

PRECISION MARKSMAN II



INTERNATIONAL

TRAINING

DIVISION

HECKLER & KOCH, INC.

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2000

PRECISION MARKSMAN II

- DAY ONE**
- Administration and Introduction
 - Individual Camouflage
 - Range Procedures
 - Zero Weapons - Optics
 - Clean Weapons
 - Debrief
- DAY TWO**
- Stationary Targets
 - Glass Shooting
 - Lunch
 - Practical Applications of Glass
 - Debrief
 - Introduction - Mantracking
 - Advance Mantracking
 - Debrief
- DAY THREE**
- Practical Applications of Mantracking
 - Stalking on the Move/Occupation and Selection of Positions
 - Hide Construction
 - Lunch
 - Hide Overview
 - Night Vision
- DAY FOUR**
- Field Sketch/Log Book
 - Practical Applications
 - Collecting Rep Information
 - Range Acquisitions
 - Lunch
 - Range Estimation Exercise
 - Stalking/Movement Exercise
 - Sketch 1526
 - Debrief
- DAY FIVE**
- Unknown Distance
 - Concealment- Observe movement
 - Chantilly Range
 - Brief/ITT Mission
 - Dinner
 - Call Out
- DAY SIX**
- Final Shoot
 - Final Test
 - Clean up
 - Preparation
 - Graduation

TRAINING SAFETY RULES

A. Rendering the Weapon Safe

1. Always Point Weapon in a Safe Direction - MUZZLE AWARENESS
2. SAFETY ON (S/white) If Applicable
3. Magazine Removed
4. Bolt, Slide, or Cocking Lever Locked to the Rear
5. Visually and Physically Inspect the Chamber

B. FIREARMS SAFETY/MAIN SAFETY RULES

1. Treat Every Firearm as if it Were Loaded
2. Never Point a Firearm at Anything or Anybody that You Do Not Intend to Shoot, or in a Direction Where an Unintentional Discharge May Do Harm.
3. Never Place Your Finger into the Trigger Guard until Ready to Fire
4. Be Sure of Your Target, Backstop, and Beyond

C. GENERAL TRAINING SAFETY RULES

1. Wrap Around Eye Protection is MANDATORY
2. Ear Protection is MANDATORY
3. Hats (Baseball Style) is MANDATORY
4. Long Sleeve Shirt is Recommended
5. We are Responsible for Each Others Safety - Anyone Seeing a Safety Problem Must Report it Immediately to an Instructor. Additionally, Anyone May Stop an Exercise if They See a Safety Problem
6. Report Any and All Injuries Immediately to an Instructor - Don't Suffer in Silence
7. It is Each Participants Responsibility to Cover All Open Wounds and Cuts Before Class Begins. If this Type of Injury Occurs During the Training Session, the Participant Will Immediately Notify an Instructor, Attend to the Injury; and Cover with First Aid Materials Available which Consists of Band-Aids, Gauze Pads & Tape, Alcohol and/or Disinfectant Wipes. Treat All Blood and Body Fluids with the Utmost Caution. Gloves Will be Used if there is any Possibility of Coming into Contact with Blood or Body Fluids
8. AT NO TIME is any Participant Allowed to Leave the Training Area without the Permission of the Primary Instructor.
9. Remember to Work at Your Own Pace - Don't Over Exert Yourself
10. Realistic Training is Important, However Safety Comes First!
11. Do not Enter Any Unauthorized Areas

D. SIMULATIONS/SIMUNITIONS

1. Mouth guards Will be Used, as Needed, for Simulation Training
2. No Live Ammunition Will be Loaded or Carried During Simulation Training Exercises (Double Checked by Participants & Instructors)
3. When Using Blank or Marking Cartridges, or Distraction Devices, You may Only Use Those that are Issued and You Must Double Check Them to Insure they are Intact.
4. Issued Protective Gear e.g. Face shields, Padding, etc. Must be worn properly and at all times during Simulation/Simuniton training until directed otherwise by the Instructor.
5. When using Simuniton rounds, **No Intentional** Groin or head shots will be allowed and shots within two feet of a roleplayer are not allowed.
6. Students will **immediately** cease activities when a sharp sustained blast of a whistle, and/or an instructor yelling "stop" is announced.
7. Students will immediately cease actions upon a roleplayer announcing "Stop" "Out of Role"!

E. SHOOTING HOUSE SAFETY RULES

1. Authorized Firearms Instructors Must be Present During Use
2. **BODY ARMOR** Must be Worn by Everyone who Enters the House
3. Prior to Live Fire Exercises, **Rooms Will be Checked** to Insure that No Personnel are Present
4. Firearms Instructors Will Insure Targets are Placed so that when Engaged, Rounds will Not Exit the House
5. Pistol Caliber Ammunition Shall Only be Used (Approved List)
6. No Steel Targets Allowed
7. Instructors Must Review All Targets and Angles of Deflection Before Beginning Live Fire
8. All Damage Must be Repaired, Replaced and Reported
9. During Multiple Use, Doors Must be Double Locked
10. Rotating Light Must be On During Use
11. Fire Extinguishers Must be Present During Use
12. Building Must be Checked for Damage and Fires, then Secured After Use

F. FIREARMS SHALL NOT BE HANDLED BY PERSONS WITH A BLOOD ALCOHOL CONTENT IN EXCESS OF .00% BY WEIGHT OR UNDER THE INFLUENCE OF DRUGS OR MEDICATION THAT WOULD IMPAIR THEIR MOTOR SKILLS, JUDGEMENT OR BALANCE.

TECHNIQUES OF CAMOUFLAGE

A. TARGET INDICATORS

- 1. Sound**
- 2. Movement**
- 3. Improper Camouflage**
 - a. Shine**
- 4. Outline**
- 5. Contrast with Background**

B. PERSONAL CAMOUFLAGE

- 1. Types of Personal Camouflage**
- 2. Advantages/Disadvantages**
- 3. Uses for personal Camouflage**

C. CLOTHING AND GEAR CAMOUFLAGE

- 1. History of the Ghillie Suit**

- 2. Ghillie Suit**

- 3. Field Expedient Ghillie**

- 4. Camouflaging Gear**
 - a. Rifle
 - b. Optical Gear
 - c. Packs and Web Gear

D. CAMOUFLAGING FOR SPECIFIC GEOGRAPHIC AREAS

- 1. Snow**

- 2. Desert/Urban**

- 3. Jungle/Woodland**

E. CAMOUFLAGE DURING MOVEMENT

- 1. Hiding**

- 2. Blending**

- 3. Deceiving**

GLASS SHOOTING

INTRODUCTION

Many tests have been performed on glass shooting. It is not an exact science, and although many trends have been found, the only thing guaranteed is that there is no guarantees.

A. TYPES OF GLASS

1. Window Pane
2. Safety Glass
3. Wire Reinforced
4. Tempered Glass
5. Structural Glass
6. Auto Glass
7. Airplane Glass
8. Bullet Proof Glass
9. Thermal Glass

B. BULLET WEIGHT AND VELOCITY

C. BULLET COMPOSITION

1. Full Metal Jacket
2. Lead Tip Bullet

D. SECONDARY FRAGMENTATION

- 1. Perpendicular**
- 2. Angle**
- 3. Bullet Fragmentation**

E. MISCELLANEOUS INFORMATION

- 1. Screens**
- 2. Simultaneous Shots**
 - a. Plate Glass
 - b. Laminated
 - c. Weakening Glass

- 1. Angles**
- 2. Weight**
- 3. Temperature**

INTRODUCTION TO MANTRACKING

A. TRACKERS

B. TERMINOLOGY

C. TRACKING ART

D. TRACKER TRAITS AND QUALITIES

E. SIGN

1. Definition

2. Characteristics

3. Categories

TRACKING

A. LEARNIING TO TRACK

1. Light Conditions
2. Persistence
3. Sign Cut Stick

B. READING TRACKS AND SIGNS

C. METHODS OF READING SIGN

1. Stop
2. Look
3. Listen
4. Smell
5. Remember
6. Plan

D. FACTORS EFFECTING TRACKING

1. Fatigue

2. Topography

a.

b.

c.

3. Vegetation

a. Thick

b. Sparse

c. Time of Day

d. Visual Limitations

e. Do's and Don'ts

ADVANCED MANTRACKING

A. VISUAL SIGNS

- 1. Dew**
- 2. Grass**
 - a. Green Grass
 - b. Brown Grass
- 3. Dirt**
- 4. Mud**
- 5. Rocks**
- 6. Bushes**
- 7. Leaf Covered Areas**
- 8. Obstacles**
- 9. Streams**
- 10. Littering**
- 11. Interpretation/Immediate Use of Information**

B. TRACK FOLLOWING DRILL

TRACKING INTELLIGENCE

A. AGING THE SIGN

B. DETERMINING GROUP SIZE

1. 36-Inch Box Method

C. DETERMINING SEX

D. DETERMINING CONDITION OF PERSON BEING TRACKED

E. DETERMINE LOADS AND WEAPONS

F. DETERMINING SPEED OF MOVEMENT

TRACK DECEPTION

- A. DEFINITION**
- B. WALKING BACKWARD**
- C. USING/CROSSING ROADS**
- D. MOVING ON HANDS AND KNEES OR ROLLING**
- E. TARZAN SWINGING**
- F. BUSH HOPPING/WALKING**
- G. ROCK WALKING**
- H. PIGGYBACK**
- I. TREE BYPASSING**
- J. BRUSHING OUT OR COVERING TRACKS**
- K. WALKING UP OR DOWN STREAMS**
- L. CHANGING FOOTWEAR**
- M. DETERING THE TRACKER**

STALKING AND INDIVIDUAL MOVEMENT

A. INDIVIDUAL MOVEMENT

1. Preparation For Movement

a.

b.

c.

d.

e.

2. Route Selection

a.

b.

c.

d.

e.

f.

g.

3. Movement

a. Stop

b. Look

c. Listen

4. Plan

B. TYPES OF MOVEMENT

D. STALKING

1. Before the Stalk

2. Steps to be Accomplished During the Stalk

3. Stalking at Night

OCCUPATION AND SELECTION OF POSITIONS

A. SELECTING AND FOLLOWING ROUTES

- 1. Selecting routes**
- 2. Following Routes**

B. FINAL FIRING POSITION

C. HASTY POSITIONS

- 1. Cover**
- 2. Concealment**

D. SELECTING AN FFP

E. POSITION SAFETY

- 1. Safety Precautions in Choosing and Occupying an FFP**

F. ACTIONS IN POSITION

HIDE CONSTRUCTION

DEFINITION: A hide is a sniper's position which he has constructed in a specific location suitable for sniper operations. The hide must provide maximum fields of operations and fire, camouflage and concealment, and protection from hostile fire and weather.

A. LOCATION OF HIDES

1. Rural

2. Urban

B. ELEMENTS OF HIDES

1. Loopholes

2. Elbow Rests

3 Cover

4. Front and Rear Appearance

5. Entrance

C. TYPES OF HIDES

1. Belly Hide

- a. Advantages
- b. Disadvantages
- c. Construction

2. IMPROVED FIRE TRENCH HIDE

- a. Advantages
- b. Disadvantages
- c. Construction

3. SEMI-PERMANENT HIDE

- a. Advantages
- b. Disadvantages
- c. Construction

4. BERM HIDE

- a. Advantages
- b. Disadvantages
- c. Construction

5. ROOM HIDE

- a. Advantages
- b. Disadvantages
- c. Construction

6. CRAWL SPACE HIDE

- a. Advantages
- b. Disadvantages
- c. Construction

7. ROOF HIDE

- a. Advantages
- b. Disadvantages
- c. Construction

D. THE USE OF BUILDINGS AS HIDES

E. IMPROVISED HIDES

- 1. Shell Holes**

- 2. Tree or Stump Hides**

HIDE CONSTRUCTION TECHNIQUES

A. HIDE CONSTRUCTION CONSIDERATIONS

1. **Concealed Approach**
2. **Start with Pit**
3. **Loopholes**
4. **Overhead Cover**
5. **Bulletproof**
6. **Screens**
7. **Comfort**

B. MATERIALS

C. TOOLS

NIGHT VISION/THERMAL IMAGING

OPTICS

Optics can be divided into three general categories: **Magnifiers, Light Intensifiers, and Infrared/Thermal Imagers**

A. MAGNIFIERS

1. Types of Optical Devices

- a. 7X50 Tasco Binoculars
- b. 8X30 Tasco Binoculars
- c. M49 20-Power Scope

B. IMAGE or LIGHT INTENSIFIERS

1. 1st Generation

2. 2nd Generation

3. 3rd Generation

C. TYPES OF IMAGE INTENSIFIERS

1. AN/PVS-2B

- a. A first generation starlight
- b. Weight - 6 pounds
- c. Length - 17.5 inches
- d. Magnification - 4 power
- e. It has been replaced in the U.S. inventory by the AN/PVS -4

- f. Effective range in Moonlight conditions - 300 yards; Starlight - 150 yards

2. Simrad KN200/KN200F Image Intensifiers

- a. Weight - approximately 3 pounds
- b. Length - approx. 8 inches
- c. Magnification - same as existing optics
- d. Field of View - same as existing optics
- e. Powered by AA or C cell Batteries
- f. KN200 F series has a fine tune focus
- g. Target detection (man-sized) under moonlight conditions- 700 meters (F model); starlight -560 meters (F model)

3. AN/PVS-5A

- a. A night vision goggle system which incorporates 2nd generation image intensifiers
- b. Currently used widely by U. S. armed forces
- c. Weight -2.5 pounds
- d. Length - approx. 3.5 inches
- e. Width - approx. 3.5 inches
- f. Magnification - none
- g. Field of View - 40 degrees

4. AN/PVS-5C

- a. Weight - 2.5 lbs.
- b. Magnification - none
- c. Field of View - 40 degrees

5. AN/PVS-7B

- a. Weight - 1.5 lbs.
- b. Magnification - none
- c. Field of View - 40 degrees
- d. Length - 6 inches
- e. Can be AA battery powered or lithium powered. Battery life is approx 40 hours (lithium are optimum)
- f. Has the ability to be turned into a night vision binocular with a 4 objective lens for long range observation purposes.
With the 4 obj. lens, the field of view is reduced to 8.8 degrees

6. AN/AVS-6

- a. Weight - approx 1 lbs.
- b. Length - approx. 3 inches

7. F497 Night Vision Pocket Scope

- a. AA or Lithium Battery
- b. Available with 1X, 2X, and 3X obj. Lens
- c. Weight - approx. 1.5 lbs. (w/3 lens)
- d. Length - 5.5 inches
- e. Height - 3.5 inches
- f. Width - 2 inches

8. F4965 Individual Rifle Sight

- a. Magnification - 3.6 power
- b. Field of View - 8 degrees
- c. Weight - 2.5 lbs.
- d. Length - 10.5 inches
- e. AA battery powered. Battery life - 40 hours
- f. Man-sized target recognition; Moonlight - 2800 m; starlight - 980 m
- g. Automatic on/off switch built into the eye cup so that when the eye guard is pressured, the image intensifier comes on and shuts off when pressure is released.

9. M937XR/M938R High Performance Extended Range Night Weapon Sight

- a. Magnification - 6 power
- b. Field of View - 5.5 degrees
- c. Weight - approx 3 lbs.
- d. Length - approx. 14 inches
- e. AA battery powered. Battery life - 50-60 hours

D. INFRARED

1. Active

- a. Laser Range Finders
- b. Laser Aiming Devices
- c. Laser Designation Systems (MULE)

2. Passive

- a. Passive IR devices operate by amplifying low-level ambient light. They cannot function in total darkness.

E. THERMAL IMAGERS

F. ILLUMINATORS

1. Ambience

2. Artificial light

- a. Sources of Artificial Light

3. Tritium

FIELD SKETCH AND OBSERVATION LOG BOOK

A. THE FIELD SKETCH

1. Definition
2. Types of Sketches
 - a. Military Sketches
 - b. Panoramic Sketches

B. PRINCIPLES OF SKETCHING

1. General Principles
2. Principles of Perspective Drawing
3. Horizon Line
4. Parallel Lines and Vanishing Points
5. Depicting Size and Distance
6. Examples of Perspective Drawing

C. STEPS IN PERSPECTIVE DRAWING

1. Methods of Locating Features

- a. Method 1

- b. Method 2

- c. Method 3

2. Delineation

- a. Creating the Framework
- b. Outlining
- c. Hatching
- d. Using Shade and Shadow

3. The Use of Detail

- a. When to use detail

4. Detail Sketching

- a. Working Quickly

- b. self-criticism

D. EQUIPMENT, SCALE, REFERENCE POINTS, AND MARGINAL DATA

- 1. Compass, Protractor, or Watch**
- 2. Binos, or Observation Scope**
- 3. Eraser**
- 4. Sketch Sheet or Notebook**
- 5. Pencil Sharpener**
- 6. 6-inch Transparent Scale with Straight edge**
- 7. Maps**
- 8. Australian Window**
- 9. Knowledge of Personal Measurements and Measurements of Common Items**

E. SCALE

F. REFERENCE POINT

G. MARGINAL DATA

H. ANNOTATIONS

I. OBSERVATION LOG

1. Definition

2. Purpose

3. Observation Log Information

COLLECTION AND REPORTING OF INFORMATION

A. INTELLIGENCE TERMS

- 1. Information**
- 2. Intelligence**
- 3. Surveillance**
- 4. Reconnaissance**
- 5. Target Acquisition**

B. INTELLIGENCE REQUIREMENTS

- 1. The Two Basic Intelligence Requirements**
 - a. Essential Elements of Information
 - b. Other intelligence Requirements
- 2. Geographical Areas of Intelligence Operations**
- 3. Areas of Influence**
- 4. Area of Interest**
- 5. Immediate Zone**

C. THE COMMON SOURCES OF INFORMATION

D. METHODS OF RECORDING INFORMATION

1. Conventional Recording Methods

- a. Field Sketches
- b. Range Cards
- c. Observation Logs
- d. Patrols Logs
- e. Communication Logs
- f. Photo Logs

E. INTELLIGENCE JOURNAL

1. Back Up

RANGE ACQUISITION AND RANGE CARDS

A. THE RANGE ESTIMATION FORMULA METHOD

1. Mil Scale

2. Mil Relation Formula

$$\frac{\text{Size of target in yards} \times 1000}{\text{Size of target in mils}} = \text{Range in yards}$$

Example #1 - A sniper sees a suspect which he estimates to be 6 feet (2 yards) tall. He measures the target through the scope and determines that it is 4 mils tall. Using the formula :

$$\frac{2 \text{ (hgt target in yards)} \times 1000 \text{ (constant)}}{4 \text{ (hgt target in mils)}} = 500 \text{ yards}$$

Example #2 - A sniper spots a suspect and can only see the suspects head and shoulders. The suspect is near a brick wall, and the sniper knows from prior study that the bricks are 8 feet tall. The sniper then "mils out" three bricks to be 2 mils tall.

$$\frac{.67 \text{ (hgt of target in yards)} \times 1000 \text{ (constant)}}{2 \text{ (hgt target in mils)}} = 335 \text{ yards}$$

- 3. Take the range in meters and add 10%. This method is the easiest but not the most accurate.**
- 4. Another method is to multiply the range in meters by 1.094. This is the most Accurate method and should be used when determining a range for engagement.**
- 5. Disadvantages**

B. ESTIMATING RANGE BY THE EYE

- 1. 100 yard unit of Measurement**
- 2. Appearance of Objects**
- 3. Bracketing**
- 4. Combination of Methods**

C. OTHER METHODS OF RANGE ACQUISITION

- 1. Laser Range Finders**
- 2. Maps**

D. FACTORS EFFECTING RANGE ESTIMATION

- 1. Nature of Target**
- 2. Nature of Terrain**
- 3. Light Conditions**

E. RANGE CARDS

- 1. Definition**

- 2. Prepared Range Cards**

- 3. Field Expedient Range Card**