-2**. All previous training area/range deficiencies become the unit's responsibility once training area/range is signed for.

**G-3**. Using unit responsible for police and maintenance of training area during operation. The OIC will call Range Control prior to departure for an inspection of the area. Failure to coordinate with Range Control prior to departure will affect further coordination and utilization of training areas.

# APPENDIX H

## ROTARY WING OPERATIONS

**H-1. Purpose.** To establish polices and procedures for administrative airspace control of aircraft operating over the Fort Gordon Military Reservation. To prescribe requirements to be met by aviation units and aviators prior to conducting aerial flights over Fort Gordon and operational procedures for Range Control.

**H-2. Applicability.** The procedures outlined herein are applicable to all aviators and aviation units and Fort Gordon Range Control.

**H-3. General.** The polices and procedures set forth in this appendix will govern flight procedures and issuance of hazard area advisories by Range Control on Fort Gordon reservation. This appendix is designed to allow aircraft to operate in and around live fire training areas in a safe and timely method with minimum disruption to the conduct of live firing training.

**H-4. Responsibilities.**

a. The DPTM through the airspace management element is charged with staff responsibility for planning, coordinating, and monitoring of airspace control.

b. Range Control will:

(1) Implement the provisions of this regulation and provide air corridors/route advisories to all aircraft operating on the Fort Gordon Reservation.

(2) Maintain a Fort Gordon map, 1:50,000, posted with the routes, corridors, and known points as specified in this regulation. Active ranges, DZs, and other current hazards to aviation will be posted on the map.

(3) Monitor FM at 42.00MHz, UHF 356.450, and very high frequency (VHF) frequencies published in appropriate flight information publications.

(4) Issue advisories on known hazards to aviation and provide flight following services. Overdue aircraft information will be passed to Bush Field Operations as appropriate.

c. Aviation units conducting aerial flights over Fort Gordon Reservation will ensure its pilots are familiar with this regulation and have been properly briefed IAW paragraph H-5c(6) below.

d. Aviators conducting aerial flights over Fort Gordon Reservation will be familiar with the provisions of this regulation and conduct all flights IAW advisories provided by Bush Field Tower and Range Control. In the event of unforeseen situations or emergencies, the pilot in command is responsible for the safe operation of his aircraft and keeping Bush Field/Range Control advised of the current situation.

**H-5. Airspace Control Operation.**

a. Airspace control system. This airspace control system will allow aircraft to maneuver and land within training areas affected by live fire range fails and other training with minimum interruption to ongoing training activities. This system will be controlled by Range Control. Range Control will be manned by qualified personnel at all times and will provide limited flight following and aircraft route advisories into and out of designated LZs. Range Control will maintain communications with all active ranges/firing points/range activities and provide Bush Field timely hot point or restricted area data. Range Control radio facilities will provide a backup communications system to Bush Field to furnish route advisories in the event of communications difficulty. Positive control is dependent on aircraft operating within predetermined lanes over easily identifiable terrain. The following routes/corridors (see subparagraphs b and c below) have been established to aid in flight following and provide a positive means of channeling aircraft in the vicinity of hazards such as range fans or airdrops.

b. Routes. The following route structure is designed to provide a well-defined means of navigation between major areas of the reservation. Aircraft will avoid over-flight of prohibited areas in the vicinity of routes; however, safe operations will take precedence in all instances. Fort Gordon routes are:

| ROUTE | DESCRIPTION |
|---|---|
| 1 -GREEN | BM 143 (LG 7181) north along GA 221/47 to Silver Run Church (LG769927), turn northeast to GA 278/12 at BM 156.7 (LG833967). |
| 2-RED | Intersection LG 040920 west along Tobacco Road to Gate 5, across installation to GA 78/278, turn southwest along GA 78/278 to BM 156.7 (LG833967). |
| 3-BLUE | Intersection GA Highway 1 (LG7780), northeast along GA Highway 1 to intersection GA Highway 1and Tobacco Road. |
| 4-BLACK | BM 137.8 (LG855852) north along Sandy Run Crook to BM 156.7 (LG833967). |

c. Corridors. Corridors have been developed to provide precise flight paths to be utilized in the vicinity of live fire range fans or other activities that would restrict aircraft flight. Corridors have the following airspace restrictions:

(1) Altitude. A maximum of 100 feet above obstacles. Aircraft may climb to 200 feet mean sea level or above ground level to reestablish radio communications with Bush Field Tower. Aviators will report change in altitude and Range Control will determine if the mission can be continued at the attitude. Aircraft with sling-loads will maintain safe clearance between the load and obstacles IAW unit SOP and clearance with Range Control.

(2) Airspeed. Airspeed will be adjusted to ensure ground track remains within prescribed limits.

(3) A means of determining safe routes into and out of LZs will be utilized to provide a positive and independent check prior to advising an aircraft along a route corridor. The system to be utilized is called visual plot. Range Control will maintain a transparent range fan, scale 1:50,000, for each hazard-producing activity on Fort Gordon. As a RSO contacts Range Control to open his activity, the fan for that activity is quick reference to those routes and corridors that are not affected by the fans. As the Safety Officer of a point terminates that activity. Range update of the flight control map.

(4) Request for check-fires from aircraft to Range Control may be accomplished as needed to perform certain missions, or on a priority basis, to allow access to low altitudes within range fans. Other non-emergency check-fires will be accomplished only through prior approval, prior permission is required with Range Control. The check-fires should be held to a minimum. ANY AIRCRAFT CAN REQUEST AN IMMEDIATE CHECKFIRE WHEN REQUIRED TO ENSURE SAFE AIR OR GROUND OPERATIONS.

(5) Aircraft conducting emergency missions of any type should conduct flight following operations on Range Control frequencies. Immediate check-fires will be issued to any range activity in the vicinity of emergency mission flight paths or operations.

(6) Units who conduct helicopter operation within the boundaries of Fort Gordon Reservation will ensure that all aircraft have at least one pilot on board who has:

(a) Received a thorough briefing on the Fort Gordon Reservation airspace control system from Range Control.

(b) Received a reservation/range overlay or map depicting corridors, ranges, and restricted airspace boundaries.

(7) All items in subparagraph (6), above, must be accomplished prior to an aviator being assigned pilot-in-command duties for flight into restricted area R-3004. National Guard, Reserve, or Army aviators from other installations must meet the above criteria unless waived by DPTM. Units with corridor qualified pilots may qualify other pilots in their unit IAW this appendix, however, a written verification will be forwarded to the Fort Gordon Range Control Officer prior to conduct of any operation in the Fort Gordon restricted area.

(8) Precise navigation along routes and corridors and accurate location of LZs is dependent on aviators having an accurately overprinted map with current airspace control measures. The pilot in command of rotary wing aircraft will have in his possession a map, scale 1: 50,000 annotated with the routes, corridors, and known points. This map will be easily accessible during flight.

**H-6. Administrative Flight Following Procedures.**

a. Aviators will contact Range Control prior to entering the reservation and furnish the following information:

(1) Aircraft identification (Tail number and type).

(2) Number of aircraft in flight.

(3) Aircraft position.

(4) Requested routing.

(5) Destination.

b. Routing will be requested using any of the following means:

(1) Route color identifier.

(2) Corridor number.

(3) Distance and direction from checkpoint.

(4) Grid coordinates.

c. Current location of destination will be specified using any of the following:

(1) Check point number designation.

(2) Common name.

(3) Grid coordinates.

(4) Distance and direction from checkpoint to/common name/grid.

d. Aircraft will read back all advisories given by Range Control to ensure clear understanding. Aircraft will report reaching destination and any checkpoints instructed by Range Control. Range Control will also provide aviators with ranges where lasers are being employed (if applicable).

**H-7. Safety.**

a. Range Control is responsible for informing aviators of firing areas that are in use. Individual aviators are responsible for avoiding hazardous areas.

b. Any aircraft given inaccurate or unsafe instructions by Range Control or Bush Field personnel should notify Range Control as soon as possible.

c. Aircraft flying under artillery. Target lines will advise Range Control so the firing agency can be so advised. Aircraft not intending to land at active firing points will avoid them by no less than 500 meters. Aircraft landing at active firing points will coordinate with Range Control for a check-fire 5 minutes out.

**H-8**. Contact Range Control Operations for designated LZs.

# APPENDIX I

## PROCEDURES FOR AIR-TO-GROUND OPERATIONS IN RESTRICTED AREA R-3004

### I-1. General.

a. The procedures outlined below are established to ensure maximum utilization of the Fort Gordon Restricted Airspace R-3004 and the artillery impact area in R-3004 within the framework of safety regulations appropriate operational procedures, and current range procedures.

b. The Commanding General, Fort Gordon, GA is proponent for control of restricted airspace R-3004 and therefore retains the prerogative to close the impact area R-3004 if safety or operational priorities take precedence.

### I-2. Responsibilities.

a. Commander, Fort Gordon, GA.

(1) Is the proponent for restricted Area R-3004 and control of all terrain under this area. Proponent is responsible for activation and deactivation of R-3004 in conjunction with established FAA procedures.

(2) Is responsible for coordination and scheduling for restricted Area R-3004 and Air Force utilization of restricted airspace in R-3004.

(3) Establishes procedures to request and coordinate use of the artillery impact area.

(4) Provides the necessary facility, operator, and maintenance for the surface-to-air communications radio.

b. Commander, 9th Air Force (Tactical Air Command).

(1) Is responsible for submission of training requests to Commander, Fort Gordon, GA on a timely basis and IAW procedures outlined in this appendix.

(2) Ensures safety compliance with tolerance reflected in Federal Aviation Regulation 74.

(3) Ensures crews using Fort Gordon impact area are familiar with this appendix. Responsible for activation and deactivation of R-3004 in concert with established FAA procedures.

(4) Is responsible for coordination and scheduling for restricted Area R-3004 and Air Force utilization of restricted airspace in R-3004.

(5) Establishes procedures to request and coordinate use of the artillery impact area, Fort Gordon, GA.

(6) Provide the necessary facility, operator, and maintenance for the surface-to-air communications radio.

(7) Ensures each flight begins its training runs NLT 15 minutes after training window opens. If run is started later than 15 minutes after the training window opens, coordination with Range Control, who in turn, will notify FAA.

**I-3. Conditions.**

a. Only ordnance specified in this appendix will be expended on the Fort Gordon Artillery Impact Area.

b. Only soft targets (trucks, buses, etc.,) will be fired upon while expending air-to-surface munitions.

c. The 1,900-foot mean sea level lower south of R-3004 will be avoided by at least 1 mile horizontally.

d. Air-to-surface ordnance delivery heading is restricted to delivery angle between 030 - 090 degrees.

e. All air-to-surface ordnance must be approved for use by Chief, Range Control.

f. The artillery impact area will be available for surface-to-air activity on a noninterference basis for normally scheduled Army and Army Reserve component training. No air-to-surface activity will be scheduled on weekends, national holidays, or the week of the Masters Golf Tournament.

g. Scheduling coordination and procedures IAW this appendix apply. The 9th Air Force scheduling agency is the 363d Tactical Fighter Wing, Director Operations Services (DOS), Shaw Air Force Base, South Carolina , DSN 965-3353/3250.

h. Ninth Air Force POC is Director Operations Services of Ranges (DOSOR), DSN 965-2432/ 3737.

i. The 383d Tactical Fighter Wing is responsible to ensure all air crews using the Fort Gordon range comply with the provisions of USASC&FG Regulation 210-21, Range Regulation.

j. Upon notification of a national emergency, rapid reaction force deployment, partial of full mobilization, or a nuclear accident and incident control (NAIC) in proximity to Fort Gordon, GA, R-3004 will be closed and scheduled Air Force training suspended.

**I-4. Range Procedures.** See USASC&FG Regulation 210-21.

**I-5. Scheduling.**

a. The 363d Tactical Fighter Wing, Shaw Air Force Base is responsible for the scheduling and coordination for air-to-surface operations in R-3004 and the artillery impact area. The scheduling agency will coordinate the weekly range utilization schedule with the USASC&FG Range Control, DPTM, NLT 10 calendar days proceeding the first day of the scheduled week. Upon agreement, the 363d Tactical Fighter Wing will provide the USASC&FG, ATTN: ATZH-DPT-R, the users and 9th Air Force/DOSOR with a written, approved copy of the firing schedule NLT 5 calendar days preceding the first day of the scheduled week.

b. In accordance with provisions of this appendix, a confirmed schedule will be provided by 363d Tactical Fighter Wing via hard message to Fort Gordon and all Air Force units from outside Shaw Air Force Base.

c. Agencies to be provided copies of the confirmed schedule:

(1) Scheduling units.

(2) Commander, USASC&FG, ATTN: ATZH-DPT-T, Fort Gordon, GA 30905.

(3) Plans, Operations & Training, DPTM, USASC&FG, ATTN: ATZH-DPM, Fort Gordon, GA 30905.

(4) Department of Transportation, Federal Aviation Administration, Mid-South Flight Standard, District Office, 3420 Norman Berry Drive, Suite 430, ATTN: Aviation Safety Inspector, Atlanta, GA 30354.

(5) FAA Control Tower, ATTN: Tower Chief, Route 3, Box 66, Augusta, GA 30906.

(6) Director, Operations Services, 9th Air Force, Shaw Air Force Base, SC//DOSOR//.

d. Changes and/or cancellations to the schedule will be immediately coordinated between the 363d Tactical Fighter Wing and Range Control, DPTM.

e. Point of contact for scheduling and coordination are below:

(1) USASC&FG:

(a) Range Control, DPTM, DSN 780-5005/5008.

(b) Chief, Plans, Operations and Training, DPTM, DSN 780-9536/2019.

(2) Ninth Air Force:

(a) 363d Tactical Fighter Wing/DOS, DSN 965-2353/3250.

(b) Ninth Air Force/DOSOR, DSN 965-2856/3701.

f. As a minimum the following information will be provided in the confirmed schedule:

(1) Schedule week.

(2) Block times and maximum altitude for each day encompassed by the schedule.

(3) Type and number of aircraft for each block time.

(4) Ordnance that will be delivered.

(5) Unit.

(6) Point of contact at unit level. (NOTE: POC for scheduled operations will be responsible for keeping Range Control, DPTM informed of any flight delays/changes at DSN 780-5008/5005)

g. Schedule request format. The following information will be provided by the 363d Tactical Fighter Wing range scheduler to Range Control, DPTM, DSN 780-3842/5005. At the initial contact for coordination and scheduling on a weekly basis (Monday - Friday) to include day periods by hours used and are submitted and coordinated for initial approval/disapproval NLT 10 calendar days prior to the first day or the schedule week. All times will be local.

| DAY | BLOCK TIME(S) | TYPE/3A/C | ORDNANCE | UNIT |
|---|---|---|---|---|
| e.g. Mon | 0800-0830 | 4/F- 1 6 | BDU-33 | 363 TFW/19TFS |
| | 1030-1100 | | | |
| | 1400-1430 | | | |

**I-6. Operational Procedures.**

a. The George Clausen Pond and surrounding farm area will not be over-flown below 2,000 feet ground level.

b. Do not fly closer than 1mile horizontally to the 1,900 feet mean sea level tower just south of R-3004.

c. Arming switches will be on safe anytime aircraft is outside R-3004.

d. Ordnance release headings will be between 30 - 90 degrees.

e. Random dry attacks from any heading are authorized on R-3004.

f. Aircraft will not enter R-3004 initially without radio contact clearance by Fort Gordon Range Control on the designated UHF frequency.

g. Flight leaders will clear off with Fort Gordon Range Control when departing the area.

h. Flights will enter R-3004 from the Bulldog D. Mid-operations are not below 500 feet above ground level and above 12.000 feet mean sea level.

i. No ordnance will be dropped until the flight leader has ascertained that the impact area is cleared specifically to do so.

j. The 363d Tactical Fighter Wing office has the primary responsibility for the operational conduct of its aircrews and the aircrews of other units scheduled for using Fort Gordon impact area. The 363d Tactical Fighter Wing will establish operating procedures, restrictions, limitations, Fort Gordon impact area/target charts, etc., for all users to include addressees in paragraph I-5c, above.

k. Fort Gordon range procedures briefing will be accomplished between using units and the 363d Tactical Fighter Wing/DOW or their designated representative prior to utilizing the Fort Gordon R-3004 and the impact area. Using units will receive, at the lime of their initial briefing, copies of publications from Range Control. Unit aircrews will be thoroughly briefed on the Fort Gordon procedures prior to using R-3004 and the impact area by Range Control.

**I-7. Range Compatible Use Zone.**

a. Mark-106 bombs will be delivered at speeds not exceeding 650 knots below l,000 feet above ground level in level flight.

b. General purpose bombs and battery display unit (BDU) bombs will be delivered at speed not exceeding 520 knots between 1,500 feet above ground level and 12,000 feet mean sea level at 20 - 60 degree dive angle. All ordnance delivery heading will be between 030 and 090 degrees.

**I-8. Air-to-surface ordnance**. The following inert and/or practice air-to-surface ordnance is approved for expenditure on the Fort Gordon impact area. When the use of Hot smoke spotting charge present a range fire hazard. Only Cold smoke spotting charges will be used. The Fort Gordon Range Control will notify the 363d Tactical Wing when conditions call for the use of Cold smoke. When Cold smoke is directed, it will be clearly stated in the 363d Tactical Fighter Wing and user unit schedule:

a. NW-821 inert (500 lb).

b. MK - 106 w/spotting charge (51 lb).

# GLOSSARY

## Section I
## Abbreviations

**AFOP**
ammunition found on post

**AIEP**
Army Ideas for Excellence Program

**ALCE**
airlift control element

**ammo**
ammunition

**AR**
Army regulation

**ARNG**
Army National Guard

**ARTEP**
Army Training and Evaluation Program

**ASP**
ammunition supply point

**AT**
annual training

**ATV**
all terrain vehicle

**BDU**
battery display unit

**Bn**
battalion

**Btry**
battery

**C/FB**
Chief of Firing Battery

**C/Sec**
Chief of Section

**cal**
caliber

**CALS**
Committee for Ammunition Logistics

**CDO**
Center Duty Officer

**Cdr**
commander

**CPL**
Corporal

**CS**
chlorobenzalmalonitrile

**DA**
Department of the Army

**DDEAMC**
Dwight David Eisenhower Army Medical Center

**DHS**
Directorate of Health Services

**DOD**
Department of Defense

**DODIC**
Department of Defense identification code

**DOIM**
Directorate of Information Management

**DOS**
Director Operations Services

**DOSOR**
Director Operations Services of Ranges

**DPS**
Directorate of Public Safety

**DPTM**
Directorate of Plans, Training, and Mobilization

**DPW**
Directorate of Public Works

**DRM**
Directorate of Resource Management

**DSN**
Defense Switched Network

**DZ**
drop zone

**DZSO**
Drop Zone Safety Officer

**ENRMO**
Environmental and Natural Resources Management Office

**EOD**
Explosive Ordnance Disposal

**EPA**
Environmental Protection Agency

**FAA**
Federal Aviation Agency

**FAIA**
Field Artillery Impact Area

**FAS**
field ammunition storage

**FDC**
fire direction center

**FDO**
fire direction officer

**FG**
Fort Gordon

**FM**
Field manual, frequency modulated

**FORSCOM**
United States Army Forces Command

**FSU**
field storage units

**FTX**
field training exercise

**GA**
Georgia

**GSA**
General Services Administration

**HE**
high explosive

**HQ TRADOC**
Headquarters, United States Training and Doctrine Command

**HQDA**
Headquarters, Department of the Army

**IAW**
in accordance with

**ICM**
improved capability munitions

**ITAM**
integrated training area management

**1b**
pound

**LTC**
lieutenant colonel

**LZ**
landing zone

**MACOM**
major command

**MACS**
Machine Arcade Combat Simulator

**MHz**
megahertz

**mm**
millimeter

**MP**
military police

**MUSARC**
Major U.S. Army Reserve Command

**NAIC**
nuclear accident and incident control

**NBC**
nuclear, biological, chemical

**NCO**
noncommissioned officer

**NCOIC**
noncommissioned officer in charge

**NCS**
Net Control Station

**NG**
National Guard

**NLT**
not later than

**NSN**
National stock number

**off**
officer

**OIC**
officer in charge

**PAO**
Public Affairs Office

**POC**
point of contact

**POL**
petroleum, oils, and lubricants

**POV**
privately owned vehicle

**PSP**
perforated steel platform

**QASAS**
quality assurance specialist ammunition supply

**QD**
quantity distance

**RCSD**
Reserve Component Support Division

**RFMSS**
Range Facility Management Support System

**ROTC**
Reserve Officers' Training Corps

**RSO**
Range Safety Officer

**SFC**
sergeant first class

**SIR**
Serious Incident Report

**SOP**
standing operating procedures

**SSG**
staff sergeant

**TAMIS**
Training Ammunition Management Information System

**TC**
Training circular

**TEC**
training event code

**TM**
Technical manual

**TRADOC**
United States Army Training and Doctrine Command

**U.S.**
United States

**UCMJ**
Uniform Code of Military Justice

**UHF**
ultra high frequency

**UIC**
unit identification code

**USAR**
United States Army Reserve

**USASC&FG**
United States Army Signal Center and Fort Gordon

**USPFO**
United States Property and Fiscal Officer

**VE**
velocity error

**vhf**
very high frequency

**WARS**
Worldwide Ammunition Reporting System

**XO**
executive officer

## Section II
## Terms

**Cease firing**
A command to immediately discontinue firing. The OIC, RSO, NCO, or any person observing an unsafe condition at the firing location may give the command.

**Check fire**
A cease-fire imposed by Range Control.

**Combat Control Team**
A team which clears and secures a DZ/LZ.

**Combined Arms Live Fire Exercise (CALFEX)**
A company or larger maneuver elements employing combat formations using supporting mortar, artillery, Army aviation, and/or close air support (CAS) fares.

**Drop Zone Safety Officer**
A qualified parachutist with the rank of at a least Staff Sergeant who is responsible for aspects of safety during an airborne operation (see appendix C).

**Dry Facility**
A facility/range which is in use, but on which no ammunition is being fired.

**Dud Area**
An area designated by the Range Control Officer in which one or more non-detonated explosive items are present which create a hazard to persons or property. This definition includes all impact areas. The sign is marked DANGER DUD AREA unauthorized entry into this area and handling or removal of unexploded ammunition is extremely dangerous and prohibited under penalties provided by law.

**Firing Point**
Any area designated by Range Control Officer for the firing of indirect-fire weapons using live ammunition.

**Impact Area**
An area designated by the Range Control Officer in which all live ammunition fired from designated range or firing points can be expected to impact detonate. Impact areas are further defined as artillery and small arms impact areas. The perimeters of impact areas arc clearly marked by signs reading DANGER IN4PACT AREA, KEEP OUT. The impact area is within the approved surface danger zone.

**Maintenance**
Includes routine periodic inspections and repairs to or replacement of existing items.

**Occupy**
A unit physically located on a range or training area with personnel, equipment, or ammunition. Units will establish communications with Range Control to request permission to occupy any range, firing point or observation point in either a dry or wet status.

**Officer in Charge**
Commissioned officer designated by the unit to be responsible to the Range Control Officer for the maintenance and safe use of a specified Firing range, training/facility, or artillery firing point. Must be an E-7 or above

**Off-Limits Areas:**

Dud and impact area. Entry into dud and impact areas is prohibited at all times.

Ranges, landing zone, and the other impact areas. All ranges, landing zone (airstrip located in Training Area 37), and other impact areas are off-limits to all personnel except as authorized by the Chief, Range Control.

**OIC of Training**
The designated commissioned officer in charge of all activities at one or more particular firing points and responsible for all firing safety.

**Range**
Any area designated by the Range Control Officer for the firing of direct-fire weapons with live ammunition. Area includes target, ricochet, and safety areas specified in AR 385-63 as well as administrative areas and facilities

**Range Control Officer**
Individual designated by the installation commander to be responsible for the coordination, maintenance, and safe use of ranges, firing points training areas, and facilities on the reservation.

**Range Safety Officer**
Individual designated by the using unit responsible to the Range Control Officer and OIC for the safe conduct of firing on a specified range group of firing points. Range Safety Officer will not be assigned any other duties. Must be an E-6 or above

**Recreation Area**
Any area designated by the installation commander within which recreational activities are conducted.

**Restricted Area - Federal Aviation Administration**
Special use airspace designated under Federal Aviation Regulation, Part 73, within which the flight of aircraft is subject to restriction.

**Restricted Area - Other**
Any area or facility designated IAW AR 385-63 by the installation commander within which specified restrictions on entry and/or exit apply.

**Roadblock**
A barrier, permanent or temporary set across a road or trail to bar foot and/or vehicular traffic. Permanent barriers are established by Range Control Officer, temporary barriers are established the Range Control Officer or using unit with the concurrence of the Range Control Officer.

**Surface Dancer Zone**
The segment of the range is which is endangered by particular type of weapon firing (see AR 385-63 for surface danger zone diagrams of various weapons).

**Training Area**
An area designated by the Range Control Officer within which unit training activities are conducted, exclusive of training facilities located therein.

**Training Facility**
An area designated by the Range Control Officer, excluding ranges and firing points, within which a specific training activity is conducted and for which the facility has been designated, (e.g., landing strip. DZ, bivouac site, signal training site, etc.).

**Occupying Unit**
Any unit or activity authorized by the Range Control Officer IAW current regulations to use training ranges, firing points, areas, and/or facilities on the reservation. This department includes non-Department of Defense (DOD) and civilian organizations authorized use of DOD facilities.

**Wet Facility**
A facility/range which is in use and on which ammunition is being fired.

(ATZH-DP)

FOR THE COMMANDER:

OFFICIAL:

CRAIG L. ZIMMERMAN
Colonel, GS
Chief of Staff

//SIGNED//
LISA E. McCLEASE
Director
Information Management

DISTRIBUTION:
http://www.gordon.army.mil/doim/imc/Forms.htm

# PEER COACHING

Peer coaching is using two soldiers of equal firing proficiency and experience to assist (coach) each other during marksmanship training. Some problems exist with peer coaching. If the new soldier does not have adequate guidance, a "blind-leading-the-blind" situation results, which can lead to negative training and safety violations. However, when adequate instruction is provided, peer coaching can be helpful even in the IET environment. Since all soldiers in units have complete BRM, peer coaching should yield better results.

**Benefits.** The pairing of soldiers can enhance learning for both of them. The coach learns what to look for and what to check as he provides guidance to the firer Communication between peers is different than communication between a firer and drill sergeant or senior NCO. Peers have the chance to ask simple questions and to discuss areas that are not understood. Pairing soldiers who have demonstrated good firing proficiency with those who have firing problems can improve the performance of problem firers

**Duties.** The peer coach assists the firer in obtaining a good position and in adjusting sandbags. He watches the firer - **not the target**- to see that the firer maintains a proper, relaxed, steady position; that he holds his breath before the final trigger squeeze; that he applies initial pressure to the trigger; and that no noticeable trigger jerk, flinch, eye blink, or other reaction can be observed in anticipating the rifle firing. The peer coach can use an M16 sighting device, allowing him to see what the firer sees through the sights.

The peer coach can load magazines, providing a chance to use ball and dummy. At other times, he could be required to observe the target area - for example, when field-fire targets are being engaged and the firer cannot see where he is missing targets. The peer coach can add to range safety procedures by helping safety personnel with preliminary rifle checks.

**NOTE:** When a peer coach is used during M16A1live-fire exercises, a brass deflector should be attached to the rifle and eye protection should be worn.

# TRAINING

Dry-fire training and live-fire training are necessary to mastering basic rifle marksmanship. The soldier must adhere to the following procedures and applications to be effective in combat.

**Dry-Fire Exercises.** Repeated training and dry-fire practice are the most effective means available to ensure all soldiers can function efficiently after dark.

Target detection and dry-fire exercises must be conducted before the first live round is fired. They can take place almost anywhere -elaborate live-fire range facilities are not needed. Modified fundamentals can be taught in a classroom/practical exercise situation. Further training in the proper zeroing and engagement techniques can take place anywhere that targets can be set up and darkness can be expected.

Without extensive dry-fire training, soldiers do not perform to standards during live fire. Valuable range time and ammunition are wasted in a final attempt to teach the basics.

The soldier must demonstrate skill during daylight live fire. Next, he is trained in the differences and modifications needed for successful night firing. Many dry-fire exercises are conducted until skill at night firing is displayed. Only then is the soldier ready to move on to the night live-fire exercises.

**Live-Fire Exercises.** These exercises continue to develop the firing skills acquired during dry-fire exercises, and they allow the soldier to experience the effects of darkness on downrange performance.

The basic unassisted live-fire exercise allows all soldiers to apply night-fire principles, and to gain confidence in their abilities to effectively engage targets at 25 and 50 meters. Practice and proficiency firing can be conducted on any range equipped with mechanical lifters and muzzle flash simulators. A small square of reflective material and a shielded low wattage flashing light (protected from bullet impact) may be used to facilitate target detection. (Figures 5-3) The light should be placed to highlight the center of the target with a flashing, faint glow (intended to represent a muzzle flash). The light should not be on constantly, when the target is not exposed, or on when the target is exposed but not being used in actual engagement. The light should provide the firer with a momentary indication that a target is presenting itself for engagement. It should not be attached to the target or provide the firer with a distinct aiming point, regardless of how dim it may be. Practice can also be accomplished by the use of MILES equipment and target interface devices.

When an automated record fire range (RETS) is used for this exercise, the two 50-meter mechanisms are used. Before training, one E-type silhouette target is replaced with an F-type silhouette target. The F-type silhouette target is engaged at 25 meters from the prone unsupported position. The soldier is issued one magazine of 15 rounds (5 rounds ball; 10 rounds tracer) and presented 15 ten-second exposures. The firing line is moved, and the soldier engages the E-type silhouette target at 50 meters. He is issued a second 15-round magazine (5 rounds ball; 10 rounds tracer) to engage 15 ten-second exposures.

When the automated range is used, the soldier's performance is recorded in the tower. If automatic scoring is not available, F-type and E-type silhouette paper facings are attached to the mechanical target, and bullet holes are counted. Facings may be repaired or replaced for each firer.

To meet the annual/semiannual minimum performance requirements, all soldiers must hit and kill seven separate targets out of 30 exposures. The results are annotated on the soldier's record fire scorecard.

- *Individual.* Application of immediate action, rapid magazine changes, and refinements of the modified quick-fire aiming point should be tested and evaluated for further training.
  - *Unassisted.* After soldiers exhibit proficiency of individual tasks, training and evaluation at ranges beyond those possible using only the rifle are indicated.
  - *Artificial illumination.* After mastering the unassisted night fire task and after repeated dry-fire training under artificial illumination, the soldier is ready to be tested and evaluated using live fire under illumination. Pop-up or stationary targets at ranges out to 175 meters (depending on light conditions, terrain features, and vegetation) may be used. Illumination is provided by flares, mortar/artillery, or floodlights. Once these tasks are mastered, further training and evaluation using NVDs is indicated. Multipurpose range complexes can be used for night firing by using artificial illumination. Automated field fire or record fire ranges can also be used by adding lighting. During this training, soldiers engage targets at 75 to 175 meters. Several target scenarios are possible. A typical training exercise would present 30 random exposures of the 75-meter and 175-meter targets (or optional 100-meter and 200-meter targets). Soldiers should be expected to hit at least 10 targets. Tracer ammunition can be used to enhance training.

- *Night vision devices.* Repeated training and dry-fire practice on the proper use of NVDs are essential to the successful conduct of any live-fire training using these devices. Firers must understand the equipment and skillfully employ it. NVDs can provide engagement capabilities out to 300 meters.

**NOTE:** Spotlights or floodlights can be modified through use of a rheostat to simulate the flickering, bright/dim nature of artificial illumination. Lights should not be used to continuously spotlight targets. Unanticipated artificial illumination may render NVDs difficult to see through or may shut the device off. Live-fire training should consider any problems incurred by such unexpected illumination.

- *Unit.* Parts of unit STXS, FTXS, and LFXs should be conducted at night. This training should include target detection, unassisted MILES and live fire, artificial illumination, and NVDS. Targets out to 300 meters may be used, depending on the existing conditions. Emphasis is on soldier knowledge and skills displayed.

# TRAINING STRATEGY

Training strategy is the overall concept for integrating resources into a program to train individual and collective skills needed to perform a unit's wartime mission.

Training strategies for rifle marksmanship are implemented in TRADOC institutions (IET, NCOES, basic and advanced officer's courses) and in units. The overall training strategy is multifaceted and is inclusive of the specific strategies used in institution and unit programs. Also included are the supporting strategies that use resources such as publications, ranges, ammunition, training aids, devices, simulators, and simulations. These strategies focus on developing critical soldier skills, and on leader skills that are required for success in combat.

Two primary components compose the training strategies: **initial training** and **sustainment training.** Both may include individual and collective skills. Initial training is critical. A task that is taught correctly and learned well is retained longer and skills can be quickly regained and sustained. Therefore, initial training must be taught correctly the first time. However, eventually an individual or unit loses skill proficiency. This learning decay depends on many factors such as the difficulty and complexity of the task. Personnel turnover is a main factor in decay of collective skills, since the loss of critical team members requires retraining to regain proficiency. If a long period elapses between initial and sustainment training sessions or training doctrine is altered, retraining may be required.

The training strategy for rifle marksmanship begins in IET and continues in the unit. An example of this overall process is illustrated in Figure 1-1 and provides a concept of the flow of unit sustainment training (Appendix A).

JET provides field units with soldiers who have been trained and who have demonstrated proficiency to standard in basic marksmanship tasks. The soldier graduating from these courses has been trained to maintain the rifle and to hit a point target. He has learned target detection, application of marksmanship fundamentals, and other skills needed to engage a target. The specific tasks and programs taught in IET are explained in Appendix A, FM 21-3, and in commanders' manuals.

Training continues in units on the basic skills taught in IET. Additional skills such as area fire are trained and then integrated into collective training exercises, which include platoon and squad live-fire STXs. (A year-round unit marksmanship training program is explained in Appendix A.) The strategy for sustaining the basic marksmanship skills taught in IET is periodic preliminary rifle instruction, followed by instructional and qualification range firing. However, a unit must set up a year-round program to sustain skills. Key elements include training of trainers, refresher training of nonfiring skills, and use of the Weaponeer or other devices for remedial training.

Additional skills trained in the unit include semiautomatic and automatic area fires, night fire, MOPP firing, and moving target training techniques. Related soldier skills of camouflage, cover and concealment, fire and movement, and preparation and selection of a fighting position are addressed in FM 21-3, which must be integrated into tactical training.

In the unit, individual and leader proficiency of marksmanship tasks are integrated into collective training to include squad, section, and platoon drills and STXS; and for the collective tasks in these exercises, and how they are planned and conducted, are in the MTP and battle drills books for each organization. (Force-on-force exercises using MILES are discussed in detail in TC 25-6). Based on the type organization, collective tasks are evaluated to standard and discussed during leader and trainer after-action reviews. Objective evaluations of both individual and unit proficiency provide readiness indicators and future training requirements.

A critical step in the Army's overall marksmanship training strategy is to train the trainers and leaders first. Leader courses and unit publications develop officer and NCO proficiencies necessary to plan and conduct marksmanship training and to evaluate the effectiveness of unit marksmanship programs. Training support materials are provided by the proponent schools to include field manuals, training aids, devices, simulators, and programs that are doctrinal foundations and guidance for training the force.

Once the soldier understands the weapon and has demonstrated skill in zeroing, additional live-fire training and a target acquisition exercise at various ranges are conducted. Target types and scenarios of increasing difficulty must be mastered to develop proficiency.

Initial individual training culminates in the soldier's proficiency assessment, which is conducted on the standard record fire range or approved alternates. This evaluation also provides an overview of unit proficiency and training effectiveness.

General marksmanship training knowledge and firing well are acquired skills, which perish easily. Skill practice should be conducted for short periods throughout the year. Most units have a readiness requirement that all soldiers must zero their rifles within a certain time after unit assignment. Also, soldiers must confirm the zeros of their assigned rifles before conducting a qualification firing. Units should conduct preliminary training and practice firing

throughout the year due to personnel turnover. A year-round marksmanship sustainment program is needed for the unit to maintain the individual and collective firing proficiency requirements to accomplish its mission (see Appendix A).

# Target Detection and Exercises

*The material contained in this appendix provides the detailed information on the skills required for proper target detection and identification. The exercises contained herein will train and sustain those skills.*

## Section I. TARGET DETECTION AND ENGAGEMENT

Target detection is the process of locating, marking, and determining the range to combat targets. For most soldiers, finding the target can be a greater problem than hitting it. Target detection must be conducted as part of individual training and tactical exercises and must be integrated into night live-fire exercises. The observation lines on target detection ranges approximate the location a soldier might occupy when in combat. Provisions must be made to incorporate night target detection.

## TARGET LOCATION

The ability to locate a combat target depends on the observer's position and skill in searching and maintaining observation of an area, and the target indications of the "enemy" during day or night.

**Selection of a Position.** A good position is one that offers maximum visibility of the area while affording cover and concealment. Position has two considerations -- the observer's tactical position in a location and his body position at that location.

Usually, the firer is told where to prepare his defensive position. However, some situations (such as the attack and reorganization on the objective) require him to choose his own defensive position.

Although target training courses prescribe conferences and demonstrations on choice of steady firing positions, the instruction does not normally include applying this skill. Therefore, instructors/trainers must emphasize the importance of the observer's position when conducting practical exercises in other target-detection techniques.

**Observation of an Area.** When a soldier moves into a new area, he quickly checks for enemy activity that could be an immediate danger. This search entails quick glances at specific points throughout the area rather than just sweeping the eyes across the terrain. The eyes are sensitive to slight movements occurring within the arc on which they are focused. However, they must be focused on a certain point to have this sensitivity.

If the soldier fails to locate the enemy during the initial search, he then begins a systematic examination known as the 50-meter overlapping strip technique of search (Figure B-1). Normally, the area nearest the soldier offers the greatest danger to him. Therefore, the search begins with the terrain nearest the observer's position.

Beginning at either flank, the soldier searches the terrain to his front in a 180-degree arc that is 50 meters deep. After reaching the opposite flank, the soldier searches over a second 50-meter strip farther out but overlapping the first strip by about 10 meters. The soldier continues until the entire area has been searched.

To benefit from his side vision, the soldier looks at certain points as he searches from one flank to the other. He remembers prominent terrain features and areas that offer cover and concealment to the enemy, learning the terrain as he searches it.

After completing his detailed search, the soldier maintains observation of the area. He should use a technique the same as his initial quick search of the area. He uses quick glances at various points throughout the entire area, focusing his eyes on certain features as he conducts this search. He devises a set sequence of searching the area to ensure complete coverage of all terrain. Since this quick search could fail to detect the initial enemy movement, the soldier routinely repeats a systematic search of the area. This systematic search is conducted anytime the attention of the soldier has been distracted from his area of responsibility.

**Target Indicators.** A target indicator is anything a soldier (friendly or enemy) does or fails to do that reveals his position. Since these indicators apply to both sides of the battlefield, a soldier learns target indicators from the standpoint of locating the enemy. At the same time, he must prevent the enemy from using the same indicators to locate him. These indicators can be grouped into three areas for instruction: sound, movement, and identifiable shapes.

*Sound*. Potential targets indicated by sounds (footsteps, coughing, or equipment noises) provide only a direction and general location. It is difficult to pin-point a specific target's location only by sound. However, the fact that an observer was alerted by a sound greatly increases the chances that he will locate the target through subsequent target indicators.

*Movement*. The problem in locating moving targets depends mainly on the speed of movement. Slow, deliberate movements are much harder to notice than those that are quick and jerky. The techniques previously outlined are the best procedures for locating moving targets.
*Identifiable shapes*. The lack of or poor use of camouflage and concealment are indicators that reveal most of the targets on the battlefield. Light reflecting from shiny surfaces or a contrast that presents a clearly defined outline are indicators easily noticed by an alert observer. For instruction, camouflage indicators are divided into three groups:

- Shine. Items such as belt buckles or other metal objects reflect light and act as a beacon to the wearer's position; therefore, such objects should be camouflaged. This is true during the day or night.
- Outlines. The human body and most types of military equipment are outlines known to all soldiers. The reliability of this indicator depends upon the visibility and experience of the observer. On a clear day, most soldiers can identify the enemy or equipment if there is a distinct outline. During poor visibility, it is not only harder to see outlines, but inexperienced troops often mistake stumps and rocks for enemy soldiers. Therefore, the soldier should learn the terrain during good visibility.
- Contrasts. If a soldier wearing a dark uniform moves in front of a snowbanks the contrast between the white snow and dark uniform makes him clearly visible. However, if he wears a white (or light-colored) uniform, he is harder to see. Contrast with the background is one of the hardest target indicators to avoid. During operations in which the soldier is moving, he is usually exposed to many types of color backgrounds. No camouflage uniform exists that can blend into all backgrounds. Therefore, a moving soldier must always be aware of the surrounding terrain and vegetation. A parapet of freshly dug earth around a fighting position is noticeable. Even if camouflaged, the position can still be located due to the materials used for concealing. Camouflage materials are usually cut from vegetation close by but eventually wilt and change color. An observer, seeing an area that has been stripped of natural growth, can assume there are close camouflaged emplacements.

# TARGET MARKING

When a target has been located, the soldier should mark its location in relation to visible terrain or a man-made feature. If the soldier observes several targets at one time, he can fire on only one of them; therefore, he must mark the locations of the others for later engagement. To mark the location of a target, the soldier uses an aiming or reference point. An aiming point is a feature directly on line between the soldier and target, such as a tree trunk, which is usually the most effective means of delivering accurate fire. Using a reference point or aiming point to mark targets moving from one location to another depends on the following factors:
**Number of Targets.** If several targets appear and disappear at the same time, the point of disappearance of each is hard to determine.
**Exposure Time.** Usually, moving targets are exposed for only a short period; therefore, the observer must be alert to see the point of disappearance for most of the targets.
**Target Spacing.** The greater the distance between targets, the harder it is to see the movements of each. When there is a great distance between targets, the observer should carefully locate and mark the one nearest his position first.
**Aiming Points.** Aiming points can be either good or poor. Good aiming points are easily determined in the nearby terrain. Targets disappearing behind good aiming points, such as man-made objects and large terrain features, can be easily marked for future engagement. Poor aiming points are not easily distinguishable within the surrounding terrain. Targets disappearing behind poor aiming points are hard to mark and are easily lost, and they should be engaged first.

# RANGE DETERMINATION

Range determination is the process of finding the distance between two points -- one point is usually the observer's own position and the other a target or prominent feature. Range determination is an important skill in completing several types of missions since it affects combat marksmanship proficiency. It is needed in reporting information, and in adjusting artillery and mortar fires.
Many techniques are used to determine range: measuring distances on maps, pacing the distance between two points, using an optical range finder. However, the soldier does not usually have a map, and he rarely has access to an optical range finder. Pacing the distance between two points is one technique a soldier can use, as long as the enemy is not near. A sector sketch is a rough schematic map of an observer's area of responsibility (Figure B-2). It shows the range and direction from the soldier's position to recognizable objects, terrain features, avenues of approach, and possible enemy positions. The soldier paces the distance between his position and reference points to

reduce range errors. By referring to the sector sketch, the soldier can quickly find the range to a target appearing near a reference point.

**The 100-Meter Unit-of-Measure Technique.** To use this technique, the soldier must visualize a distance of 100 meters on the ground. For ranges up to 500 meters, he determines the number of 100-meter increments between the two points (Figure B-3). Beyond 500 meters, the soldier must be select a point halfway to the target, determine the number of 100-meter increments to the halfway point, and then double it to find the range to the target (Figure B-4). During training exercises, the soldier must aware of the effect that sloping ground has on the appearance of a 100-meter increment. Ground that slopes upward gives the illusion of greater distance and soldiers have a tendency to overestimate a 100-meter increment. Conversely, ground that slopes downward gives the illusion of a shorter distance; therefore, the soldier tends to underestimate.

To obtain proficiency in the 100-meter unit-of-measure technique requires dedicated practice. Throughout training, the soldier should compare his estimated range to the actual range determined by pacing or other reliable means. The best training technique is to require the soldier to pace the range after he has made a visual estimation, realizing the actual range for himself. This teaches him more than being told by the instructor/trainer.

One shortcoming of the 100-meter unit-of-measure technique is that its accuracy is depends upon the amount of visible terrain for ranges up to 500 meters. If a target appears at a range greater than 500 meters, and the soldier can see only a portion of the ground between himself and the target, it is hard to accurately use the 100-meter unit-of-measure technique.

**The Appearance-of-Objects Technique.** This technique determines range by the size of the object observed. This is a common technique of determining distances and is used by most people in their everyday living. For example, a motorist trying to pass another car must judge the distance of an oncoming vehicle. He does this based on his knowledge of how vehicles appear at various distances. Suppose the motorist knows that at a distance of 1 mile an oncoming vehicle seems to be 1 inch wide and 2 inches high. Then, anytime he sees another oncoming vehicle that fits this dimension, he knows it is about 1 mile away. This same technique can be used by the firer to determine ranges on the battlefield. If he knows the size and detail of personnel and equipment at known ranges, then he can compare these traits to like objects at unknown ranges -when the traits match, so do the ranges.

**The Front Sight Post Estimation.** The front sight post can be used to estimate range. The targets in Figure B-4 show the soldier perceives the front sight post to be the same width as a man-size target when the target is located at a distance of 175 meters. A man can be covered using half of the front sight post when the range to the target is doubled to 350 meters. An easy rule to remember: if the target is bigger than the front sight post, the target must be within 175 meters; when the target is less than the full width of the front sight post, the target is beyond 175 meters. The silhouette zeroing target provides the same perception to the firer as a man-sized target at 250 meters. The various scaled-silhouette targets provide a means for soldiers to practice range estimation with the front sight post. This is a method of dry-fire training, and soldiers should be aware of the importance of range estimation du-ring all of their marksmanship training.

## PRACTICE RECORD FIRE

Practice record fire is a training exercise designed to progressively develop and refine the soldiers combat firing skills. During this exercise, the soldier is exposed to a more difficult course of fire with increased time stress to include single and multiple target engagements at six distances ranging from 50 to 300 meters. This exercise also provides the opportunity to practice and demonstrate skills learned during target detection. To perform well, a soldier must integrate all the tasks learned from previous training. When firing exercises are properly organized, conducted, and critiqued, the soldier gains knowledge and confidence in his firing performance. Through close observation, coaching, and critiquing, instructors/trainers can base remedial training on specific needs.

## RECORD FIRE

Qualification ratings and first-time GO rates are important during record fire, if properly used. They provide goals for the soldier and aid the commander in identifying the quality of his training. This should be considered in the assignment of priorities, instructor personnel, and obtaining valuable training resources. The objective of record firing is to access and confirm the individual proficiency of firers and the effectiveness of the training program. (See Appendix A for information on unit training and Appendix G for detailed information on record fire.)

## INSTRUCTOR/TRAINER SELECTION

Institutional and unit instructors/trainers are selected and assigned from the most highly qualified soldiers. These soldiers must have an impressive background in rifle marksmanship; be proficient in applying these fundamentals; know the importance of marksmanship training; and have a competent and professional attitude. The commander must ensure that selected instructors/trainers can effectively train other soldiers. Local instructor/trainer training courses and marksmanship certification programs must be established to ensure that instructor/trainer skills are developed.

Cadre/trainer refers to a marksmanship instructor/trainer that has more experience and expertise than the firer. He trains soldiers in the effective use of the rifle by maintaining strict discipline on the firing line, insisting on compliance with range procedures and program objectives, and enforcing safety regulations. A good instructor/trainer must understand the training phases and techniques for developing marksmanship skills, and he must possess the following qualifications:

**Knowledge.** The main qualifications for an effective instructor/trainer are thorough knowledge of the rifle, proficiency in firing, and understanding supporting marksmanship manuals.

**Patience.** The instructor/trainer must relate to the soldier calmly, persistently, and patiently.

**Understanding.** The instructor/trainer can enhance success and understanding by emphasizing close observance of rules and instructions.

**Consideration.** Most soldiers enjoy firing regardless of their performance and begin with great enthusiasm. The instructor/trainer can enhance this enthusiasm by being considerate of his soldiers feelings and by encouraging firing abilities throughout training, which can also make teaching a rewarding experience.

**Respect.** An experienced cadre is assigned the duties of instructor/trainer, which classifies him as a technical expert and authority. The good instructor/trainer is alert for mistakes and patiently makes needed corrections.

**Encouragement.** The instructor/trainer can encourage his soldiers by convincing them to achieve good firing performance through practice. His job is to impart knowledge and to assist the soldier so he can gain the practical experience needed to become a good firer.

# MOPP FIRE EXERCISES

The many difficulties the soldier encounters while firing with MOPP gear must be experienced and overcome during training.

**Dry-Fire MOPP Exercises.** Repeated dry-fire exercises covering all aspects of MOPP firing are the most effective means available to ensure all soldiers can function during a live-fire MOPP situation. Multiple dry-fire exercises must be conducted before the first live round is fired. Otherwise, valuable ammunition and training time are wasted in trying to teach soldiers the basics. The soldier is trained in the fundamentals; repeated dry-fire or Weaponeer exercises are conducted; grouping, zeroing, qualifying, and evaluating are performed using standard non-MOPP firing; the differences and modifications are trained for MOPP firing; and repeated MOPP dry-fire exercises are conducted. The soldier is now ready to move on to MOPP live fire.

**Live-Fire MOPP Exercises.** These exercises further develop the learned firing skills and allow the soldier to experience the effects of wearing MOPP equipment on downrange performance.

*Individual* Application of immediate action, rapid magazine changes, grouping, and adjusted point of aim at 25 meters should all be tested and evaluated for further training. After soldiers exhibit proficiency at these tasks, further training and evaluation at extended ranges are indicated.

*Unit.* Parts of unit LFXs should be conducted in the highest MOPP level with a planned system of target hit evaluation. As in all aspects of marksmanship training, the emphasis is on soldier knowledge and skills displayed.

**Basic 25-meter proficiency course.** Initial live-fire exercises are conducted at 25 meters. This training provides all soldiers the basic techniques and introduces firing the rifle in MOPP equipment. This basic proficiency exercise must be fired while wearing gloves and protective mask with hood. The basic 25-meter proficiency exercise is fired to standard and is an annual/semiannual GO/NO-GO requirement for most soldiers. It is entered on the record fire scorecard when completed.

The course of fire can be conducted on any range equipped with mechanical target lifters. Soldiers are given initial instruction and a demonstration of the techniques of firing in MOPP equipment.

Each soldier is issued 20 rounds of 5.56-mm ball ammunition to engage 20 three-to-five-second exposures of F-type silhouette targets at 25 meters. Initial firing is performed with 10 rounds from the individual fighting position (supported), and 10 rounds from a prone unsupported position. Each soldier must obtain a minimum of 11 target hits out of 20 exposures to meet the basic requirement. This initial basic 25-meter exercise prepares soldiers for future individual and unit training in full MOPP gear.

**Downrange feedback** Once the soldier has mastered basic marksmanship proficiency, he should be introduced to firing at range. This phase of firing should provide the maximum hit-and-miss performance feedback; it can be conducted on a KD or modified field fire range at 75, 175, and 300 meters.

Practice firing under full MOPP can also be conducted on the standard RETS ranges -for example, the standard record fire tables may be fired in MOPP. MOPP fire must also be part of unit tactical exercises, which are fired on MPRC as part of STXS.

**NOTE:** The .22-cafiber rimfire adapter or plastic practice ammunition may be used during live-fire practice at scaled 25-meter targets when 5.56-mm ammunition is not available.

When the rimfire adapter, plastic ammunition, or live-fire range is not available, the Weaponeer device may be used. Scaled silhouette targets may also be used at this distance to introduce the many target sizes common at longer ranges. The slow-fire target and course outlined in are appropriate.

Having mastered the 25-meter firing phase, the soldier is then introduced to firing at range, using the standard 75-, 175-, and 300-meter downrange feedback targets. Adjusted point of aim, for individual differences of cant, is first used during this training. Live-fire training is conducted on a KD or modified field fire range, giving the soldier feedback on targets engaged at many ranges,

# Night Firing

*All units must be able to fight during limited visibility. All soldiers should know the procedures for weapons employment during such time. Soldiers must experience the various conditions of night combat -- from total darkness, to the many types of artificial illumination, to the use of surveillance aids. All units must include basic, unassisted night fire training annually in their unit marksmanship program. Combat units should conduct tactical night fire training at least quarterly. This tactical training should include MILES during force-on-force training as well as live fire. Night-fire training must include the use of applicable night vision devices when this equipment is part of a TOE. The many effects darkness has on night firing are discussed herein.*

**NOTE:** Although this chapter addresses night firing, the appropriate modifications to the fundamentals of firing may be applied whenever visibility is limited.

## CONSIDERATIONS

Trainers must consider the impact of limited visibility on the soldier's ability to properly apply the fundamentals of marksmanship and combat firing skills. These fundamentals/ skills include:

**Operation and Maintenance of the Weapon.** Handling the weapon, performing operation and function checks, loading and unloading, and maintenance are affected by nighttime conditions. Movements are slowed, tasks take longer to complete, vision is impaired, and equipment is more easily misplaced or lost. Because combat conditions and enforcement of noise and light discipline restrict the use of illumination, soldiers must be trained to operate (load, unload, and clear), service, and clean their weapons using the lowest lighting conditions. Although initial practice of these tasks should occur during daylight (using simulated darkness) to facilitate control and error correction, repeated practice during actual nighttime conditions should be integrated with other training. Only through repeated practice and training can the soldier be expected to perform all tasks efficiently.

**Immediate Action.** Under normal conditions, a soldier should clear a stoppage in three to five seconds. After dark, this task usually takes longer. Identifying the problem may be frustrating and difficult for the soldier. A tactile (hands only) technique of identifying a stoppage must be taught and practiced. Clearing the stoppage using few or no visual indicators must also be included. The firer must apply immediate action with his eyes closed. Dry-fire practice using dummy or blank rounds under these conditions is necessary to reduce time and build confidence. Training should be practiced first during daylight for better control and error correction by the trainer. Practice during darkness can be simulated by closing the eyes or using a blindfold. Once the soldier is confident in applying immediate action in daylight or darkness, he can perform such actions rapidly on the firing line.

**Target Detection.** Many of the skills discussed in apply to target detection after dark. Light from a cigarette or flashlight, discharge of a rifle (muzzle flash), or reflected moonlight/starlight are the main means of target location. Sounds may also be indicators of target areas. Because the other techniques of detection (movement, contrast) are less apparent at night, light and sound detection must be taught, trained, and reviewed repeatedly in practice exercises. Exercises should also emphasize shortened scanning ranges, night vision adaptation, and use of off-center vision. Target detection exercises should be integrated into all collective training tasks.

**NOTE:** Binoculars are often overlooked as night vision aids. Because they amplify the available light, binoculars or spotting/rifle scopes can provide the firer with another means to locate targets during limited visibility. Also, the use of MILES equipment is effective for use in engaging detected targets.

**Marksmanship Fundamentals.** The four marksmanship fundamentals apply to night firing. Some modifications are needed depending on the conditions. The firer must still place effective fire on the targets or target areas that have been detected.

*Steady position.* When the firer is firing unassisted, changes in his head position/stock weld will be necessary, especial when using weapon-target alignment techniques. When using rifle-mounted night vision devices, head position/stock weld must be changed to bring the firing eye in line with the device. Also, such mounted devices alter the rifle's weight and center of gravity, forcing a shift in placement of the support (nonfiring arm or sandbags). Repeated dry-fire practice, followed by live-fire training, is necessary to learn and refine these modifications and still achieve the most steady position.

*Aiming.* Modifications to the aiming process vary from very little (when using LLLSSs) to extensive (when using modified quick-fire techniques). When firing unassisted, the firer's off-center vision is used instead of pinpoint focus. When using a mounted night vision device, the firer's conventional iron sights are not used. The soldier uses the necessary aiming process to properly use the device.

*Breathing.* Weapon movement caused by breathing becomes more apparent when using night vision devices that magnify the field of view. This fundamental is not greatly affected by night fire conditions.

*Trigger squeeze.* This important fundamental does not change during night fire. The objective is to not disrupt alignment of the weapon with the target.

## PRINCIPLES OF NIGHT VISION

For a soldier to effectively engage targets at night, he must apply the three principles of night vision:
**Dark Adaptation.** Moving from lighted to darkened areas (as in leaving a tent) can be temporarily blinding. After several minutes have passed, the soldier can slowly see his surroundings. If he remains in this completely darkened environment, he adapts to the dark in about 30 minutes. This does not mean he can see in the dark at the end of this time. After about 30 minutes, his visibility reaches its maximum level. If light is encountered, the eyes must adapt again. The fire on the end of a cigarette or a red-lensed flashlight can degrade night vision; larger light sources cause more severe losses.
**Off-Center Vision.** During the day, the soldier focuses his vision on the object he wants to see. Shifting this pinpoint focus slightly to one side causes the object to become blurry or lose detail. At night, the opposite is true. Focusing directly on an object after dark results in that object being visible for only a few seconds. After that, the object becomes almost invisible. To view an object at night, the soldier must shift his gaze slightly to one side. This allows the light-sensitive parts of the eye (parts not used during daylight) to be used. These can detect faint light sources or reflections and relay their image to the brain.

**NOTE:** Vision is shifted slightly to one side, but attention is still on the object. Because of the blind spot at the center of vision, directing attention to an off-centered objective is possible (with practice).
**Scanning.** Scanning is the short, abrupt, irregular movement of the soldier's eyes around an object or area every 4 to 10 seconds. Off-center vision is used. Scanning ranges vary according to visibility.
**NOTE:** For detailed information on the three principles, see FM 21-75.

## TARGET ENGAGEMENT TECHNIQUES

Night fire usually occurs under three general conditions.
**Unassisted Firing Exercise.** The firer must detect and engage targets without artificial illumination or night vision devices. Potential target areas are scanned. When a target is detected, the firer should engage it using a modified quick-fire position. His head is positioned high so that he is aligning the weapon on the target and looking just over the iron sights. His cheek should remain in contact with the stock.
The firer should take a few seconds to improve weapon/target alignment by pointing slightly low to compensate for the usual tendency to fire high. Both eyes are open to the maximum advantage of any available light, and the focus is downrange. Off-center vision is used to keep the target in sight. Tracer ammunition may provide feedback on the line of trajectory and facilitate any adjustments in weapon/target alignment.
Repeated dry-fire training, target detection, and proper aiming practice are the most efficient means to ensure the soldier can successfully engage short-range targets (50 meters or closer) unassisted during MILES exercises, and then live-fire training.
**Artificial Illumination.** Targets as distant as 175 meters can be engaged successfully with some type of artificial illumination. Illumination may be from hand flares, mortar or artillery fire, or bright incandescent lights such as searchlights.
When artificial illumination is used, the eyes lose most of their night adaption, and off-center vision is no longer useful. Aiming is accomplished as it is during the day. Artificial illumination allows the firer to use the iron sights as he does during the day. (M16A2 users should keep the large rear sight aperture flipped up during darkness.)
Engaging targets under artificial illumination allows for better target detection and long-range accuracy than the unassisted technique. When the light is gone, time must be spent in regaining night vision and adaptation. Only when the light level drops enough so that the target cannot be seen through the iron sights should the firer resume short-range scanning, looking just over the sights.
Soldiers have sometimes been taught to close their eyes during artificial illumination to preserve their night vision. This technique is effective but also renders the soldier (or entire unit) blind for the duration of the illumination. Keeping one eye closed to preserve its night vision results in a drastically altered sense of perception when both eyes are opened, following the illumination burnout. Tactical considerations should be the deciding factor as to which

technique to use. Repeated dry-fire training and target detection practice are the keys to successful engagement of targets out to 150 meters or more during live fire under artificial illumination.

**Night Vision Devices.** Rifle-mounted night vision devices are the most effective night fire aids. By using these devices, the firer can observe the area, detect and engage any suitable targets, and direct the fire of soldiers who are firing unassisted.

NVDs can be used to engage targets out to 300 meters. Repeated training, dry-fire practice, and correct zeroing are vital to the proper employment of NVDs during live-fire training.

# Section V. MOPP FIRING

All soldiers must effectively fire their weapons to accomplish combat missions in an NBC environment. With proper training and practice, soldiers can gain confidence in their ability to effectively hit targets in full MOPP equipment. MOPP firing proficiency must be a part of every unit's training program.

## EFFECTS OF MOPP EQUIPMENT ON FIRING

Firing weapons is only part of overall NBC training. Soldiers must first be familiar with NBC equipment, its use, and proper wear before they progress to learning the techniques of MOPP firing. Trainers must consider the impact of MOPP equipment (hood/ mask, gloves, overgarments) on the soldier's ability to properly apply the fundamentals of marksmanship and combat firing skills.

**Immediate Action.** Under normal conditions a soldier should be able to *clear a* stoppage in three to five seconds. Under full MOPP, however, this may take as long as ten seconds to successfully complete. Dry-fire practice under these conditions is necessary to reduce time and streamline actions. Hood/mask and gloves must be worn. Care must be taken not to snag or damage the gloves or dislodge the hood/mask during movements. Applying immediate action to a variety of stoppages during dry fire must be practiced using dummy or blank ammunition until such actions can be performed by instinct.

**Target Detection.** Techniques and principles outlined in Chapter 3 remain valid for target detection while in MOPP, but considerations must be made for limiting factors imposed by MOPP equipment.

Vision is limited to what can be seen through the mask lenses/faceplate. Peripheral vision is severely restricted. The lenses/faceplate may be scratched or partly fogged, thus further restricting vision. Soldiers requiring corrective lenses must be issued insert lenses before training.

Scanning movement may be restricted by the hood/mask. Any of these factors could adversely affect the soldier's ability to quickly and accurately detect targets. Additional skill practice should be conducted.

**Marksmanship Fundamentals.** Although the four marksmanship fundamentals remain valid during MOPP firing, some modifications may be needed to accommodate the equipment.

*Steady position.* Due to the added bulk of the overgarments, firing positions may need adjustment for stability and comfort. Dry and live firing while standing, crouching, or squatting may be necessary to reduce body contact with contaminated ground or foliage. A consistent spot/stock weld is difficult to maintain due to the shape of the protective masks. This requires the firer to hold his head in an awkward position to place the eye behind the sight.

*Aiming.* The wearing of a protective mask may force firers to rotate (cant) the rifle a certain amount to see through the rear aperture. The weapon should be rotated the least amount to properly see through and line up the sights, as previously discussed in Chapter 3. The center tip of the front sight post should be placed on the ideal aiming point. This ideal aiming procedure (Figure 4-7) should be the initial procedure taught and practiced. If this cannot be achieved, a canted sight picture may be practiced. *Breath control* Breathing is restricted and more difficult while wearing the protective mask. Physical exertion can produce labored breathing and make settling down into a normal breath control routine much more difficult. More physical effort is needed to move around when encumbered by MOPP equipment, which can increase the breath rate. All of these factors make holding and controlling the breath to produce a well-aimed shot more energy- and time-consuming. Emphasis must be placed on rapid target engagement during the limited amount of time a firer can control his breath.

*Trigger squeeze.* Grasping the pistol grip and squeezing the trigger with the index finger are altered when the firer is wearing MOPP gloves. The action of the trigger finger is restricted, and the fit of the glove may require the release of the swing-down trigger guard. Because the trigger feels different, control differs from that used in bare-handed firing. This difference cannot be accurately predicted. Dry-fire training using dime (washer) exercises is necessary to ensure the firer knows the changes he will encounter during live fire.

# MARKSMANSHIP FUNDAMENTALS

The soldier must understand the four key fundamentals before he approaches the firing line. He must be able to establish a **steady position** that allows observation of the target. He must **aim** the rifle at the target by aligning the sight system, and he must fire the rifle without disturbing this alignment by improper **breathing** or during **trigger squeeze.** The skills needed to accomplish these are known as **rifle marksmanship fundamentals.** These simple procedures aid the firer in achieving target hits under many conditions when expanded with additional techniques and information. Applying these four fundamentals rapidly and consistently is called the **integrated act of firing.**
**Steady Position.** When the soldier approaches the firing line, he should assume a comfortable, steady firing position in order to hit targets consistently. The time and supervision each soldier has on the firing line are limited (illustrated on the following page in, Therefore, he must learn how to establish a steady position during dry-fire training. The firer is the best judge as to the quality of his position. If he can hold the front sight post steady through the fall of the hammer, he has a good position. The steady position elements are as follows:

*Nonfiring hand grip.* The rifle handguard rests on the heel of the hand in the V formed by the thumb and fingers. The grip of the nonfiring hand is light, and slight rearward pressure is exerted.
*Rifle butt position.* The butt of the stock is placed in the pocket of the firing shoulder. This reduces the effect of recoil and helps ensure a steady position.
*Firing hand grip.* The firing hand grasps the pistol grip so that it fits the V formed by the thumb and forefinger. The forefinger is placed on the trigger so that the lay of the rifle is not disturbed when the trigger is squeezed. A slight rearward pressure is exerted by the remaining three fingers to ensure that the butt of the stock remains in the pocket of the shoulder, thus minimizing the effect of recoil.
*Firing elbow placement.* The location of the firing elbow is important in providing balance. The exact location, however, depends on the firing/fighting position used - for example, kneeling, prone, or standing. Placement should allow shoulders to remain level.
*Nonfiring elbow.* The nonfiring elbow is positioned firmly under the rifle to allow for a comfortable and stable position. When the soldier engages a wide sector of fire, moving targets, and targets at various elevations, his nonfiring elbow should remain free from support.
*Stock weld.* The stock weld is taught as an integral part of various positions. Two key factors emphasized are that the stock weld should provide for a natural line of sight through the center of the rear sight aperture to the front sight post and to the target. The firer's neck should be relaxed, allowing his cheek to fall naturally onto the stock. Through dry-fire training, the soldier is encouraged to practice this position until he assumes the same stock weld each time he assumes a given position. This provides consistency in aiming, which is the purpose of obtaining a correct stock weld. Proper eye relief is obtained when a soldier establishes a good stock weld. There is normally a small change in eye relief each time he assumes a different firing position. Soldiers should begin by trying to touch his nose close to the charging handle when assuming a firing position.
*Support.* If artificial support (sandbags, logs, stumps) is available, it should be used to steady the position and to support the rifle. If it is not available, then the bones, not the muscles, in the firer's upper body must support the rifle.
*Muscle relaxation.* If support is properly used, the soldier should be able to relax most of his muscles. Using artificial support or bones in the upper body as support allows him to relax and settle into position. Using muscles to support the rifle can cause it to move.
*Natural point of aim.* When the soldier first assumes his firing position, he orients his rifle in the general direction of his target. Then he adjusts his body to bring the rifle and sights exactly in line with the desired aiming point. When using proper support and consistent stock weld, the soldier should have his rifle and sights aligned naturally on the target. When this correct body-rifle-target alignment is achieved, the front sight post must be held on target, using muscular support and effort. As the rifle fires, the muscles tend to relax, causing the front sight to move away from the target toward the natural point of aim. Adjusting this point to the desired point of aim eliminates this movement. When multiple target exposures are expected (or a sector of fire must be covered), the soldier should adjust his natural point of aim to the center of the expected target exposure area (or center of sector).
**Aiming.** Focusing on the front sight post is a vital skill the firer must acquire during practice. Having mastered the task of holding the rifle steady, the soldier must align the rifle with the target in exactly the same way for each firing. The firer is the final judge as to where his eye is focused. The instructor/trainer emphasizes this point by having the firer focus on the target and then focus back on the front sight post. He checks the position of the firing

eye to ensure it is in line with the rear sight aperture. He uses the M16 sighting device to see what the firer sees through the sights.
*Rifle sight alignment.* Alignment of the rifle with the target is critical. It involves placing the tip of the front sight post in the center of the rear sight aperture. Any alignment error between the front and rear sights repeats itself for every 1/2 meter the bullet travels. For example, at the 25-meter line, any error in rifle alignment is multiplied 50 times. If the rifle is misaligned by 1/10 inch, it causes a target at 300 meters to be missed by 5 feet.

*Focus of the eye.* A proper firing position places the eye directly on line with the center of the rear sight. When the eye is focused on the front sight post, the natural ability of the eye to center objects in a circle and to seek the point of greatest light (center of the aperture) aid in providing correct sight alignment. For the average soldier firing at combat-type targets, the natural ability of the eye can accurately align the sights. Therefore, the firer can place the tip of the front sight post on the aiming point, but the eye must be focused on the tip of the front sight post. This causes the target to appear blurry, while the front sight post is seen clearly. Two reasons for focusing on the tip of the front sight post are:
Only a minor aiming error should occur since the error reflects only as much as the soldier fails to determine the target center. A greater aiming error can result if the front sight post is blurry due to focusing on the target or other objects.
Focusing on the tip of the front sight post aids the firer in maintaining proper sight alignment.
*Sight picture.* Once the soldier can correctly align his sights, he can obtain a sight picture. A correct sight picture has the target, front sight post, and rear sight aligned. The sight picture includes two basic elements: sight alignment and placement of the aiming point.
Placement of the aiming point varies, depending on the engagement range. For example, shows a silhouette at 250 meters--the aiming point is the center of mass, and the sights are in perfect alignment; this is a correct sight picture.

A technique to obtain a good sight picture is the side aiming technique. It involves positioning the front sight post to the side of the target in line with the vertical center of mass, keeping the sights aligned. The front sight post is moved horizontally until the target is directly centered on the front sight post.

*Front sight.* The front sight post is vital to proper firing and should be replaced *when damaged. Two techniques that* can *be used are the carbide lamp and* the burning plastic spoon. The post should be blackened anytime it is shiny since precise focusing on the tip of the front sight post cannot be done otherwise.
*Aiming practice.* Aiming practice is conducted before firing live rounds. During day firing, the soldier should practice sight alignment and placement of the aiming point. This can be done by using training aids such as the M15AI aiming card and the Riddle sighting device.
**Breath Control.** As the firer's skills improve and as timed or multiple targets are presented, he must learn to hold his breath at any part of the breathing cycle. Two types of breath control techniques are practiced during dry fire.

- The first is the technique used during zeroing (and when time is available to fire a shot). There is a moment of natural respiratory pause while breathing when most of the air has been exhaled from the lungs and before inhaling. Breathing should stop after most of the air has been exhaled during the normal breathing cycle. The shot must be fired before the soldier feels any discomfort.
- The second breath control technique is employed during rapid fire (short-exposure targets). Using this technique, the soldier holds his breath when he is about to squeeze the trigger.

The coach/trainer ensures that the firer uses two breathing techniques and understands them by instructing him to exaggerate his breathing. Also, the firer must be aware of the rifle's movement (while sighted on a target) as a result of breathing.
**Trigger Squeeze.** A novice firer can learn to place the rifle in a steady position and to correctly aim at the target if he follows basic principles. If the trigger is not properly squeezed, the rifle is misaligned with the target at the moment of firing.
*Rifle movement.* Trigger squeeze is important for two reasons:

- First, any sudden movement of the finger on the trigger can disturb the lay of the rifle and cause the shot to miss the target.

- Second, the precise instant of firing should be a surprise to the soldier.

The soldier's natural reflex to compensate for the noise and slight punch in the shoulder can cause him to miss the target if he knows the exact instant the rifle will fire. The soldier usually tenses his shoulders when expecting the rifle to fire, but it is difficult to detect since he does not realize he is flinching. When the hammer drops on a dummy *round and does not* fire, the soldier's natural reflexes demonstrate that he is improperly squeezing the trigger.

*Trigger finger.* The trigger finger (index finger on the firing hand) is placed on the trigger between the first joint and the tip of the finger (not the extreme end) and is adjusted depending on hand size, grip, and so on. The trigger finger must squeeze the trigger to the rear so that the hammer falls without disturbing the lay of the rifle. When a live round is fired, it is difficult to see what affect trigger pull had on the lay of the rifle. Therefore, it is important to experiment with many finger positions during dry-fire training to ensure the hammer is falling with little disturbance to the aiming process.

As the firer's skills increase with practice, he needs less time spend on trigger squeeze. Novice firers can take five seconds to perform an adequate trigger squeeze, but, as skills improve, he can squeeze the trigger in a second or less. The proper trigger squeeze should start with slight pressure on the trigger during the initial aiming process. The firer applies more pressure after the front sight post is steady on the target and his is holding his breath.

The coach/trainer observes the trigger squeeze, emphasizes the correct procedure, and checks the firer's applied pressure. He places his finger on the trigger and has the firer squeeze the trigger by applying pressure to the coach/trainer's finger. The coach/trainer ensures that the firer squeezes straight to the rear on the trigger avoiding a left or right twisting movement. A steady position reduces disturbance of the rifle during trigger squeeze.

From an unsupported position, the firer experiences a greater wobble area than from a supported position. Wobble area is the movement of the front sight around the aiming point when the rifle is in the steadiest position. If the front sight strays from the target during the firing process, pressure on the trigger should be held constant and resumed as soon as sighting is corrected. The position must provide for the smallest possible wobble area. From a supported position, there should be minimal wobble area and little reason to detect movement. If movement of the rifle causes the front sight to leave the target, more practice is needed. The firer should never try to quickly squeeze the trigger while the sight is on the target. The best firing performance results when the trigger is squeezed continuously, and the rifle is fired without disturbing its lay.

# MALFUNCTIONS AND CORRECTIONS

Commanders and unit armorers are responsible for the organizational and direct support maintenance of weapons. Soldiers are responsible for keeping their weapons clean and operational at all times -in training and in combat. Therefore, the soldier should be issued an operator's technical manual and cleaning equipment for his assigned weapon.

## STOPPAGE

A stoppage is a failure of an automatic or semiautomatic firearm to complete the cycle of operation. Tle firer can apply immediate or remedial action to clear the stoppage. Some stoppages that cannot be cleared by immediate or remedial action could require weapon repair to correct the problem. A complete understanding of how the weapon functions is an integral part of applying immediate-action procedures.

**Immediate Action.** This involves quickly applying a possible correction to reduce a stoppage based on initial observation or indicators but without determining the actual cause. To apply immediate action, the soldier would perform these steps: Gently slap upward on the magazine to ensure it is fully seated, and the magazine follower is not jammed. Pull the charging handle fully to the rear and check the chamber (observe for the ejection of a live or expended cartridge). Release the charging handle (do not ride it forward). Strike the forward assist assembly to ensure bolt closure. Try to fire the rifle.

Apply immediate action only one time for a given stoppage. Do not apply immediate action a second time. If the rifle still fails to fire, inspect it to determine the cause of the stoppage or malfunction and take appropriate remedial action.

**Remedial Action.** Remedial action is the continuing effort to determine the cause for a stoppage or malfunction and to try to clear the stoppage once it has been identified.

## MAJOR CATEGORIES OF MALFUNCTIONS

A malfunction is caused by a procedural or mechanical failure of the rifle, magazine, or ammunition. Prefiring checks and serviceability inspections identify potential problems before they become malfunctions. Three primary categories of malfunctions are:

### 1. Failure to Feed, Chamber, or Lock.

*Description.* A malfunction can occur when loading the rifle or during the cycle of operation. Once the magazine has been loaded into the rifle, the forward movement of the bolt carrier group could lack enough force (generated by the expansion of the action spring) to feed, chamber, and lock the first round. While firing, the cycle of function is interrupted by a failure to strip a round from the magazine, to chamber the round, and to lock it.

*Probable causes.* The cause could be the result of one or more of the following: excess accumulation of dirt or fouling in and around the bolt and bolt carrier, defective magazine (dented or bulged), magazine improperly loaded. A defective round (projectile forced back into the cartridge case that could result in a "stubbed round") or the base of the previous field cartridge could be separated, leaving the remainder in the chamber. Other causes could be: damaged or broken action spring, exterior accumulation of dirt in the lower receiver extension, or fouled gas tube resulting in short recoil.

*Corrective action.* Applying immediate action usually corrects the malfunction. However, to avoid the risk of further jamming, the firer should watch for ejection of a cartridge and ensure that the upper receiver is free of any loose rounds. If immediate action fails to clear the malfunction, remedial action must be taken. The carrier should not be forced. If resistance is encountered, which can occur with an unserviceable round, the bolt should be locked to the rear, magazine removed, and malfunction cleared-for example, a bolt override is when a cartridge has wedged itself between the bolt and charging handle. The best way to relieve this problem is by--

- Ensuring that the charging handle is pushed forward and locked in place.
- Holding the rifle securely and pulling the bolt to the rear until the bolt seats completely into the buffer well.
- Turning the rifle upright and allowing the overridden cartridge to fall out.

## 2. Failure to Fire Cartridge.

*Description.* Failure of a cartridge to fire despite the fact that a round has been chambered, the trigger is pulled, and the sear has released the hammer. This occurs when the firing pin fails to strike the primer with enough force or when the ammunition is bad.
*Probable causes.* Excessive carbon buildup on the firing pin is often the cause, because the full forward travel of the firing pin is restricted. However, a defective or worn firing pin can give the same results. Inspection of the ammunition could reveal a shallow indentation or no mark on the primer, indicating a firing pin problem. Cartridges that show a normal indentation on the primer but did not fire indicate bad ammunition.

*Corrective action.* If the malfunction continues, the firing pin, bolt, carrier, and locking lug recesses of the barrel extension should be inspected, and any accumulation of excessive carbon or fouling should be removed. The firing pin should also be inspected for damage. Cartridges that show a normal indentation on the primer but failed to fire could indicate a bad ammunition lot. Those that show a complete penetration of the primer by the firing pin could also indicate a bad ammunition lot or a failure of the cartridge to fully seat in the chamber.
**NOTE:** If the round is suspected to be faulty, it is reported and returned to the agency responsible for issuing ammunition

## 3. Failure to Extract and Eject.

**Failure to extract.** The cartridge must extract before it can eject.
*Description.* A failure to extract results when the cartridge case remains in the rifle chamber. While the bolt and bolt carrier could move rearward only a short distance, more commonly the bolt and bolt carrier recoil fully to the rear, leaving the cartridge case in the chamber. A live round is then forced into the base of the cartridge case as the bolt returns in the next feed cycle. This malfunction is one of the hardest to clear.
**NOTE:** Short recoil can also be caused by a fouled or obstructed gas tube.

*Probable cause.* Short recoil cycles and fouled or corroded rifle chambers are the most common causes of failures to extract. A damaged extractor or weak/broken extractor spring can also cause this malfunction.
*Corrective action.* The severity of a failure to extract determines the corrective action procedures. If the bolt has moved rearward far enough so that it strips a live round from the magazine in its forward motion, the bolt and carrier must be locked to the rear.
The magazine and all loose rounds must be removed before clearing the stoppage. Usually, tapping the butt of the rifle on a hard surface causes the cartridge to fall out of the chamber. However, if the cartridge case is ruptured, it can be seized. When this occurs, a cleaning rod can be inserted into the bore from the muzzle end. The cartridge case can be forced from the chamber by tapping the cleaning rod against the inside base of the fired cartridge. When cleaning and inspecting the mechanism and chamber reveal no defects but failures to extract persist, the extractor and extractor spring should be replaced. If the chamber surface is damaged, the entire barrel must be replaced.
**Failure to Eject.** A failure to eject a cartridge is an element in the cycle of functioning of the rifle, regardless of the mode of fire. A malfunction occurs when the cartridge is not ejected through the ejection port and either remains partly in the chamber or becomes jammed in the upper receiver as the bolt closes. When the firer initially clears the rifle, the cartridge could strike an inside surface of the receiver and bounce back into the path of the bolt.
*Probable cause.* Ejection failures are hard to diagnose but are often related to a weak or damaged extractor spring and/or ejector spring. Failures to eject can also be caused by a buildup of carbon or fouling on the ejector spring or extractor, or from short recoil. Short recoil is usually due to a buildup of fouling in the carrier mechanism or gas tube, which could result in many failures to include a failure to eject. Resistance caused by a carbon-coated or corroded chamber can impede the extraction, and then the ejection of a cartridge.
*Corrective action.* While retraction of the charging handle usually frees the cartridge and permits removal, the charging handle must not be released until the position of the next live round is determined. If another live round has been sufficiently stripped from the magazine or remains in the chamber, then the magazine and all live rounds could also require removal before the charging handle can be released. If several malfunctions occur and are not corrected by cleaning and lubricating, the ejector spring, extractor spring, and extractor should be replaced.

## OTHER MALFUNCTIONS

Some other malfunctions that can occur are as follows.

- Failure of the bolt to remain in a rearward position after the last round in the magazine is fired. Check for a bad magazine or short recoil.
- Failure of the bolt to lock in the rearward position when the bolt catch has been engaged. Check bolt catch; replace as required.
- Firing two or more rounds when the trigger is pulled and the selection lever is in the SEMI position. This indicates a worn sear, cam, or disconnector. Turn in to armorer to repair and replace trigger group parts as required.
- Trigger will not pull or return after release with the selector set in a firing position. This indicates that the trigger pin has backed out of the receiver or the hammer spring is broken. Turn in to armorer to replace or repair.
- Failure of the magazine to lock into the rifle. Check the magazine and check magazine catch for damage. Turn in to armorer to adjust the catch; replace as required.
- Failure of any part of the bolt carrier group to function. Check for incorrect assembly of components. Correctly clean and assemble the bolt carrier group, or replace damaged parts.
- Failure of the ammunition to feed from the magazine. Check for damaged magazine. A damaged magazine could cause repeated feeding failures and should be turned in to armorer or exchanged.

**NOTE:** Additional technical information on troubleshooting malfunctions and repairing components iscontained in the organizational and DS maintenance publications and manuals.

# FIRING POSITIONS

All firing positions are taught during basic rifle marksmanship training. During initial fundamental training, the basic firing positions are used. The other positions are added later in training to support tactical conditions.

**Basic Firing Positions.** Two firing positions are used during initial fundamental training: the individual supported fighting position and prone unsupported position. Both offer a stable platform for firing the rifle. They are also the positions used during basic record fire.

*Supported fighting position.* This position provides the most stable platform for engaging targets. Upon entering the position, the soldier adds or removes dirt, sandbags, or other supports to adjust for his height. He then faces the target, executes a half-face to his firing side, and leans forward until his chest is against the firing-hand corner of the position. He places the rifle handguard in a V formed by the thumb and fingers of his nonfiring hand, and rests the nonfiring hand on the material (sandbags or berm) to the front of the position. The soldier places the stock butt in the pocket of his firing shoulder and rests his firing elbow on the ground outside the position. (When prepared positions are not available, the prone supported position can be substituted.)

Once the supported fighting position has been mastered, the firer should practice various unsupported positions to obtain the smallest possible wobble area during final aiming and hammer fall. The coach/trainer can check the steadiness of the position by observing movement at the forward part of the rifle, by looking through the M16 sighting device, or by checking to see that support is being used.

**NOTE:** The objective is to establish a steady position under various conditions. The ultimate performance of this task is in a combat environment. Although the firer must be positioned high enough to observe all targets, he must remain as low as possible to provide added protection from enemy fire.

*Prone unsupported position.* This firing position offers another stable firing platform for engaging targets. To assume this position, the soldier faces his target, spreads his feet a comfortable distance apart, and drops to his knees. Using the butt of the rifle as a pivot, the firer rolls onto his nonfiring side, placing the nonfiring elbow close to the side of the magazine. He places the rifle butt in the pocket formed by the firing shoulder, grasps the pistol grip with his firing hand, and lowers the firing elbow to the ground. The rifle rests in the V formed by the thumb and fingers of the nonfiring hand. The soldier adjusts the position of his firing elbow until his shoulders are about level, and pulls back firmly on the rifle with both hands. To complete the position, he obtains a stock weld and relaxes, keeping his heels close to the ground.

**Advanced Positions.** After mastering the four marksmanship fundamentals in the two basic firing positions, the soldier is taught the advanced positions. He is trained to assume different positions to adapt to the combat situation.

*Alternate prone position*. This position is an alternative to both prone supported and unsupported fighting positions, allowing the firer to cock his firing leg. The firer can assume a comfortable position while maintaining the *same* relationship between his body and the axis of the rifle. This position relaxes the stomach muscles and allows the firer to breathe naturally.

*Kneeling supported position*. This position allows the soldier to obtain the height necessary to better observe many target areas, taking advantage of available cover. Solid cover that can support any part of the body or rifle assists in firing accuracy.

Kneeling unsupported position. This position is assumed quickly, places the soldier high enough to see over small brush, and provides for a stable firing position. The nonfiring elbow should be pushed forward of the knee so that the upper arm is resting on a flat portion of the knee to provide stability. The trailing foot can be placed in a comfortable position.

*Standing position*. To assume the standing position, the soldier faces his target, executes a facing movement to his firing side, and spreads his feet a comfortable distance apart. With his firing hand on the pistol grip and his nonfiring hand on either the upper handguard or the bottom of the magazine, the soldier places the butt of the rifle in the pocket formed by his firing shoulder so that the sights are level with his eyes. The weight of the rifle is supported by

the firing shoulder pocket and nonfiring hand. The soldier shifts his feet until he is aiming naturally at the target and his weight is evenly distributed on both feet. The standing position provides the least stability but could be needed for observing the target area since it can be assumed quickly while moving. Support for any portion of the body or rifle improves stability. More stability can be obtained by adjusting the ammunition pouch to support the nonfiring elbow, allowing the rifle magazine to rest in the nonfiring hand.

**Modified Firing Positions.** Once the basic firing skills have been mastered during initial training, the soldier should be encouraged to modify positions, to take advantage of available cover, to use anything that helps to steady the rifle, or to make any change that allows him to hit more combat targets. The position shown in uses sandbags to support the handguard and frees the nonfiring hand to be used on any part of the rifle to hold it steady.

**NOTE:** Modified positions can result in small zero changes due to shifting pressure and grip on the rifle.
**MOUT Firing Positions.** Although the same principles of rifle marksmanship apply, the selection and use of firing positions during MOUT requires some special considerations. Firing from around corners could require the soldier to fire from the opposite shoulder to avoid exposing himself to enemy fire.
The requirement for long-range observation can dictate that positions be occupied that are high above ground. shows a soldier firing over rooftops, exposing only the parts of his body necessary to engage a target. Figure 3-16 shows a soldier firing around obstacles. highlights the need to stay in the shadows while firing from windows, and the requirements for cover and rifle support.

## DUTIES OF THE INSTRUCTOR/TRAINER

The instructor/trainer helps the firer master the fundamentals of rifle marksmanship. He ensures that the firer consistently applies what he has learned. Then, it is a matter of practice, and the firer soon acquires good firing skills. When training the beginner, the instructor/trainer could confront problems such as fear, nervousness, forgetfulness, failure to understand, and a lack of coordination or determination. An expert firer is often unaware that some problems are complicated by arrogance and carelessness. With all types of firers, the instructor/trainer must ensure that firers are aware of their firing errors, understand the causes, and apply remedies. Sometimes errors are not evident. The instructor/trainer must isolate errors, explain them, and help the firer concentrate on correcting them.

**Observing the Firer.** The instructor/trainer observes the firer during drills and in the act of firing to pinpoint errors. If there is no indication of probable error, then the firer's position, breath control, shot anticipation, and trigger squeeze are closely observed.

**Questioning the Firer.** The firer is asked to detect his errors and to explain his firing procedure to include position, aiming, breath control, and trigger squeeze.

**Analyzing the Shot Group.** This is an important step in detecting and correcting errors. When analyzing a target, the instructor/trainer critiques and correlates observations of the firer to probable errors in performance, according to the shape and size of shot groups. A poor shot group is usually caused by more than one observable error.

## CONDUCT OF DRY-FIRE TRAINING

A skilled instructor/trainer should supervise soldiers on dry-fire training. Once an explanation and demonstration are provided, soldiers should be allowed to work at their own pace, receiving assistance as needed. The peer coach-and-pupil technique can be effectively used during dry-fire training with the coach observing performance and offering suggestions. Several training aids are available to correctly conduct initial dry-fire training of the four fundamentals. A supported firing position should be used to begin dry-fire training. Sandbags and chest-high support are used to effectively teach this position. While any targets at any range can be used, the primary aim point should be a standard silhouette zeroing target placed at a distance of 25 meters from the firing position. The other scaled-silhouette targets - slow fire and timed fire - are also excellent for advanced dry-fire training.

After the soldier understands and has practiced the four fundamentals, he proceeds to integrated dry-fire exercises. The objective of integrated dry fire is to master the four fundamentals of Marksmanship in a complete firing environment. With proper dry-fire training, a soldier can assume a good, comfortable, steady firing position when he moves to the firing line. He must understand the aiming process, breath control is second nature, and correct trigger squeeze has been practiced many times. Also, by adding dummy ammunition to the soldier's magazine, other skills can be integrated into the dry-fire exercise to include practicing loading and unloading, reinforcing immediate-action drills, and using the dime (washer) exercise.

When correctly integrated, dry fire is an effective procedure to use before firing live bullets for grouping and zeroing, scaled silhouettes, field firing, or practice record fire. It can be used for remedial training or opportunity training, or as a primary training technique to maintain marksmanship proficiency.

## CHECKLIST FOR THE COACH

The procedures to determine and eliminate rifle and firer deficiencies follows.
*The coach checks to see that the--*

- Rifle is cleared and defective parts have been replaced.
- Ammunition is clean, and the magazine is properly placed in the pouch.
- Sights are blackened and set correctly for long/short range.

*The coach observes the firer to see that he-–*

- Uses the correct position and properly applies the steady-position elements.
- Properly loads the rifle.
- Obtains the correct sight alignment (with the aid of an M16 sighting device).
- Holds his breath correctly (by watching his back at times).
- Applies proper trigger squeeze; determines whether he flinches or jerks by watching his head, shoulders, trigger finger, and firing hand and arm.
- Is tense and nervous. If the firer is nervous, the coach has the firer breathe deeply several times to relax.

Supervisory personnel and peer coaches correct errors as they are detected. If many common errors are observed, it is appropriate to call the group together for more discussion and demonstration of proper procedures and to provide feedback.

## POSITION OF THE COACH

The coach constantly checks and assists the firer *in applying marksmanship* fundamentals during firing. He observes the firer's position and his application of the steady position elements. The coach is valuable in checking factors the firer is unable to observe for himself and in preventing the firer from repeating errors.
During an exercise, the coach should be positioned where he can best observe the firer when he assumes position. He then moves to various points around the firer (sides and rear) to check the correctness of the firer's position. The coach requires the firer to make adjustments until the firer obtains a correct position.
When the coach is satisfied with the firing position, he assumes a coaching position alongside the firer. The coach usually assumes a position like that of the firer, which is on the firing side of the soldier.

## GROUPING

Shot grouping is a form of practice firing with two primary objectives: firing tight shot groups and consistently placing those groups in the same location. Shot grouping should be conducted between dry-fire training and zeroing. The initial live-fire training should be a grouping exercise with the purpose of practicing and refining marksmanship fundamentals. Since this is not a zeroing exercise, few sight changes are made. Grouping exercises can be conducted on a live-fire range that provides precise location of bullet hits and misses such as a 25-meter zeroing range or KD range.

## CONCEPT OF ZEROING

The purpose of battle sight zeroing is to align the **fire control system** (sights) with the rifle barrel, considering the given ammunition ballistics. When this is accomplished **correctly**, the fire control and point of aim are point of impact at a **standard battlesight zero range** such as 250 (300) meters.
When a rifle is zeroed, the sights are adjusted so that bullet strike is the same as point of aim at some given range. A battlesight zero (250 meters, M16Al; 300 meters, M16A2) is the sight setting that provides the highest hit probability for most combat targets with minimum adjustment to the aiming point.
When standard zeroing procedures are followed, a rifle that is properly zeroed for one soldier is close to the zero for another soldier. When a straight line is drawn from target center to the tip of the front sight post and through the center of the rear aperture, it makes little difference whose eye is looking along this line. There are many subtle factors that result in differences among individual zeros; however, the similarity of individual zeros should be emphasized instead of the differences.
Most firers can fire with the same zeroed rifle if they are properly applying marksmanship fundamentals. If a soldier is having difficulty zeroing and the problem cannot be diagnosed, having a good firer zero the rifle could find the problem. When a soldier must fire another soldier's rifle without opportunity to verify the zero by firing - for

example, picking up another man's rifle on the battlefield - it is closer to actual zero if the rifle sights are left unchanged. This information is useful in deciding initial sight settings and recording of zeros. All rifles in the arms room, even those not assigned, should have their sights aligned (zeroed) for battlesight zero.
There is no relationship between the specific sight setting a soldier uses on one rifle (his zero) to the sight setting he needs on another rifle. For example, a soldier could be required to move the rear sight of his assigned rifle 10 clicks left of center for zero, and the next rifle he is assigned could be adjusted 10 clicks right of center for zero. This is due to the inherent variability from rifle to rifle, which makes it essential that each soldier is assigned a permanent rifle on which all marksmanship training is conducted. Therefore, all newly assigned personnel should be required to fire their rifle for zero as soon as possible after assignment to the unit. The same rule must apply anytime a soldier is assigned a new rifle, a rifle is returned from DS or GS maintenance, or the zero is in question.

# M16Al STANDARD SIGHTS AND ZEROING

To battlesight zero the rifle, the soldier must understand sight adjustment procedures. The best possible zero is obtained by zeroing at actual range. Because facilities normally do not exist for zeroing at 250 meters, most zeroing is conducted at 25 meters. By pushing the rear sight forward so the L is exposed, the bullet crosses line of sight at 25 meters, reaches a maximum height above line of sight of about 11 inches at 225 meters, and crosses line of sight again at 375 meters.

To gain the many benefits associated with having bullets hit exactly where the rifle is aimed during 25-meter firing, the long-range sight is used on the zero range. Therefore, when bullets are adjusted to bit the same place the rifle is aimed at 25 meters, the bullet also bits where the rifle is aimed at 375 meters. After making this adjustment and flipping back to the short-range sight and aiming center of mass at a 42-meter target, the bullet crosses the line of sight at 42 meters and again at 250 meters as shown in.

Most combat targets are expected to be engaged in the ranges from 0 to 300 meters; therefore, the 250-meter battlesight zero is the setting that remains on the rifle. At 25 meters, the bullet is about I inch below line of sight, crossing line of sight at 42 meters. It reaches its highest point above the line of sight (about 5 inches) at a range of about 175 meters, crosses line of sight again at 250 meters, and is about 7 inches below line of sight at 300 meters. Targets can be hit out to a range of 300 meters **with** no adjustments to point of aim. (A somewhat higher hit probability results with minor adjustments to the aiming point.)
**Sights.** The sights are adjustable for both elevation and windage. Windage adjustments are made. on the rear sight; elevation adjustments on the front sight.
*Rear sight.* The Tear sight consists of two apertures and a windage drum with a spring-loaded detent. The aperture marked L is used for ranges beyond 300 meters, and the unmarked or short-range aperture is used for ranges up to 300 meters. Pressing in on the spring-loaded detent with a sharp instrument (or the tip of a cartridge) and rotating the windage drum in the desired direction of change (right or left) in the strike of the bullet makes adjustments for windage.

*Front sight.* The front sight consists of a round rotating sight post with a five-position, spring-loaded detent. Adjustments are made by using a sharp instrument (or the tip of a cartridge). To move the front sight post, the spring-loaded detent is depressed, and the post is rotated in the desired direction of change (up or down) in the strike of the bullet.

**Sight Changes,** To make sight changes, the firer first locates the center of his three-round shot group and then determines the distance between it and the desired location. An error in elevation is measured vertically, while a windage error is measured horizontally. When using standard zero targets or downrange feedback targets, sight adjustment guidance on the target is provided.
To raise the strike of the bullet, the firer rotates the front sight post the desired number of clicks clockwise (in the direction of the arrow marked UP in. Thus, the strike of the bullet is raised but the post is lowered. He reverses the direction of rotation to move the strike of the bullet down.

To move the strike of the bullet to the right, the windage drum is rotated the desired number of clicks clockwise (in the direction of the arrow marked R,. The firer reverses the direction of rotation to move the strike of the bullet to the left.

**NOTE:** Before making any sight changes, the firer should make a serviceability check of the sights, looking for any bent, broken, or loose parts. The firer must also be able to consistently fire 4-cm shot groups.

## M16A2 STANDARD SIGHTS AND ZEROING

When the soldier can consistently place three rounds within a 4-cm circle at 25 meters, regardless of group location, he is ready to zero his rifle.

The front and rear sights are set as follows:

**Rear sight.** The rear sight consists of two sight apertures, a windage knob, and an elevation knob.

The larger aperture, marked 0-2, is used for moving target engagement and during limited visibility. The unmarked aperture is used for normal firing situations, zeroing, and with the elevation knob for target distances up to 800 meters. The unmarked aperture is used to establish the battlesight zero.

After the elevation knob is set, adjustments for elevation are made by moving the front sight post up or down to complete zeroing the rifle. Adjustments for windage are made by turning the windage knob.

The rear windage knob start point is when the index mark on the 0-2 sight is aligned with the rear sight base index.

**Front sight.** The front sight is adjusted the same as the front sight of the M16Al. It consists of a square, rotating sight post with a four-position, spring-loaded detent. Adjustments are made by using a sharp instrument or the tip of a cartridge. To raise or lower the front sight post, the spring-loaded detent is depressed, and the post is rotated in the desired direction of change.

# M 16 ZERO PROCEDURES AND FIRE COMMANDS

**INTRODUCTION.** Zero firing is executed in the prone position the firing line at targets positioned 25 meters in front of the firing line.

**RANGE CLEARENCE PRIOR TO FIRING:**

1. Visually clear the range, especially the ridge to the rear.
2. Over the public address system three times.

**a. FIRST: Is there anyone down range**
**b. SECOND: The range is no longer clear**

**FIRE COMMANDS:**

1. Fires, ensure your weapons are on SAFE. Keep your weapons at the high port arms with muzzles pointed downrange. Proceed to your designated firing point on the firing line and assume a good prone supported position.

2. Fire you will shoot at a target panel located 25 meters directly in front of your position. Shoot only at the target designated by your coach.

3. Coaches, issue two 3 round magazines to each firer.

4. FIRST SET OF FIRE COMMANDS:

    a. "Fires you will initially fire three rounds at the numbered target in your lane.
    b. "Fires pick up your weapons, lock and load your first 3 round magazine.
    c. "Ready on the left?" (Wait for white paddle signal from ARSO.)
    d. "Ready on the right?" (Wait for whit paddle signal from ARSO.)
    e. "The range is no longer clear!"
    f. "Fires, place your selector switch on SEMI."
    g. "Fires watch your lanes. Commence firing at the target in your lane."
    h. " Upon completion of the live fire exercise declare Cease Fire! LOCK AND CLEAR ALL WEAPONS."

i. “Clear on the left?” (Wait for all clear white paddle signal from ARSO.
j. “ Clear on the right?” (Wait for all clear white paddle signal from ARSO.”
k. “The firing is clear. Firers, ensure your weapons are on SAFE and placed on the weapon rest.”
l. “Coaches, ensure that all weapons have the bolt locked to the rear, and the selector switch on SAFE.”
m. “Firers, leave your prone position and move downrange toward your target.”
n. “Firers, connect the bullet holes with a pencil and mark the holes with the number 1. Examine the shoot group for fundamental errors and note what sight adjustments may be needed.
o. “Firers return to the firing line.”

5. **SECOND SET OF FIRE COMMANDS**

a. “Firers, assume a good prone supported position and fire a second three rounds at the target in your lane.”
b. “Firers, pick up your weapons.”
c. “Ready on the left?” (Wait for white paddle signal from ARSO.)
d. “Ready on the right?” (Wait for whit paddle signal from ARSO.)
e. “Ready on the left?” (Wait for white paddle signal from ARSO.)
f. “Ready on the right?” (Wait for whit paddle signal from ARSO.)
g. ““The range is no longer clear!”
h. “Fires, place your selector switch on SEMI.”
i. “Fires watch your lanes. Commence firing at the target in your lane.”
j. “ Upon completion of the live fire exercise Cease Fire! LOCK AND CLEAR ALL WEAPONS.”
k. “Clear on the left?” (Wait for all clear white paddle signal from ARSO.
l. “ Clear on the right?” (Wait for all clear white paddle signal from ARSO.”
m. “The firing is clear. Firers, ensure your weapons are on SAFE and placed on the weapon rest.”

n. “Coaches, ensure that all weapons have the bolt locked to the rear, and the selector switch on SAFE.”
o. “Firers, leave your prone position and move downrange toward your target.”
p. “Firers, connect the bullet holes with a pencil and mark the holes with the number 1. Examine the shoot group for fundamental errors and note what sight adjustments may be needed.
q. “Firers return to the firing line.”
r. “Fires adjust your sights.”

**6. THIRD SET OF FIRE COMMANDS:**

a. REPEAT STEPS A – O.
b. “Firers connect the bullet holes with a pencil and mark the holes with the number 3. Examine the shot group and determine that it is centered within the 4-centimeter circle.
c. “Firers, if your instructor is satisfied that you have achieved zero, remove your target from the target panel and keep it.
d. “Firers return to the firing line.”
e. If it is the last soldier to zero on a given lane give the following additional command: “Firers in lanes X remove the target panel and return it to the firing line.”
f. “Fires pick up your weapon. Everyone, keep your weapons at high port arms with muzzles pointed downrange”.
g. “Firers that have failed to zero their weapons, standby. All other personnel move out to have your weapons rodded prior to leaving the firing line. The Range Safety Officer will conduct a shakedown inspection once you have exited.”

# Training Completed

# Mission Risk Assessment Worksheet
# EXAMPLE



| 1. Unit: | 2. Prepared by: (Rank/Last name/Duty Position | 3. DTG Prepared: |
|---|---|---|
| 4. Mission/Task: | | 5. DTG Begin<br>DTG End: |
| 6. Leader Task (If applicable): | 7. Individual Task (If applicable): | |

| 8. Hazards | 9. Initial Risk Level* | 10. Controls | 11. Residual Risk Level* | 14. How to Implement | 15. How to Supervise | 16. Controls Effective ? |
|---|---|---|---|---|---|---|
| Soldier not familiar with task. | | Prior task training on weapons and range operations. Safety briefing prior and at training site. | | Sop's, Rehearsals, AR 385-63 USASC&FG 210-21 | Commander, OIC/RSO | |
| Soldier may become disoriented to their sector of fire. | | OIC/RSO will place each soldier on the firing line and ensure each soldier knows his or her sector of fire. | | Sop's, Rehearsals, AR 385-63 USASC&FG 210-21 | OIC/RSO | |
| Soldiers may loss their footing while moving on or off the firing. | | Soldiers will rehearse movement on and off range, be briefed to move carefully, and be lead on and off range by the RSO. Leaders will recon range prior to occupying. | | Sop's, Rehearsals, AR 385-63 USASC&FG 210-21 | OIC<br>RSO | |
| Weapons not being cleared as soldiers move off firing line | | RSO will inspect all weapons prior to soldier moving off firing line. | | Sop's<br>Rehearsal<br>USASC&FG 210-21 | OIC<br>RSO | |
| Clearing malfunctions and stoppages by soldiers | | Soldier will perform immediate action to clear stoppage. RSO will be on site to handle major malfunctions. | | Same as above | Same as above | |
| Removal of brass or live rounds from range by soldiers in training | | All soldiers will be inspected prior to moving off range. | | Same as above | Same as above | |

| 12. Overall risk level after controls are implemented (Circle one or High Light) | 13. Risk Decision Authority: (Rank/Last Name/Duty Position) | DTG and Signature |
|---|---|---|
| LOW **MODERATE** HIGH EXTREMELY HIGH | | |

# Fort Gordon Range Operations
# Unit OIC/RSO Checklist

**RANGE SCHEDULING & PLANNING**

❑ Contact your Bn S3 / training NCO and confirm: **(1)** Range location, **(2)** Weapon system, **(3)** Munitions type, **(4)** Firing hours, and **(5)** Range Contract (control) Number. **RFMSS Scheduling Office and info: 791-5005/5008**

❑ Obtain and review **FM's** and **TM's** on weapon systems to be supervised.

❑ Arrange for Combat Lifesaver (.50 cal and below), emergency vehicle w/ litter.

❑ **All Ranges require one certified (E7 or above for OIC duties), one certified E6 or above for RSO duties. Non-certified (E4 CPL or above) Line Safety NCOs.**

❑ Review **AR 385-63, Chapter 4**, Range Safety Duties and responsibilities for OIC / RSO / NCOIC, FG Regulation 210-21 section 2.

❑ Ensure that ammunition NCO orders and draws correct types of ammunition for your range. **Ensure that RFMSS reflects correct ammo type.**

**RANGE RECON & CHECK-IN – AT LEAST ONE DAY PRIOR TO TRAINING EVENT**

❑ Recons will be coordinated at least 24 hours prior to the range.

❑ OIC, RSO, and Medic will **jointly** check-in with Range Control on the day of range.

❑ Read and research **(1)** Local range SOP.

❑ Do the following: **(1)** Conduct recon of range, training area and billeting facilities, **(2)** Request fire hazard conditions, **(3)** Confirm tracer usage, and authority to use pyrotechnics [CS gas] with Range Control, (4) Sign for Fire barrels.

❑ Sign for range, training area, and facilities. Make final coordination for any special targetry or other special needs.

❑ **Special Targetry Scenarios** require check-in and coordination at least 45 **days** in advance. Will target carpentry work be required**?**

**BEFORE DEPARTING FOR RANGE**

❑ Test your SINGARS communications system (calibrated - in the clear) one-day before you go to the range.

❑ Ensure that your ammunition-laden vehicles are properly placard.

❑ See **AR 385-63** - **TM 9-1300-206** explosives safety criteria for training operations on firing ranges.

❑ Assemble and test space heaters at unit rear. Follow winterized fuel requirements. GP medium tents can be placed on ranges.

❑ Obtain two **1-A:10B:C** (dry chemical) fire extinguishers, water cans and shovels for fire fighting.

**ON DAY OF RANGE** *** If you need to cancel your range please call Range Scheduling Office 791-5005/5008**

❑ On scheduled day the OIC, RSO, and Medic, must sign in at Range Control before occupation of the range.

❑ Establish communications with Range Control:

**42.000 in the clear**

❑ Brief soldiers on range safety procedures, and (Red Box) ammunition amnesty program. Brief road guards.

❑ When you are ready to fire call Range Control and ask for a **"HOT" time.** Ensure red range flag(s) are hoisted and down range [SDZ] is clear before firing.

**DURING FIRING - REQUIRED DA FORM 1594 ENTRIES**

❑Monitor the radio at all times, make hourly radio checks with Range Control, RTO.

❑ Immediately Notify , RTO of any unusual incidents such as: **(1)** Civilian encroachment on range, **(2)** Accidents, **(3)** Injuries, **(4)** Malfunctioning weapons & munitions, **(5)** Rounds off the range, and **(6)** UXO **(7)** RSO monitors range safety, **(8)** Make DA Form 1594 entries.

**COMPLETION OF FIRING**

❑ Call RTO for **"COLD"** time. Request range clearance instructions. Take down red range flag(s)

❑ Provide this information to RTO: **(1)** number and types of rounds fired, **(2)** Number of Duds or misfires, and **(3)** Number of personnel trained. Don't depart range until properly cleared by Range Control supervisory personnel. Please provide written comments on back of RUDF.

❑ Police all portions of the firing line, gun positions, battle positions, and concurrent training areas.

❑ Please provide Range Control with ***written*** [positive or negative] comments. Let us know about unsafe conditions or damaged facilities.

# FORT GORDON RANGE OPERATIONS TELEPHONE NUMBERS

**RANGE MANAGEMENT SECTION**
**BLDG. #482 RANGE ROAD**

| | |
|---|---|
| Range Operations Manager, MSG Ramtahal | 791-5005 |

**RANGE CONTROL CENTER**
**BLDG # 482 RANGE ROAD, FORT GORDON**

| | |
|---|---|
| Range Operations/ Scheduling, SSG Hill | 791-9936 |
| Installation Ammo Manager SGT Vasquez | 791-9937 |
| Integrated Training Area Management (ITAM), Mr Perkinson | 791-5008 |
| Maintenance NCOIC, SSG Pagan | 791-9934 |

**To: Fort Gordon Director Of Plans, Training, and Mobilization (DPTM)**

**From: Fort Gordon Range Control Center, RTO Desk**

**Tel: 791- 5005/5008 FAX 791-5007**

**NOTIFICATION OF: Accident Injury Unusual Incident**

Date: : Time: : POC: :

(1) Where did incident occur geographically: :

(2) Grid location: :

(3) Unit: : OIC name: :

(4) Unit Tel #: : Freq/Call sign: :

Brief description of incident:

Who :

What :

When :

Where :

Why :

How :

What is being done :

What is needed / required :

**Who was notified: FG Safety MPs Other _____**

**FAX to: DPTM**

# LIGHTNING PROTECTION

Fort Gordon, Single Source Safety Document, Chapter 6

6-1. Troop Precautions: Notifications of severe weather will be provided in accordance with the HQ, USASC&FG Severe Weather Emergency Action Plan (SWEAP). However, commanders at all levels should be cognizant of weather situations around them that may be threatening to their troops. Up-to-date weather information/forecasts may be obtained by contacting the National Weather at 724-0056, checking the weather channel 17, contacting the Plans, Operations, and Training Division, DPTM at 791-3531 or via the Internet at http://www.weather.com/weather/uscities/GA_Augusta.html. Weather intelligence data for operations areas outside the Fort Gordon/Augusta/CSRA, may be obtained by contacting the Security Division, DPS, ATTN" ATZH-PSS.

6-2. Protective Measures: In the event warning is provided of impending electrical storm or lightning is noticed in the vicinity of Fort Gordon, the unit commander, officer or NCO in charge of the training, ceremony or event, or the senior individual present will:

a. Cease all outside activity immediately.

b. Move personnel into a building or lightning protected area, if possible.

c. Ensure all personnel remove steel helmets and stack weapons at least 50 meters away from personnel. If time is not available to stack weapons, weapons and metal helmets will be laid on the ground or on firing line rifle rest, within view of where troops will be located.

d. If a building is not available, move personnel into dense woods, a low area, or to the foot of a steep hill.

e. Ensure all personnel are moved away from fences, electrical wiring, vehicles, masses of metal, or other possible conductors of electricity.

f. Ensure personnel remain in building or other safe area until the lightning has ceased.

g. When marching in formation, troops will increase the minimum distance and interval to twice that normally maintained.

h. Radios will not be used, nor will troops carry radios with antennas extended.

i. Troops will be evacuated from areas containing television antennas, relay antennas, or vehicles with whip antennas.

j. Personnel will dismount from dozers, graders, and all other metal machinery and move to a safe distance (for example, approximately 100 yards, depending upon terrain and conditions).

k. Personnel will not huddle together, if unavoidably caught in flat, open space, or on a bare hilltop. Instead, scatter to reduce the attraction of lightning to a mass of bodies.

l. Restrict the use of telephones, computers and other electrical devices.

6-3. Lightning Casualties: Immediate attention should be directed to those who may appear to be dead. Individuals who are stunned or dazed but moving about can usually recover alone, but should be examined by medical personnel as soon as possible. Those whose breathing and/or heartbeat have stopped need immediate attention. Should such a casualty occur, a qualified person should begin artificial respiration and cardiopulmonary resuscitation, treat for shock, and evacuate to the nearest hospital emergency room.

## RECOMMENDED BRIEFING

The first priority of this range is training, but safety must be at the forefront of the training program. The safety program will be corrected immediately. The safety program should include the following:

- The two red and white candy-striped poles, located on the far right and far left (point to them), are the range left and right limits. Firers never fire or point their rifles outside the limits of these poles.
- When not on the firing line, the selector lever is on SAFE, the bolt is locked to the rear, and the dust cover is open. (Demonstrate.)
- Firers will always enter and exit the firing line at the base of the tower. (Point.)
- Before occupying the firing positions, inspect the positions for harmful animals and insects.
- Firers will always point the muzzle of the rifle downrange whenever on the firing line. The firing finger is not placed within the trigger housing area. (Demonstrate.)
- Lock the bolt to the rear and place the rifle on SAFE on the firing line. Chamber blocks may be used.
- Smoke only in designated smoking areas. (Inform soldiers where.)
- You will not eat or drink on the firing line unless the tower operator permits you to drink from your canteen. Drink water often to prevent heat injuries.
- Never touch your rifle while personnel are downrange or in front of the firing line.
- Load the magazine into the rifle only on the command of the tower.
- Never fire without wearing hearing protection when within 25 meters of the firing line.
- Before leaving the firing line, the safety NCO must rod the rifle.
- Consider the rifle loaded at all times, even in the break areas. Never point the rifle at anyone.
- Left-handed firers will fire the M16A1 with left-handed brass deflectors attached to the rifle.
- Anyone observing an unsafe act will immediately call CEASE FIRE, place his rifle on SAFE, place it in the V-notch stake or on the sandbags, and then give both the vocal alarm and visual signal of cease fire. (Demonstrate and have soldiers demonstrate.)
- Once cleared off the firing line, firers report immediately to the ammunition point and turn in all ammunition and expended brass.
- No one will leave the range until he has been inspected for ammunition and brass.

**NOTE:** When an electrical storm occurs, the safety NCO will direct the tower operator to prepare to disperse soldiers. At that time, the tower gives the command LOCK AND CLEAR ALL WEAPONS AND GROUND ALL EQUIPMENT (except for wet-weather gear). Then the tower operator directs soldiers to a safe area.

# RANGE UTILIZATION DATA FORM (RUDF)

## . Fort Gordon Range Control

Range 1 - Range 2 - Range 4 - **Range 5** - Range 6

Range 7 - **Range 8** - Range 9 - **Range 10** - **Range 11**

**Range 14** - **Range 15** - **Range 16**

**Demo Pit**

**1** Range Date(s):_____Thru:_____
month / day / 20__ month / day / 20__

Hours scheduled From: 0730 To:1630 Extension granted **Yes** **No**

Unit:_____

Telephone:_____ **# Vehicles: ____ # Personnel:_____**

**2** I have read and understand the Range Control SOP, and Range Safety requirements pertaining to this range.

OIC: _____ _____ _____
last name / first/ initial / rank Last 4 signature

**OIC:** Has a signed Risk Assessment in hand: Yes___ _____
signature

RSO: _____ _____ _____
last name / first / initial / rank Last 4 signature

**3** **Circle authorized weapon systems that you will be firing:**

Small Arms Weapons:
**9MM - M9 - M16/M4 - M24 - M60 - M240B/G - M249 SAW**
**BFV (7.62 Coax)- 25mm – M2 50cal**
**List other weapons here:**

**Subcaliber, Inert, TPT :**
**MARK-19 (TPT) - M203 (TPT) - AT-4 (9mm subcal) - Mortars (subcal)**
**TOW (inert)**

**High explosives: (Check with Range Control officer for current restrictions)**
**MARK-19 (HE) - M18 Claymore (HE) - Hand grenades (HE) - Tow (HE)**
**AT-4 (HE) - Artillery (HE) - Mortars (HE)**
**Demolitions: Restrited to no more than (one) 25 lb. charge at a time.**

## 4 Provide special scenario information:

- Special fire & maneuver (M31A1 targetry) **YES** **NO** Approved by: _____
- Moving targets **YES** **NO** Type:_____ Approved by: _____
- Pyrotechnics / Demo **YES** NO :_____ Approved by: _____
- Tracer Ammunition Approved **YES** **NO** Approved by: _____

## 5 Pre-firing Checklist :

☐Commo check (42:000) with RC, RTO ☐Road guards posted ☐Down range cleared
☐TMs & FMs on range ☐Two **[1-A:10B:C]** fire extinquishers ☐Hearing protection ☐RSO safety briefing provided for soldiers, Line safety NCO's, and Ammo NCO.
☐Targets aligned according to SOP diagram ☐ Combat lifesaver /MEDIC with up-to-date aid bad, litter, and emergency vehicle on site

**Hot** time: _____

## 6 Post-firing Checklist ?

Type and # of rounds fired: **1)** _____ **2)** _____ **3)** _____
**No. # of Personnel fired:** _____

**Were there any misfires on the range** **YES** **NO**
**Were there any DUDS on the Range? Was EOD called?** _____
☐Target stands removed ☐Firing points raked ☐Range policed ☐Latrine cleaned
☐Range flag down ☐End commo with RC, RTO ☐Cleared by RC, **"Cold"** time:_____

# After Action Comments

**6 Please circle subject matter that you are concerned about. Provide a written commentary of the problem, situation, and incident:**
**Scheduling - Condition of range -**

**Comments**:_____
_____
_____
Attach written commentary of problem areas:

**7 Were there any range safety incidents?: YES NO**

**Accident - Injury – Range Cadre issues - Weapons safety - Ammunition malfunctions - Targetry malfunctions - Firing positions - Vehicle / driver safety - Brush fires - EOD incidents**

**Other situations or occurrences:**_____
**Description:**_____
_____
_____