

TM 00539-13/1

U. S. MARINE CORPS TECHNICAL MANUAL

OPERATION AND MAINTENANCE

**RIFLE, SNIPER, M40A1
AND
RELATED OPTICAL EQUIPMENT**

NSN 1005-01-035-1674



NOVEMBER 1981

PCN 184 004900 00

DEPARTMENT OF THE NAVY
Headquarters, U.S. Marine Corps
Washington, D.C. 20380

30 November 1981

1. This Manual is effective upon receipt and provides instructions for the operation and maintenance of the M40A1 Sniper Rifle and related optical equipment, the Unertl Sniper Scope.
2. Notice of discrepancies and suggested changes should be forwarded on NAVMC 10772 to the Commandant of the Marine Corps (LMA-1).

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

OFFICIAL:



L. CHAKER
Head, Materiel Acquisition Support Branch
Materiel Division
Installations and Logistics Department

DISTRIBUTION: AA/BN

Copy to: 7000161(3)

1/(2 blank)

TABLE OF CONTENTS

CHAPTER 1. INTRODUCTION AND GENERAL INFORMATION

<u>Par</u>		<u>Page</u>
1-1.	Description and Related Data.....	1-1
1-3.	Authorized Forms.....	1-2
1-3a.	NAVMC 1018.....	1-2
1-3b.	NAVMC 11003.....	1-2
1-3c.	NAVMC 10558A.....	1-2
1-4.	Issue and Recovery of Individual Rifles.....	1-3

CHAPTER 2. OPERATION

Section I. M40A1 Sniper Rifle..... 2-1

<u>Par</u>		
2-1.	Introduction.....	2-1
2-2.	Inspection Upon Receipt.....	2-1
2-3.	Operating Controls.....	2-1
2-3a.	Safety.....	2-1
2-3b.	Magazine Release.....	2-1
2-3c.	Bolt Handle.....	2-3
2-3d.	Trigger.....	2-3
2-4.	Loading and Unloading the Rifle.....	2-3

Section II. The Unertl Sniper Scope..... 2-6

<u>Par</u>		
2-5.	Introduction.....	2-6
2-6.	Related Tabulated Data.....	2-6
2-7.	Adjustments.....	2-6
2-7a.	Scope Focus.....	2-6
2-7b.	Focusing the Eyepiece.....	2-10
2-7c.	Parallax.....	2-10
2-7d.	Eye Relief.....	2-12
2-7e.	Reticle.....	2-12
2-8.	Zeroing.....	2-12
2-8c.	Zeroing the Scope.....	2-12
2-9.	Field Expedient Zeroing.....	2-14
2-9a.	900-Inch Method.....	2-14
2-9b.	Unknown-Distance Zeroing.....	2-18

CHAPTER 3. OPERATIONAL AND ORGANIZATIONAL MAINTENANCE

Section I. The M40A1 Rifle..... 3-1

<u>Par</u>		
3-1.	Introduction.....	3-1

TABLE OF CONTENTS (Continued)

CHAPTER 3. OPERATIONAL AND ORGANIZATIONAL MAINTENANCE

Par

3-2.	Allocation of Maintenance Tasks.....	3-1
3-3.	M40A1 Rifle Maintenance.....	3-2
3-3a.	Inspection.....	3-2
3-3b.	Cleaning.....	3-2
3-3c.	Repair.....	3-7
3-4.	Care of Optical Equipment.....	3-8
3-4a.	Cleaning the Scope Lens.....	3-8
3-4b.	Operation in Cold Climate.....	3-8
3-4c.	Operation in Hot, Humid Climate and Salt Water Atmosphere.....	3-11
3-4d.	Handling Telescope.....	3-11
3-4e.	Field Maintenance.....	3-11

CHAPTER 4. AMMUNITION

4-1.	General.....	4-1
4-2.	Care and Handling.....	4-1

LIST OF ILLUSTRATIONS

CHAPTER 1

<u>Figure</u>	<u>Page</u>
1-1 Right Side View M40A1.....	1-1
1-2 Left Side View M40A1.....	1-2
1-3 NAVMC 10558A	1-3
1-4 NAVMC 10558A	1-4
1-5 NAVMC 10558A (Page 2).....	1-5
1-6 NAVMC 10558A (Page 60).....	1-6

CHAPTER 2

2-1. M40A1 Operating Controls.....	2-2
2-2. M40A1 Releasing Magazine Floorplate.....	2-2
2-3. Placing Cartridge into Action.....	2-4
2-4. Inserting Cartridge in Magazine.....	2-4
2-5. Emptying the Magazine.....	2-5
2-6. Unertl Sniper Scope, Left Side.....	2-7
2-7. Unertl Sniper Scope, Right Side.....	2-8
2-8. Loosening Focus Lock Ring.....	2-9
2-9. Focusing Eyepiece.....	2-9
2-10. Using Spanner Wrench on Objective Focus Lock Ring.....	2-11
2-11. Loosening Objective Focus Lock Ring.....	2-11
2-12. Crosshairs on Telescope.....	2-13
2-13. Making Internal Elevation Adjustment.....	2-15
2-14. Lock/Unlock Elevation Set Screw.....	2-16
2-15. 900-Inch Zeroing Target.....	2-17

CHAPTER 3

3-1. Removing the Bolt.....	3-6
3-2. Cleaning Chamber with .45 Caliber Brush.....	3-6
3-3. Rifle, Scope, Case, and Ammunition.....	3-9
3-4. Cleaning Objective Lens with Brush.....	3-9
3-5. Cleaning Objective Lens with Lens Paper.....	3-10

CHAPTER 1

INTRODUCTION AND GENERAL INFORMATION

1-1. DESCRIPTION AND RELATED DATA. The M40A1 Sniper Rifle is a bolt action, magazine-fed, shoulder weapon with the following characteristics:

- | | |
|----------------------------|------------------------------|
| a. Overall length | 44 inches |
| b. Caliber | 7.62 NATO |
| c. Muzzle velocity | 2550 feet per second |
| d. Maximum effective range | 1,000 yards |
| e. Chamber pressure | 50,000 psi |
| f. Magazine capacity | 5 rounds |
| g. Weight complete | 14 1/2 pounds (approximate) |
| h. Telescope | 10 power |
| i. Weight of telescope | 2 pounds (approximate) |
| j. Barrel twist | 1 turn in 12 RH |
| k. Stock | fiberglass with epoxy filler |
| l. Barrel length | 24 inches |

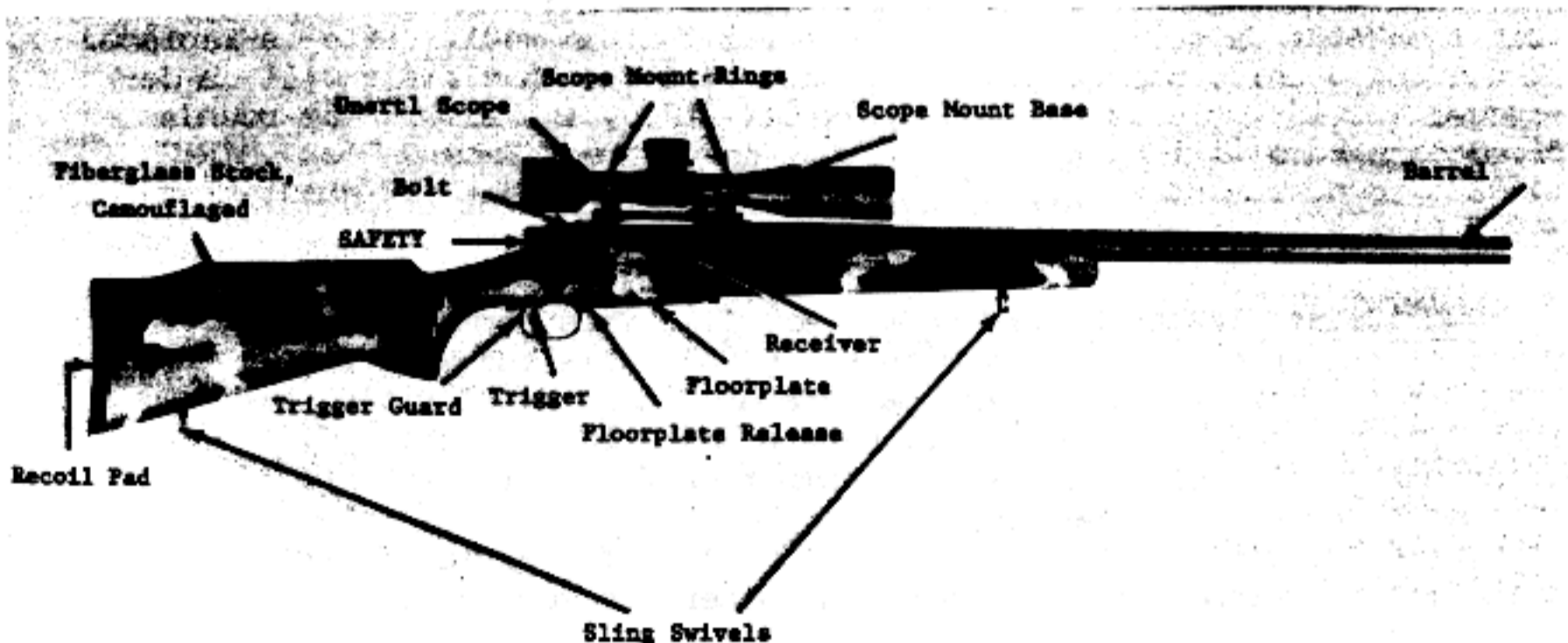


Figure 1-1. Right Side View M40A1 (external parts labeled).

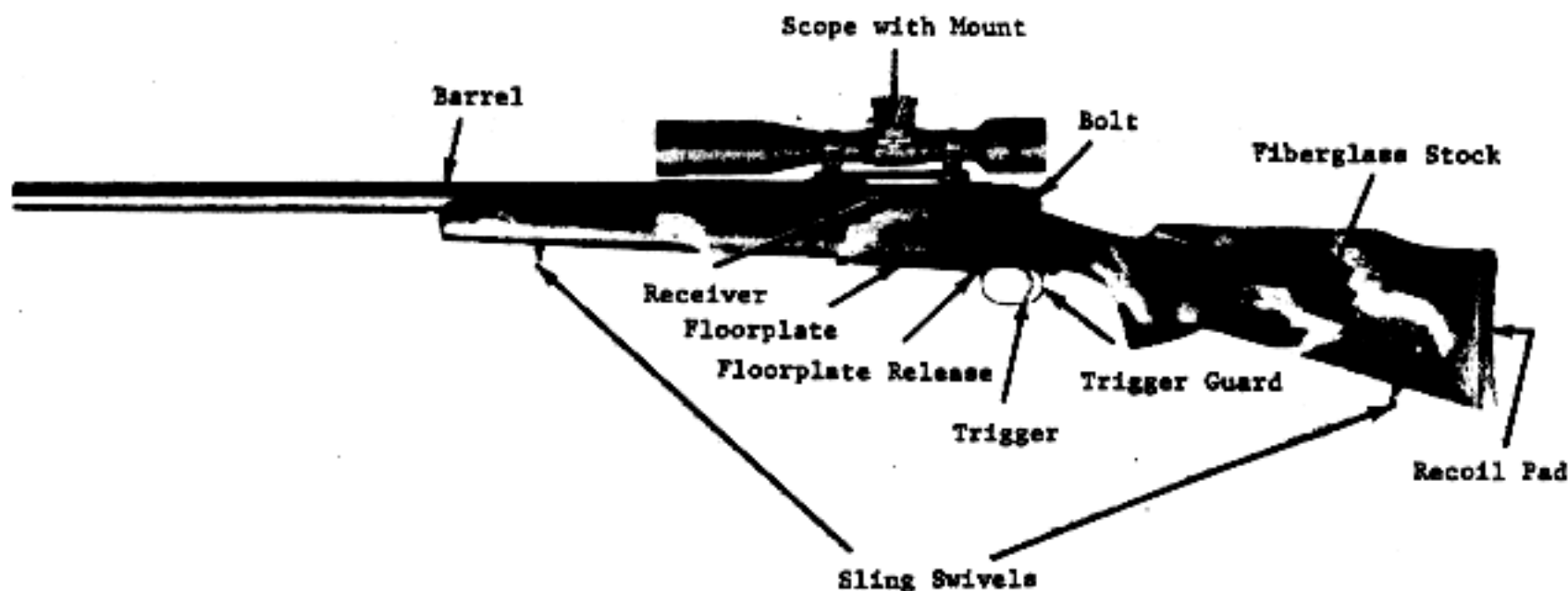


Figure 1-2. Left Side View M40A1 (external parts labeled).

1-2. FORMS AND RECORDS. Responsibility for the proper execution of forms and records for the M40A1 Sniper Rifle rests with the using unit. In order to ensure that accurate records are maintained, it is imperative that the instructions contained in this chapter be followed.

1-3. AUTHORIZED FORMS

a. NAVMC 1018, Inspection Tag. This form will be attached to each M40A1 Sniper Rifle that is evacuated to a higher echelon for repair. The instructions for completing this form are contained in TM-4700-15/1.

b. NAVMC 11003, Ordnance Serialized Item Rounds Fired Data Card. This form will be maintained at the using unit level and will not be evacuated with the M40A1 Sniper Rifle. In the event that an M40A1 rifle is replaced at the using unit, the rounds fired data card for that rifle will be destroyed. Prior to evacuation of an M40A1 rifle, entries on the rounds fired data card will be checked against the Weapons Record Book, NAVMC 10558A, to ensure that all entries agree. Instructions for completing NAVMC Form 11003 are contained in TM-4700-15/1.

c. NAVMC 10558A, Weapon Record Book, Part II. This form is the most important of the three forms used with the M40A1 rifle and will be utilized as set forth in the following paragraphs. Each M40A1 rifle, when received from the supply system, will have a NAVMC 10558A attached. Receiving units will verify the serial number on the rifle with the serial number recorded on the front of the Weapon Record Book to ensure that they are identical. The NAVMC 10558A will be filled out in the following manner, without reference to any other publications.

(1) Front cover. This page will be filled out when the rifle is received at the using unit. No further entries will be made on it. See figure 1-3.

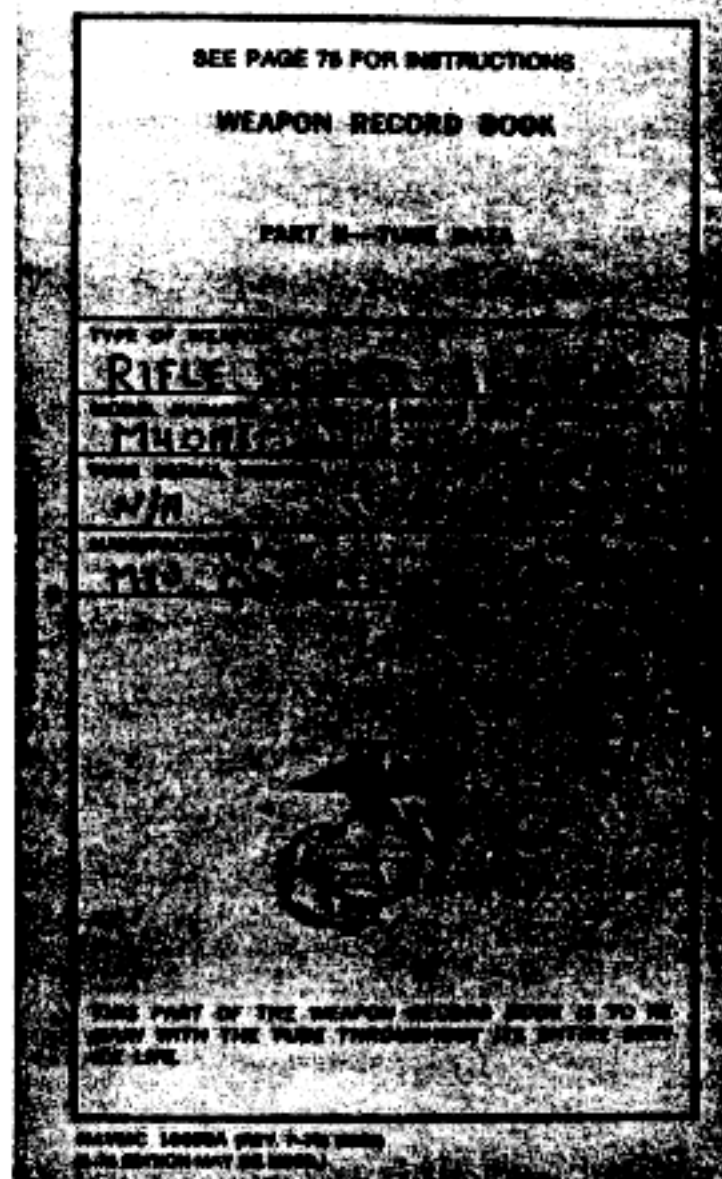


Figure 1-3. NAVMC 10558A, Weapon Record Book, Part II.

(2) Page 1. The only entries required on page 1 are the identification of type of weapon, telescope serial number, and rebuild information. No other entries will be made. See figure 1-4.

(3) Page 2. Entries will be made as shown in figure 1-5.

(4) Pages 50 through 59, Pullover Gage Inspection Record. These pages will be left blank. DO NOT USE.

(5) Page 60, Bore Inspection Record. (The expected barrel life is 10,000 rounds.) This record will contain all the maintenance data performed by third echelon and higher, e.g., torque screw setting in inch-lbs. Note: This entry will be in the weapon record book when initially received. Other entries are shown in figure 1-6.

1-4. ISSUE AND RECOVERY OF INDIVIDUAL RIFLES. Individual rifles will be issued and recovered in the same manner as other individual weapons. NAVMC 10576, Memorandum Receipt for Individual Weapons and Accessories, will be used as the issue document. NAVMC 10520, Weapons Custody Receipt Card, will be used when the rifle is drawn from the armory for use. Detailed instructions for using these forms are contained in MCO 4400.15.