

North Carolina	SAFETY, OCCUPATIONAL & ENVIRONMENTAL HEALTH	
Department of	Section: B – Safety Hazards	Policy # : B-2
Correction	Effective : 04/01/06	Rescinds : N/A
Title: Firing Ranges		

References:

Division of Prisons, Policy & Procedure Manual, Policy 3000: Firing Ranges (6-12-02)

“Best Management Practices for Lead at Outdoor Shooting Ranges”, EPA-902-B-01-001, January 2001.

“Environmental Aspects of Construction and Management of Outdoor Shooting Ranges”, National Shooting Sports Foundation, 1997.

Purpose:

The purpose of this policy is to establish guidelines for the approval, operation and inspection of firing ranges used by Department of Correction personnel, and for the use by outside agencies of Departmental ranges.

Definitions:

Berm or Backstop: Refers to the mound of earth located behind the target holder. Its purpose is to absorb and contain fired projectiles.

Essential: Refers to standards considered necessary but may not be met by each respective firing range as long as the Safety, Occupational & Environmental Health Office has a written plan of corrective action for the essential standard(s) for that respective firing range.

Ground Cover: Includes the entire surface area of the range, which must consist of soft material such as vegetation or soil, which will not produce ricochets. Soft rubber matting is also allowed.

Mandatory: Refers to standards which, unless specifically waived by the Safety, Occupational & Environmental Health Director, must be met upon inspection of the firing range.

Outside Agencies: Local law enforcement agencies, municipal, county, state and federal government agencies; and criminal justice organizations other than the Divisions of Prisons and Community Corrections.

Spur: The mound of earth extending in the direction of the firing lines from each end of the berm. Its purpose is to prevent accidental firing beyond the ends of the berm.

Policy:

The Department recognizes the need to operate firing ranges in order to comply with mandatory firearms training for staff. The Safety, Occupational & Environmental Health Office shall ensure that firing ranges utilized by Departmental staff to conduct mandatory and/or approved optional firearms training are safe, secure and meet the required regulatory standards. All firing ranges used by Department staff will be inspected annually and be approved/disapproved for use by the Safety, Occupational & Environmental Health Office.

Approval/Disapproval of Ranges:

A list of approved firing ranges will be maintained by the Safety, Occupational & Environmental Health Office. It will be distributed to the Divisions of Prisons and Community Corrections annually and whenever changes are made. Any request for approval for Department staff to use a firing range not on the list, whether or not the range is located on Departmental property, will be submitted through the chain-of-command to the Safety, Occupational & Environmental Health Director. A representative of the Safety, Occupational & Environmental Health Office will inspect the range to ensure that all mandatory requirements are met and that a plan is in place to address the essential standards as applicable. If approved for use the range will be added to the list of approved ranges and the individual who initiated the request will be notified in writing, via the chain-of-command, of this approval.

If the range is disapproved for Departmental use the individual who initiated the request will be notified in writing, via the chain-of-command, of the reason(s) for disapproval. In the event a disapproved range is subsequently brought up to standards through repair and renovation, the range may be resubmitted for approval in accordance with the above procedures.

Inspection of Ranges:

Each approved firing range will be inspected annually by the Safety, Occupational & Environmental Health Office to ensure that established standards continue to be met. Department staff shall not utilize any firing range not on the approved list. Firing ranges will be inspected and approved based on the following standards. Where appropriate and as approved by the Safety, Occupational & Environmental Health Director one or more of these standards may be waived or modified for or during use by special teams.

- (a) Mandatory Standards for Basic and In-Service Firearms Training
 - 1. Berm must be made of dirt and should be, to the extent feasible, free of surface debris (rocks, asphalt, cement, etc.) that may cause a ricochet.

2. Berm is to be seeded with grass or some type of vegetation to prevent erosion.
3. There will be a maximum of six feet in width space per lane with a maximum of twelve (12) lanes.
4. Target holder will be nylon rope, minimum ½” diameter. Ranges having steel cable for target holders may continue to operate until such time as the cable needs to be replaced. At that time the target holder will be replaced with nylon rope.
5. Firing lines, typically at 3, 7, 15, 25, and 50-yards, will be marked with lime or other appropriate marking substance. Concrete, bricks, etc. shall not be used for markers. Heavy gauge rubber matting may be used.
6. Ground cover shall be, to the extent feasible, free of all debris that could cause a ricochet.
7. Removable barricades shall be available at the 25-yard line.
8. Each firing lane shall be equipped with an adjustable rifle/shotgun safety device to prevent accidental firing over the berm (elevation trajectory). This requirement does not apply to ranges approved for revolver use only and has been waived for the ranges at Odom and Caledonia Correctional Institutions.
9. The range access control gate shall be locked except when the range is in use.
10. Prior to construction or renovation the Safety, Occupational & Environmental Health Office shall be contacted for consultation and monitoring.
11. Inmate labor may be used only for construction of new firing ranges. Once the range is approved for use inmates shall not be allowed on the range at any time for any reason unless specifically approved in writing by the Safety, Occupational & Environmental Health Director.
12. A 20-foot flagpole shall be located at the range. A red flag shall be raised when the range is in use. During low limited light firing a red light (battery operated) will replace the flag. The flagpole must be strategically located in an area visible upon approaching the range.
13. Perimeter warning signs 12” wide by 18” high (minimum size) displaying red letters on a white background reading “DANGER – Firing Range” shall be posted along all sides of the range.
14. First aid kits shall be on-site during firearms training.
15. A fire extinguisher shall be on-site during firearms training.

16. A vehicle shall be on-site for emergency use during firearms training. A means of communication will also be available during training (telephone, two-way radio, walkie-talkie, etc).
17. Recreational firing will not be permitted.
18. No personal firearms will be allowed on the range. No cell phones on the firing line.
19. ANSI approved hearing and eye protection shall be worn by all participants, instructors and observers within 20-feet of the range. All personal protective equipment will be provided at the training site.
20. Each range will be equipped with a minimum of 20 ear muffs, 20 safety glasses and 5 safety goggles.
21. All firearms trainees and instructors must provide and wear a billed baseball cap during training. The baseball caps must be worn with the bill in the forward position.
22. Inclement weather gear is the responsibility of the employee's work unit.
23. All personnel must wear clothing appropriate for firearms training. Uniforms or personal clothing may be worn; however, all participants must wear clothing with belt and pockets. Halters, tank tops, shorts, flip-flops, sandals and other inappropriate clothing will not be permitted.
24. Restroom facilities must be available on or in close proximity to the range.
25. The firing range must be equipped with adequate tables and seating for range needs.
26. At least three certified firearm instructors will be on-site during regularly scheduled firearms training if over half the lanes are in use, or a minimum ratio of one instructor per six students plus one instructor to act as range safety officer.
27. The instructor will be responsible for range opening and closing procedures in accordance with training manuals.
28. The instructor will inspect and approve the condition of weapons to be used during training.
29. Safety rules will be posted at the range with strict compliance required. The instructor will review the range operation rules including safety rules with students prior to actual use of range. The instructor will also review safety information concerning lead exposure on the firing range and proper procedures for the

handling of brass, hand washing before eating, drinking, smoking, etc. and other appropriate precautions.

30. For ranges on Department property the Superintendent or his/her designee(s) will approve all uses of the firing range and will be responsible for maintaining a schedule for range use and performing monthly inspections.
31. Prior to use of any off-site range the responsible Division staff member will obtain written permission from the agency controlling the range.

(b) Firing Ranges Essential Standards

1. The minimum height of the berm will be 20-feet with a minimum 45-degree impact angle.
2. Spurs will be at least 20-feet high (same height as berm), at least 15-feet long and tapered to a minimum 45-degree impact angle.
3. The firing range will have a storage facility for range supplies.
4. The range will be equipped with an adequate public address system (wireless microphones).
5. To simulate tower firing a platform of 22-feet maximum height should be constructed 10 feet beyond the 50-yard line marker in the center of the range. Tower should have multipurpose platforms with approximate height of assigned tower.
6. A weapons safety device (elevation trajectory) will be installed on the platform.

(c) Outside agencies desiring to use a range on Department property must obtain approval from the respective Superintendent or his/her designee. Such agencies will provide a certified instructor during its training sessions. The agency will be responsible to provide its own weapons and supplies. Outside agencies will not be allowed to use larger caliber weapons than those approved for Department use. Except for the instructor/student ratio requirements outside agencies must abide by all the safety requirements outlined in this policy.

Safety Rules:

The following safety rules will be followed by all persons at all times while the range is in use:

- (a) Use of a range on Department property must be approved by the Superintendent or his/her designee.

- (b) Safety first, always.
- (c) No alcoholic beverages or drugs, or person(s) under the influence of alcoholic beverages or drugs, will be allowed on the range.
- (d) There will be no loaded weapons allowed except when on the firing line.
- (e) Load/unload only on command of the range officers.
- (f) Follow all instructions given by the range officers.
- (g) Keep all weapons pointed down-range when not holstered.
- (h) No one will be allowed down-range unless the range officer signals that the firing line is clear.
- (i) There will be no shooting over the berm.
- (j) Shoot only at the target in the designated firing lane. Shooting at other objects (target holders, clips, other targets, etc.) will not be tolerated.
- (k) Remove all used targets and backers when finished shooting. Return cardboard and other supplies to designated storage areas.
- (l) When training is complete clean up area before leaving the range. This includes spent cartridge casings.
- (m) No horse playing of any kind will be tolerated.
- (n) Violation of any of these safety rules will be cause for expulsion from the firing range.

Maintenance and Supplies:

- (a) Ammunition, targets, backers and other range supplies shall be requested as needed from the Office of Staff Development and Training.
- (b) Routine maintenance and upkeep of ranges on Department property will be the responsibility of the respective Superintendent. Requests for equipment and safety supplies including but not limited to nylon rope, rubber matting, grass seed, etc. should be submitted via the chain-of-command through the Division of Prisons.
- (c) Environmental Concerns (DOP Ranges Only):
 - 1. Mowing Grass: Grass should be mowed early in the morning while it is still slightly damp to prevent generating airborne dust. Grass should be left at least 4"

high. Grass must be reseeded as needed to prevent bare spots and erosion. Fescue and Bermuda grasses have been shown to absorb lead in environmental studies. Bermuda grass is also less palatable to animals.

2. Disturbing Dirt: Berm and spurs should be sowed with grass to prevent erosion. Impact areas directly behind the targets should be reseeded with grass frequently.
3. Soil Sampling: A composite soil sample will be collected at least annually from each firing range and tested for pH and phosphate levels. This sample can be collected during the annual safety inspection of the range with the test results and any corrective actions needed reported on the inspection form.

pH: A pH range must be maintained between 6.5 and 8.5. Spreading bags of 50 pounds (for sandy soils) or 100 pounds (for clay soils) of pelletized lime per 1000 square feet will raise the pH approximately one pH unit.

Phosphate: The phosphate index must be at least 50 to maintain sufficient nutrients for plant life. This level should be adequate to bind with any free lead on the range. Generally, 15 to 20 pounds of phosphate in rock form per 1000 square feet will effectively control lead.

4. Armoring the Berm: A firing range shooting log will be maintained by the facility to assist with this evaluation. During each monthly and annual inspection the berm will be evaluated for possible armoring by counting the number of visible fragments in one square foot of soil. All fragments regardless of origin will be counted. The results will be reported on the inspection form. A count of more than 150 pieces per square foot will require corrective action. Corrective action can be either resurfacing the berm or reclamation depending on the age, use and condition of the range. During each inspection the berm will be probed with a 2-foot long rod to ensure that no large rocks or other solid objects are within 2 feet of the surface. The berm will be probed using a 2 square foot grid pattern behind the target impact zone. The berm can be probed at random intervals outside the target impact zone.
5. Resurfacing Berm: The berm and spurs should be surfaced with at least 2 feet of clean dirt that is free of rocks and other materials that could cause a ricochet. Use dirt with high clay content. Very steep berms may need to be sloped or terraced to prevent erosion.
6. Reclamation Procedures & Waste Disposal: The lead from outdoor firing ranges should be reclaimed on a periodic basis. Current best management practices recommended by EPA suggests that backstop reclamation should be performed when it contains at least 20 pounds of lead per square foot, a maximum of 100,000 rounds per lane have been fired, or every one to five years. The Safety Office will contract with reclamation and recycling companies to furnish these services when needed.

Recordkeeping:

- (a) The annual safety inspection will be maintained and available for review purposes by all entities named in the distribution section of the form.
- (b) A list of all approved firing ranges will be maintained by the Safety Office and distributed to all affected Divisions at least annually.
- (c) Department owned firing ranges must be inspected monthly by the Superintendent or his/her designee. This inspection is to ensure that the range is maintained in a safe and secure manner. Retain monthly inspections at the facility for two years. Retain the shooting log at the facility for five years.
- (d) The Safety Office will maintain the following records for the life of the range plus 10 years after its closure: annual safety inspections, required maintenance or corrective actions performed by staff, and any contracted services.

**North Carolina Department of Corrections
Safety, Occupational & Environmental Health Office
List of Approved Firing Ranges
Updated: 12 June 2002 by Division of Prisons**

This list of approved firing ranges is in accordance with Safety Policy B-2: Firing Ranges. It is based on site inspections conducted by the Division of Prisons Chief of Security Office through 2002. In 2006 the annual inspection of all firing ranges used by DOC was transferred to the Safety, Occupational & Environmental Health Office. This list will be updated at least annually and distributed to the Division of Prisons and Division of Community Correction.

(a) On-Site Ranges (Revolver, Rifle & Shotgun):

1.	Brown Creek CI	Polkton, NC
2.	Caledonia CI	Tillery, NC
3.	Dan River PWF	Yanceyville, NC
4.	Davidson CC	Lexington, NC
5.	Eastern CI	Maury, NC
6.	Franklin CI	Bunn, NC
7.	Harnett CI	Lillington, NC
8.	Johnston CI	Smithfield, NC
9.	McCain CH	McCain, NC
10.	Morrison CI	Hoffman, NC
11.	Odom CI	Jackson, NC
12.	Pender CI	Burgaw, NC
13.	Piedmont CI	Salisbury, NC

(b) Off-Site Ranges (Revolver, Rifle & Shotgun):

1.	Ahoskie Police Dept.	Ahoskie, NC	
2.	Beaufort County Law Enforcement	Washington, NC	
3.	Bladen County Law Enforcement	Elizabethtown, NC	
4.	Burke County Sheriff's Dept.	Morganton, NC	
5.	Crossnore Training Academy	Crossnore, NC	
6.	Currituck County Sheriff's Dept.	Maple, NC	
7.	Dare County Gun Club	Manns Harbor-Dare County	
8.	Duplin County Law Enforcement	Kenansville, NC	
9.	Eden Police Dept.	Eden, NC	
10.	Elizabeth City Police Dept.	Elizabeth City, NC	
11.	Gastonia Police Dept.	Gastonia, NC	Note 1
12.	Lenoir Police Dept.	Lenoir, NC	
13.	Madison County Sheriff's Dept.	Madison County	
14.	Marion Police Dept.	Marion, NC	

15.	Mayland Comm. College	Spruce Pine, NC	Note 2
16.	McDowell County Law Enforcement	Marion, NC	
17.	Montgomery Tech	Troy, NC	
18.	Mount Airy Police Dept.	Mount Airy, NC	
19.	Randolph Comm. College	Asheboro, NC	Note 3
20.	Rocky Mount Police Dept.	Rocky Mount, NC	
21.	Shelby Police Dept.	Shelby, NC	
22.	Southeastern Comm. College	Brunswick, NC	
23.	Umstead National Guard	Butner, NC	
24.	Wilkes County Law Enforcement	Wilkesboro, NC	
25.	Wilson Police Dept.	Wilson, NC	

Note 1: Gastonia Police Dept. Post and Cable Range Only

Note 2: Mayland Community College: Coordinate through Criminal Justice Training Section.

Note 3: Randolph Community College: Range 1 approved for rifle only; Range 2 approved for revolver, rifle and shot gun.

(c) Off-Site Ranges (Revolver Only):

1.	Apex Police Dept.	Apex, NC	
2.	Asheboro Police Dept.	Asheboro, NC	
3.	Burlington Police Dept.	Burlington, NC	
4.	Cary Police Dept.	Cary, NC	Note 4
5.	Craven County Law Enforcement	New Bern, NC	
6.	Fayetteville Police Dept.	Fayetteville, NC	Note 5
7.	High Point Police Dept.	High Point, NC	
8.	Jacksonville Police Dept.	Jacksonville, NC	
9.	NC Justice Academy	Salemburg, NC	
10.	Perquimans County Sheriff's Dept.	Hertford, NC	
11.	Randolph Community College	Asheboro, NC	Note 6
12.	Robeson Community College	Lumberton, NC	
13.	Wilmington Police Dept.	Wilmington, NC	

Note 4: Cary Police Dept.: Restricted to In-Service or Specialty Training. No Basic Trainees Allowed.

Note 5: Fayetteville Police Dept.: Qualification & Shoot-Don't Shoot Ranges

Note 6: Randolph Community College: Range 3 approved for revolvers only.

**NORTH CAROLINA DEPARTMENT OF CORRECTION
SAFETY AND ENVIRONMENTAL HEALTH
MONTHLY FIRING RANGE INSPECTION**

Facility _____ Contact _____

Inspector _____ Date _____

		Meets Standard	Does Not Meet Standard	Comments
	Use of a DOC range must be approved by the Superintendent or his/her designees.			
Mandatory:				
1	Berm made of dirt and free of debris that may cause ricochet. Pieces per sf _____ (≤ 150)			
2	Berm seeded with grass or some type of vegetation to prevent erosion. Grass ≥ 4 " high.			
3	There is a minimum of 6 ft. space per lane; maximum 12 lanes.			
4	Target holder is nylon rope minimum 1/2 inch in diameter; (steel) cable for target holder acceptable until such time replacement is required)			
5	Firing points (3, 7, 15, 25, and 50-yard lines) marked with lime or other appropriate marking substance.			
6	Ground cover free of debris that could cause a ricochet.			
7	Removable barricades available at the 25 yard line.			
8	Range control gate kept locked except when the range is in use.			
9	Safety Office contacted prior to any renovation.			
10	Inmates are not allowed on the range at any time for any reason.			
11	Flag pole on site and easily seen on approach to range.			
12	Perimeter warning signs, 12 inches by 18 inches displaying red letters on white background with legend "Danger - Firing Range" are posted.			
13	Inspect & stock first-aid kit on site.			
14	Inspect fire extinguisher on site.			
15	Means of communication (telephone, two-way radio, walkie-talkie, etc.) on site when range is in use.			
16	Recreational firing is prohibited.			
17	Personal weapons are not allowed on the firing range. Cell phones not allowed on firing line.			
18	Safety rules posted at range.			

19	Range is equipped with adequate tables and seating.			
20	Range equipped with adjustable rifle/shotgun safety devices to prevent accidental firing over berm (elevation trajectory). (This does not apply to ranges approved for revolver use only, and has been waived for Caledonia CI and Odom CI ranges)			
21	Clean & stocked restroom facilities available on or in close proximity to range.			
22	Superintendent or his/her designee approves all uses of range and maintains a schedule for range use.			
23	Probe berm at 2-ft intervals behind targets and randomly elsewhere.			
Essential:				
1	Minimum height of berm is 20 feet with ≥ 45 degree impact angle.			
2	Spurs at least 20 feet high, and 15 feet in length and sloped at least 45 degrees.			
3	Range has a storage facility for supplies. Temporary buildings are anchored.			
4	Range is equipped with an adequate public address system.			
5	Range has a platform of 22 feet maximum height constructed 10 feet beyond the 50 yard line marker in the center of the range to simulate tower firing.			
6	A weapons safety device (elevation trajectory) is installed on platform.			
7	All used targets and backers removed when finished shooting. Return cardboard and other supplies to designated areas.			
8	When training is complete, area is cleaned before leaving the range. This includes spent cartridge casings.			
Additional Comments:				
Reviewed & Signed by:				
	Superintendent:			
	Date:			
Retention:				
	Maintain at facility for 2 years.			

Firing Range Shooting Log for 20__

	Insert number of shots fired each day																															
Month/Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
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