GERMAN 7.9-MM DUAL PURPOSE MACHINE GUN MG34

10. UNLOADING THE MACHINE GUN.

a. Removal of Belt. Cock the gun and set the safety at SAFE (fig. 31). Push the feed cover catch forward and raise the feed cover (fig. 18). Lift out the belt. See that there is no round in the barrel. Set the safety at FIRE. Grasp the cocking handle and pull the trigger, allowing the bolt to go slowly home.

b. Removal of 50-round Belt Drum Magazine. Cock the gun and set the safety at SAFE (fig. 31). Push the feed cover catch forward and raise the feed cover (fig. 18). Lift out the belt and disconnect the magazine from the gun. See that there is no round in the barrel. Set the safety at FIRE. Grasp the cocking handle and pull the trigger, allowing the bolt to go slowly home.

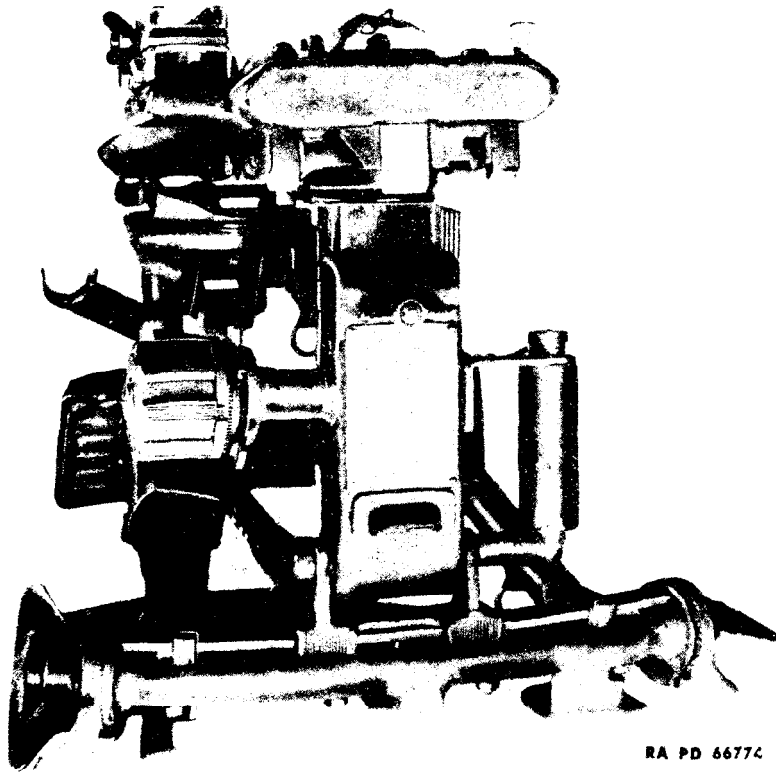


Figure 36 — Overhead Firing Table and Table of Minimum Clearance — Ranges in Meters

OVERHEAD FIRING TABLE

DISTANCE TO OWN TROOPS	SAFETY	
	DIVISIONS	SIGHT
55 YARDS	61	2250 YARDS
80	49	2030
110	39	1800
140	35	1730
165	31	1550
190	29	1500
220	27	1450
250	23	1350
280	23	1350
330	20	1250
440	20	1250
550	20	1250
660	22	1300
770	23	1350
880	27	1450
990	29	1500
1100	21	1550
1200	35	1730
1300	37	1750
1400	41	1860
1500	44	1920
1670	49	2030
1750	55	2130
1860	60	

DISTANCE TO OWN TROOPS	SAFETY	
	DIVISIONS	SIGHT
1970 YARDS	66	
2080	73	
2190	81	
2300	90	
2400	99	
2520	109	
2620	119	
2730	131	
2840	143	
2950	156	
3060	170	
3170	184	
3280	199	
3390	215	

TABLE OF MINIMUM CLEARANCE

TARGET	DEPTH	DOUBLE DEPTH
1300 YARDS	1	2
2190	2	4
2840	3	6
3280	4	8
3600	5	10

RA PD 84325

Figure 37 — Overhead Firing Table and Table of Minimum Clearance — Ranges in Yards

GERMAN 7.9-MM DUAL PURPOSE MACHINE GUN MG34

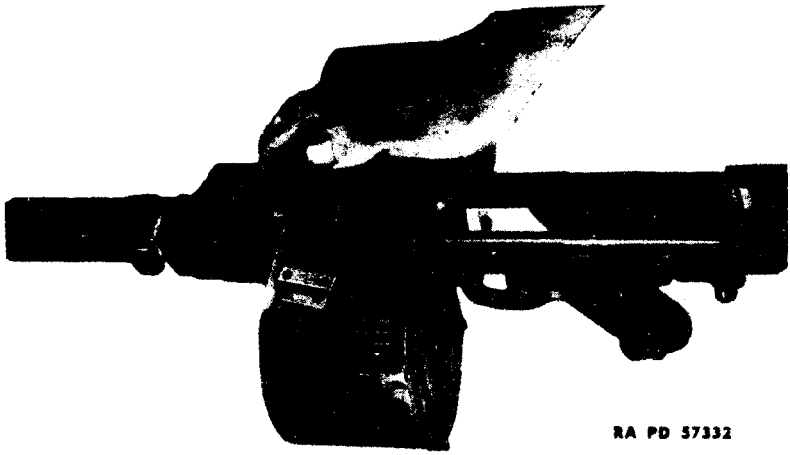


Figure 38 — Removal of 75-round Magazine

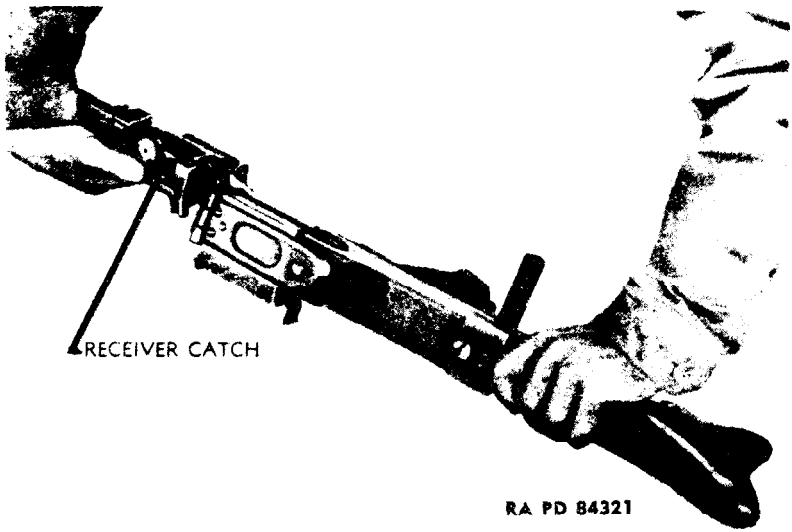


Figure 39 — Unlocking and Rotating Receiver

c. **Removal of 75-round Spring-operated Drum Magazine.** Cock the gun and set the safety at SAFE (fig. 31). Place the right hand under the strap on the magazine, and remove the magazine by pressing the hand against the strap and pushing with the fingers against the latch on top of the magazine (fig. 38).

Figure 40 — Sliding Barrel out of Barrel Casing

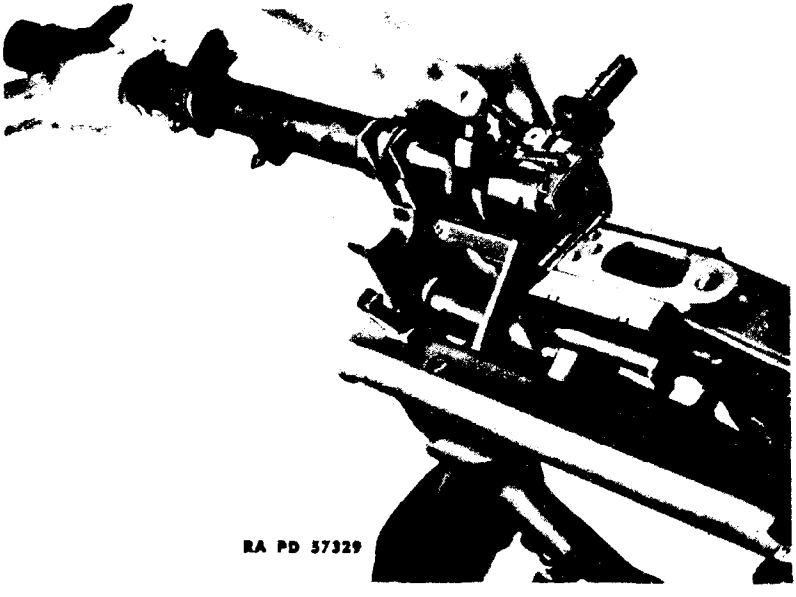
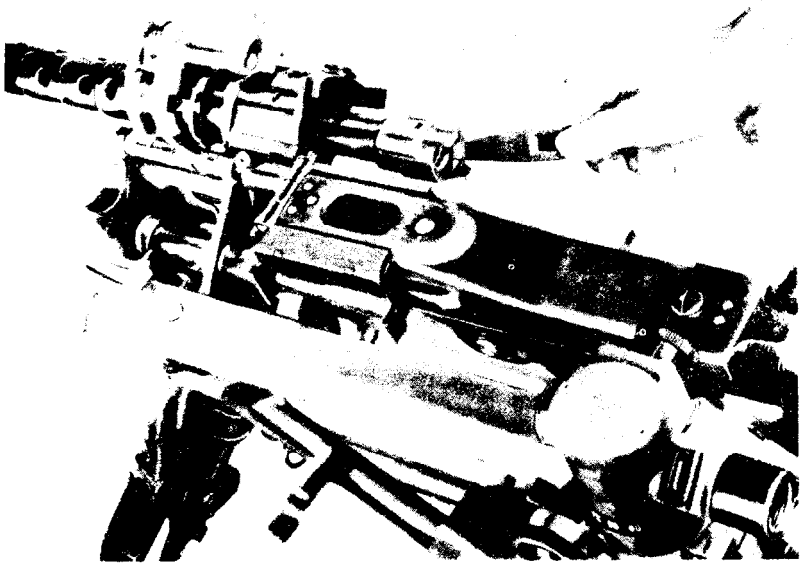


Figure 41 — Unlocking of Receiver Catch and Rotating Barrel Casing

11. CHANGING BARRELS.

a. General. The barrel must be changed after about 250 rounds have been fired continuously or with only short intervals between bursts.

GERMAN 7.9-MM DUAL PURPOSE MACHINE GUN MG34



RA PD 57328

Figure 42 — Removing a Hot Barrel

b. Changing Barrels When Machine Gun Is Mounted on the Bipod, Antiaircraft Tripod, or Tripod Mount AA Adapter.

(1) Unload the gun (par. 10). Cock the gun and set the safety at SAFE. Depress the receiver catch and rotate the receiver nearly 180 degrees (fig. 39).

(2) Raise the muzzle end of the gun to allow the barrel to slide out (fig. 40). Insert a fresh barrel and rotate the receiver until the receiver catch snaps into position. Set safety at FIRE. Grasp the cocking handle and pull the trigger, allowing the bolt to move slowly home.

c. Changing Barrels When Machine Gun Is Mounted on Tripod Mount.

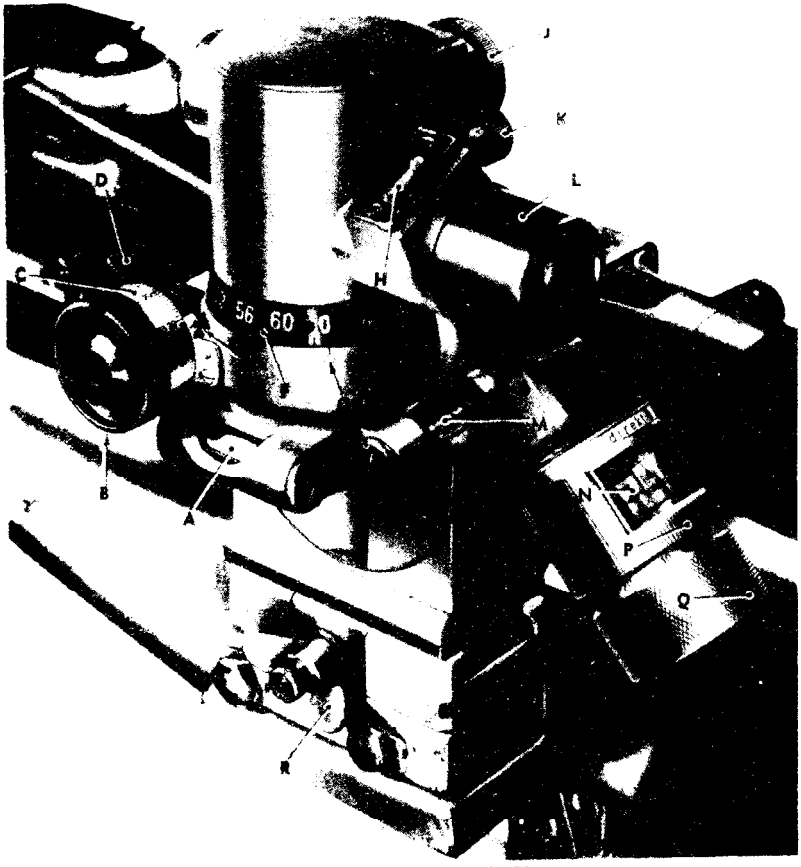
(1) Unload the gun (par. 10). Cock the gun and set the safety at SAFE. Depress the receiver catch by means of the cranked lever, and rotate the barrel casing nearly 180 degrees (fig. 41).

(2) Remove the hot barrel with the leading tab or any other convenient tool (fig. 42). Insert a fresh barrel and rotate the barrel casing until the receiver catch snaps into position. Set safety at FIRE. Grasp the cocking handle and pull trigger, allowing bolt to move slowly home.

Section III
SIGHTING EQUIPMENT

12. TELESCOPIC SIGHT FOR THE GERMAN 7.9-MM DUAL PURPOSE MACHINE GUN MG34.

a. The telescopic sight (figs. 43 to 45) is used for aiming the machine gun in either direct or indirect fire.



A — LONGITUDINAL LEVEL
B — AZIMUTH KNOB
C — AZIMUTH MICROMETER
D — THROWOUT LEVER
E — MICROMETER INDEX
F — AZIMUTH SCALE
G — SCALE INDEX
H — LIGHT WINDOW
J — COLLIMATOR
K — COLLIMATOR CLAMPING SCREW
L — EYEPIECE
M — CROSS LEVEL
N — ELEVATION DRUM (DIRECT FIRE)
P — SHUTTER
Q — ELEVATING KNOB
R — WING NUT

RA PD 57062

Figure 43 — Telescopic Sight Assembled on German 7.9-mm Dual Purpose Machine Gun MG34

GERMAN 7.9-MM DUAL PURPOSE MACHINE GUN MG34

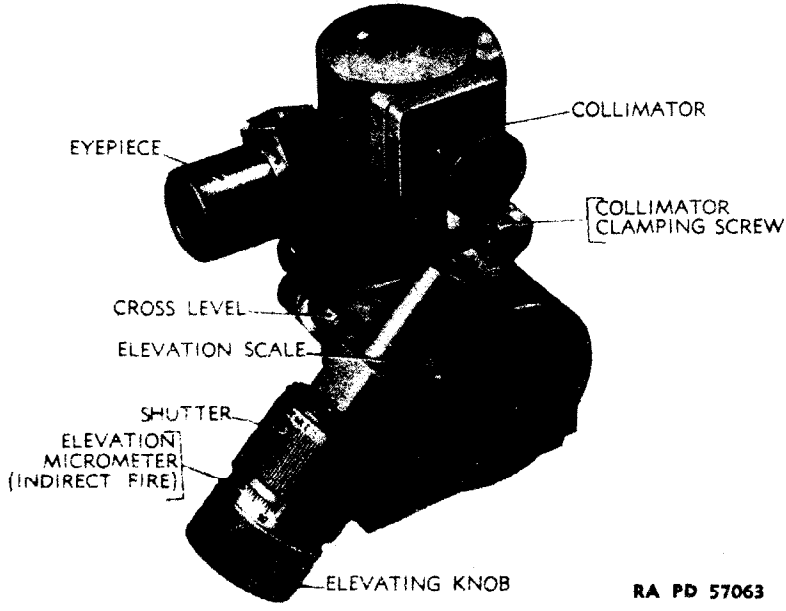


Figure 44 — Telescopic Sight for German 7.9-mm Dual Purpose Machine Gun MG34 — Rear View

b. The sight consists essentially of a telescope which can be moved in azimuth and elevation in relation to the machine gun. The telescope has a 3-power magnification and a field of view of 13 degrees 30 minutes. A graduated reticle pattern is seen superimposed on the target image when looking through the eyepiece. The light window near the eyepiece admits light for reticle illumination when the sight is used at night. A removable eyeshield (not shown in the figures) fits over the eyepiece; the eyeshield is removed to permit sighting while wearing a gas mask.

c. The telescope is moved in azimuth (traversed) by turning the azimuth knob. For rapid motion through large azimuth angles, the telescope can be turned directly by holding the throw-out lever down. Azimuth angles from 0 to 6400 mils are read on the azimuth scale (coarse, 100-mil divisions) and azimuth micrometer (fine, 1-mil divisions). The azimuth micrometer has two rows of graduations. The inner row only is used for reading azimuth angles in indirect fire; either row is used in setting in small deflection angles for direct fire.

d. The telescope is moved in elevation by turning the elevating knob. Elevation can be read either in meters for direct fire, or in

mils for indirect fire. When the shutter (figs. 43 and 44) is set to "DIREKT" (direct), the elevation drum carrying the meter graduations is exposed. When the shutter is set to "INDIREKT" (indirect), the elevation drum is covered and an index is brought into position for reading the elevation micrometer. Elevation in mils is read on the elevation scale (coarse, 100-mil divisions) and elevation micrometer (fine, 1-mil divisions). The 300-mil setting corresponds to zero elevation. The elevation scale graduations read from 0 to 10 (0 to 1000 mils) for actual elevations of from minus 300 to plus 700 mils.

e. The collimator traverses with the telescope, but can be elevated or depressed independently of the telescope. When sighting into the collimator, a cross is seen which remains stationary as though it were at an infinite distance. Aiming is accomplished by lining this cross up with the target. The principal use of the collimator is to establish a safety point of minimum elevation for firing over a crest, or over the heads of friendly troops.

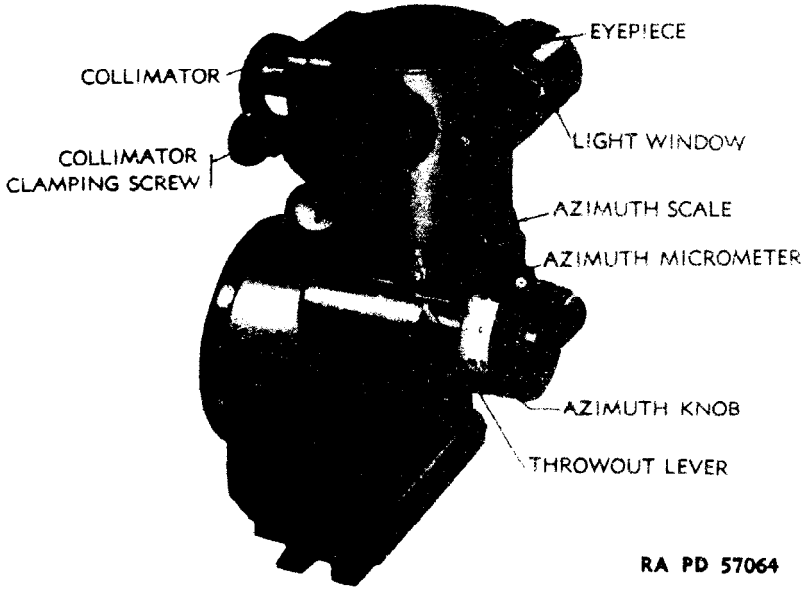


Figure 45 — Telescopic Sight for German 7.9-mm Dual Purpose Machine Gun MG34 — Front View

f. **Operation, Direct Fire.**

(1) Turn the shutter to "DIREKT" (fig. 43), exposing the elevation drum. Set the required elevation for range, in meters, on the

elevation drum by turning the elevating knob. For conversion of meters to yards, see figures 36 and 37.

(2) Set the azimuth scale and azimuth micrometer to ZERO. Deflections up to 100 mils right or left can be set on the azimuth micrometer.

(3) Keep the machine gun leveled laterally to eliminate error due to cant. The machine gun is properly leveled when the cross-level bubble is centered.

(4) Traverse and elevate the machine gun while looking through the telescope eyepiece until the target is centered in the telescope reticle.

g. Operation, Indirect Fire.

(1) Turn the shutter to "INDIREKT" (fig. 44), exposing the elevation micrometer. Set the required elevation, in mils, on the elevation scale and elevation micrometer. The required setting for any given target will be the angle of site (in mils) plus the range elevation (in mils) plus 300 mils. Range elevation in mils can be read on the Overhead Firing Table (figs. 36 and 37).

(2) Set the azimuth scale and azimuth micrometer to the required deflection.

(3) Keep the machine gun leveled laterally to eliminate error due to cant. The machine gun is properly leveled when the cross-level bubble is centered.

(4) Traverse the machine gun while looking through the telescope eyepiece until the aiming point is centered in the telescope reticle. Elevate the machine gun until the cross-level bubble is centered.

Section IV

MALFUNCTIONS AND CORRECTIONS

13. GENERAL.

a. This section is intended to provide necessary instructions in immediate action, and malfunctions and corrections. These instructions should be studied before any firing is done by the individual.

14. IMMEDIATE ACTION.

a. Immediate action is the immediate and automatic application of a remedy. It is to be applied immediately and automatically to a gun that jams, or otherwise malfunctions, in actual or simulated combat. When a stoppage occurs during firing, perform the immediate

action described below, or such portions thereof as are required to remedy the stoppage.

b. Failure of Gun to Fire. If the loaded gun fails to fire when the trigger is squeezed, proceed immediately as follows:

(1) Wait 5 seconds before opening chamber.

(2) Cock the gun by a sharp, quick pull on the cocking handle.

(3) If the round is ejected, squeeze the trigger and fire.

(4) If the round is not ejected, set the safety at SAFE, and unload the gun.

(5) Turn the gun over on its side and shake it to allow the round to fall out. If the round does not fall out, remove it by pushing a rod through the bore from the muzzle end, making certain that the gun points in a safe direction.

(6) Load the gun and resume firing.

15. MALFUNCTIONS AND CORRECTIONS.

a. Proper care of the gun before, during, and after firing will usually eliminate most stoppages. Stoppages or other malfunctions which cannot be remedied by the application of immediate action should be dealt with in accordance with instructions described in the following paragraphs.

b. Feed Stoppage or Malfunction. It is dangerous to investigate a feed stoppage or malfunctions by raising the feed cover without first cocking the gun or retaining a hold on the cocking handle. Should a live round remain in the chamber, the raising of the feed cover would allow the bolt to continue forward to fire a round, thus causing damage. Should a stoppage occur during firing, cock the gun and move the safety to SAFE. Then, raise the cover and remove the magazine or belt. If the gun cannot be cocked, apply a backward pull on the cocking handle, at the same time raising the feed cover and unloading the gun. The gun can then be cocked.

c. Failure to Fire.

(1) CAUSES. Failure to fire is generally caused by:

(*a*) Defective ammunition.

(*b*) Defective firing pin or firing pin spring.

(c) Bolt not fully closed.

(2) REMEDIES.

(*a*) If the primer of the round is deeply indented, the round is defective and must be discarded.

(*b*) If the primer is not indented or only slightly indented, the firing pin or firing pin spring may be worn or broken, or the bolt may not have been fully home. Check for dirt or any other obstruction on the bolt and receiver, and in breech end of barrel. Check for a ruptured case in the chamber. Remove all obstructions.

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(c) If driving spring is too weak to drive the bolt fully home, turn the gun over to ordnance personnel. If firing pin or firing pin spring is worn or broken, turn the bolt over to ordnance personnel.

d. Failure to Feed.

(1) CAUSES. Failure to feed may be caused by:

(a) Defective magazine or defective belt.

(b) Insufficient recoil of bolt to pick up a new round.

(c) Broken feed piece on top of bolt.

(2) REMEDIES.

(a) If the magazine does not feed cartridges into gun because of defective spring, follower, or mouth, it should be replaced.

(b) If belt does not feed cartridges into gun because it is deformed or broken, it should be discarded.

(c) If cartridges are not fed into gun because feed piece is broken, turn the bolt over to ordnance personnel.

(d) Insufficient recoil may be due to reduced blast boosting or to obstruction in receiver. Adjust the blast booster the required number of notches until sufficient recoil is obtained. Remove the receiver from gun and eliminate the obstruction.

e. Failure to Extract.

(1) CAUSES. Failure to extract is generally caused by:

(a) Dirty chamber.

(b) Dirty ammunition.

(c) Broken extractor.

(2) ACTION.

(a) When failure to extract occurs, the bolt may be found fully home with a spent case in the chamber. Generally, most failures to extract can be remedied by pulling the cocking handle smartly to the rear. If this does not remove the case, use a cleaning rod.

(b) Sometimes the empty case will be left in the chamber, the extractor ripping through the base of the cartridge. When this occurs, the bolt generally will attempt to feed a fresh cartridge into the chamber. It will then be necessary to remove this round before the spent case can be removed.

(c) Where a dirty chamber or dirty ammunition is indicated, clean the chamber and discard or clean the dirty ammunition. The presence of even invisible particles of dust or sand in the chamber or on ammunition will cause failure to extract. It is advisable to oil the belt with paraffin wax if cartridges are to be left in it for more than a short period. A belt once oiled can be used 10 times before oiling again.

f. Gun Fires Double or Triple Shots When Semiautomatic Trigger Is Pulled. The principal cause of this trouble is a recoil of the bolt sufficient to feed the succeeding round, but not enough to engage the sear. Adjust the blast booster the required number of notches to give the proper recoil.

Section V
DISASSEMBLY AND ASSEMBLY

16. GENERAL.

a. Before performing the following operations, make certain that the gun has been unloaded and removed from the mount. The using arms is permitted to perform only such disassembly and assembly operations as are given below. All other disassembly and assembly operations must be performed by ordnance maintenance personnel.

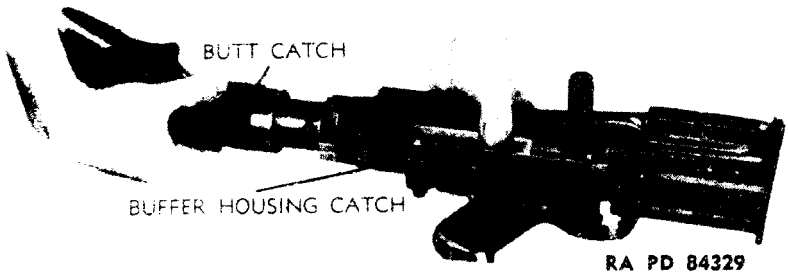

Figure 46 — German 7.9-mm Dual Purpose Machine Gun MG34 — Removal of Butt

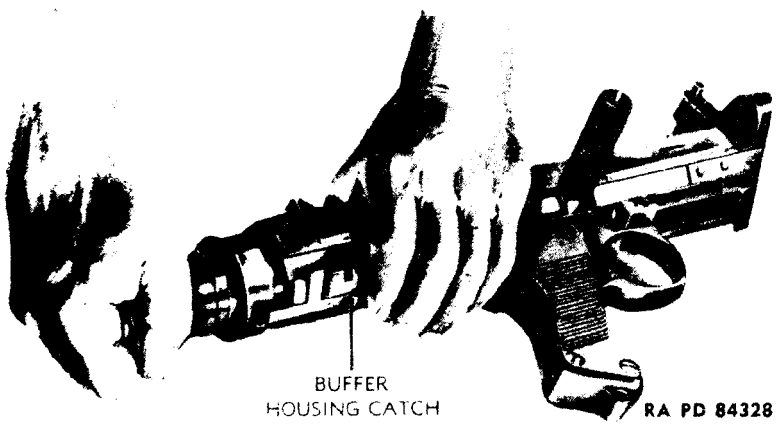

Figure 47 — Unlocking Buffer

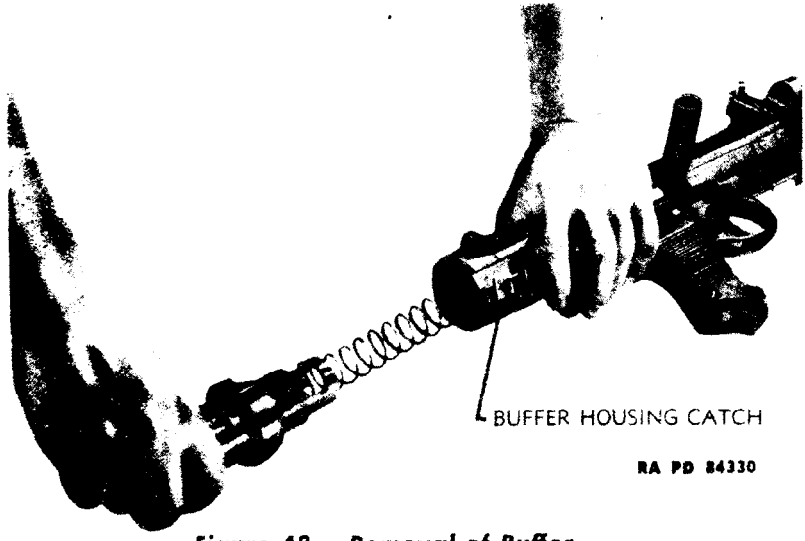

Figure 48 — Removal of Buffer

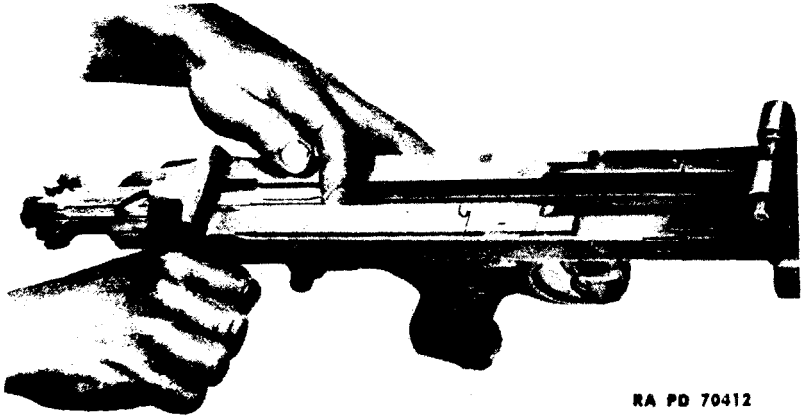

Figure 49 — Removal of Bolt

17. DISASSEMBLY.

a. Butt Stock. Press the butt catch below the butt, rotate the butt one quarter of a turn and remove it (fig. 46).

b. Feed Cover and Feed Block. Before proceeding, make certain the bolt is forward and fully home. Then press the feed cover catch forward and raise the cover (fig. 18). Press the feed cover axis pin to the left and remove the feed cover (fig. 25). Raise the feed block and remove it (fig. 26).

DISASSEMBLY AND ASSEMBLY

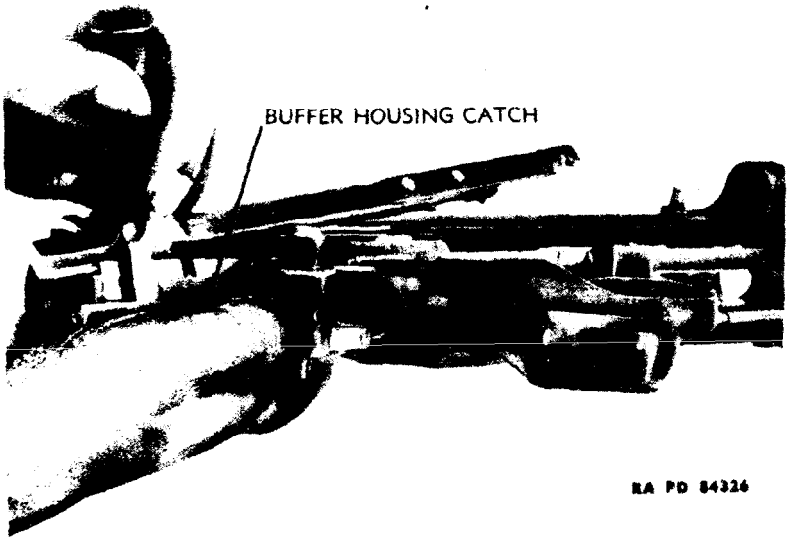

Figure 50 — Removal of Cocking Handle

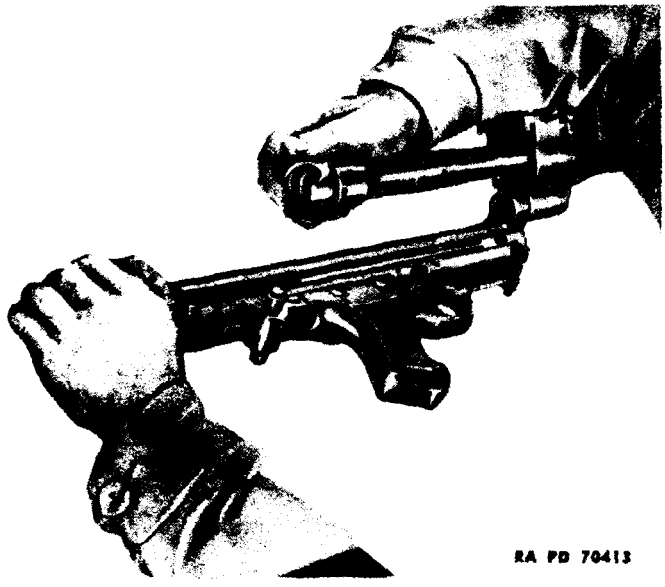

Figure 51 — Removal of Barrel

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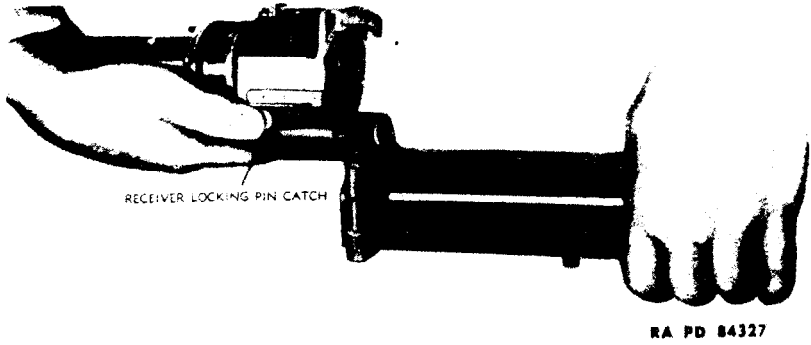

Figure 52 — Removal of Barrel Casing From Receiver

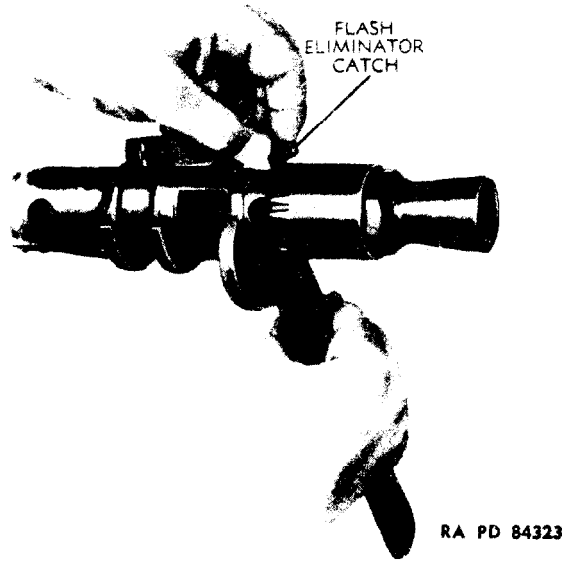

Figure 53 — Removal of Blast Trap and Flash Eliminator

c. Buffer Housing. Press the buffer housing catch beneath the rear end of the receiver, rotate the buffer housing one quarter turn counterclockwise (fig. 47) and remove the housing (fig. 48), taking care not to let the spring fly out.

d. Bolt and Cocking Handle.

(1) Pull the cocking handle to the rear and remove the bolt from the receiver (fig. 49).

(2) Press the buffer housing catch and remove the cocking handle (fig. 50).

e. Removal of Barrel. Depress the receiver catch (fig. 39), rotate the body about 180 degrees, and remove the barrel (fig. 51).

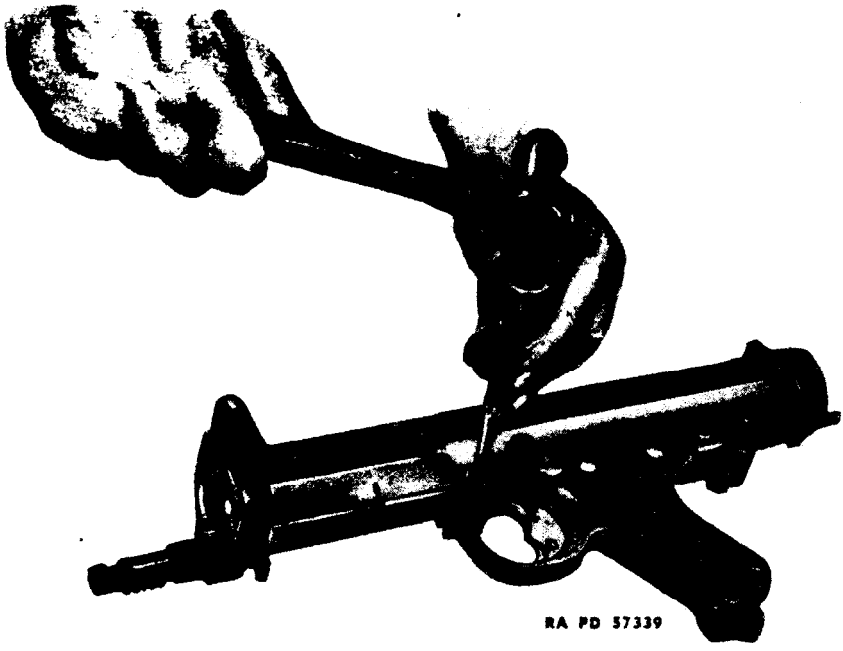

Figure 54 — Removal of Trigger Housing Group

f. Removal of Barrel Casing. Depress the receiver locking pin catch and remove the barrel casing from the receiver (fig. 52).

g. Flash Eliminator and Blast Trap. Raise the front end of the flash eliminator catch and with an open wrench (or by hand) and unscrew the flash eliminator together with blast trap (fig. 53). The threads are right-hand.

h. Trigger Housing. With a drift or any suitable tool, drive out the split pins (fig. 54) and then, the split pin retainers. Remove the trigger housing from the receiver. The trigger housing should not be removed unless absolutely necessary.

i. The chief components of the machine gun are shown in figure 55.

18. ASSEMBLY.

a. Prior to assembly, all groups must be free of dirt, rust, and other extraneous matter. Metal parts in contact must be covered with a light film of OIL, lubricating, preservative, light. Assembly is in the reverse order of disassembly. However, the following instructions pertaining to certain assembly operations should be noted:

(1) See that there is no round in the barrel.

(2) When inserting the bolt into the body, push the ejector fully forward and pull the trigger to allow bolt to be moved forward.

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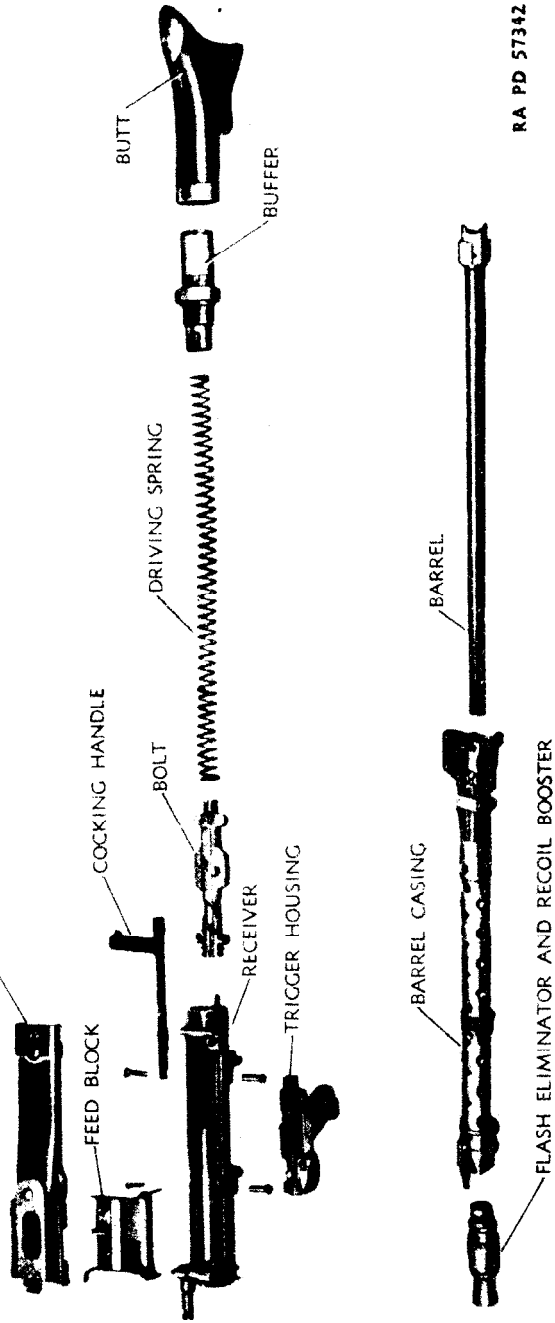

Figure 55 — Chief Components of the Machine Gun

Section VI

CARE AND PRESERVATION

19. GENERAL.

a. Proper functioning and accuracy of firing depend largely on care, cleaning, and oiling. The weapon should be checked daily for cleanliness and lubrication in garrison or camp, on the range, and in the field. The following instructions should be carefully observed.

20. CLEANING OF MACHINE GUN RECEIVED FROM STORAGE.

a. Machine guns and mounts which have been stored in accordance with instructions given in paragraph 25, will be coated with either OIL, lubricating, preservative, light, or COMPOUND, rust-preventive, light. Machine guns received from storage will usually be coated with a heavy, rust-preventive compound. Use SOLVENT, dry-cleaning, to remove all traces of the compound. Apply the solvent with rag swabs to large parts, and as a bath for small parts. Take care to remove the compound from all recesses in which springs or plungers operate. After removing all traces of the compound, allow the parts to dry, and then wipe with a clean, dry rag.

b. Persons handling parts after such cleaning should wear gloves to avoid leaving finger marks which are acid and usually start corrosion. SOLVENT, dry-cleaning, will attack and discolor rubber gloves.

21. CARE IN GARRISON AND CAMP.

a. Care and cleaning in garrison and camp include care of the machine gun necessary to preserve its appearance and condition during periods when no firing is being done. Machine guns in the hands of troops should be inspected daily for proper condition and cleanliness.

b. **Bore.**

(1) Remove the barrel.

(2) Assemble a cloth patch to a cleaning rod and insert the rod into the bore through the breech end. Run the patch back and forth several times through the entire length of the bore and chamber. Repeat with several patches until the patch comes out clean.

(3) Impregnate a patch with OIL, lubricating, preservative, light. Run the patch through the bore several times.

c. Wood and Metal Surfaces. Use a small cleaning brush to clean screwheads and crevices. With a clean dry cloth, remove all moisture, perspiration, and dirt from metal surfaces, and then wipe with a cloth slightly oiled with OIL, lubricating, preservative, light. This protective oil film should be maintained at all times. To clean the outer wood surfaces, wipe with a cloth lightly oiled with OIL, lubricating, preservative, light. Then clean with a soft dry cloth.

d. After cleaning and protecting the machine gun as described above, place it in the gun rack. Muzzle covers, gun covers, plugs, and rack covers should not be used because they collect moisture and promote rusting. However, when the squad rooms are being swept, it is permissible to cover the gun racks in order to protect the machine gun from dust. As soon as the rooms have been swept, the rack covers must be removed.

22. CARE PREPARATORY TO FIRING.

a. Before firing, the following instructions should be carefully observed in order to assure proper functioning of the machine gun.

b. Disassemble the gun into its main groups (fig. 55).

c. Run clean patches through the bore and chamber to remove all dirt and oil.

d. Thoroughly clean all metal parts and lightly oil with OIL, lubricating, preservative, light.

CAUTION: Do not oil the bore and chamber before firing because dangerous pressures may develop.

e. Lubricate the following with a drop of oil from an oiler.

(1) Ejector groove on bolt.
(2) Plunger at rear of extractor.
(3) Underside of firing pin catch on bolt.
(4) Firing pin locking nut at rear of bolt.
(5) Crevices around feed piece.
(6) Underside of the 3 belt feed pawls.
(7) Safety lever.
(8) Groove for cocking handle on receiver.

f. Lubricant should be applied lightly because oil has a tendency to collect dirt which may act as an abrasive on the operating parts.

g. After the machine gun groups have been cleaned and oiled as described above, assemble the gun and wipe all outer surfaces with a lightly oiled rag.

23. CARE ON THE RANGE AND IN THE FIELD.

a. The machine gun must be kept free from dirt and well lubricated to obtain proper efficiency during firing. The following instructions should be carefully observed.

b. Before Firing.

(1) See that the bore is free from dust, dirt, mud, or snow.

(2) See that the chamber is clean and free from oil.

(3) Test the trigger mechanisms at SAFE and FIRE.

(4) Work the bolt back and forth to see that it is clean and well oiled, and that it works freely.

(5) Examine the belts and magazines to see that they are free from dirt and properly loaded. Discard defective belts and magazines.

c. During Firing. In general, it should not be necessary to disassemble the machine gun in the field for cleaning. However, if the mechanism becomes very dirty or functions sluggishly, disassemble the gun into its groups (fig. 55), and clean as instructed in paragraph 22.

24. CARE AFTER FIRING.

a. The weapon should be cleaned after each session of firing and not later than the evening of the day on which it was fired.

b. Immediately after firing or as soon as possible, remove the barrel and run several wet patches impregnated with CLEANER, rifle bore, through the bore. If CLEANER, rifle bore, is not available, use warm soapy water or warm water alone or in the absence of these, cold water. Remove the patch from the cleaning rod and attach a cleaning brush. Run the brush through the bore several times. Make certain the brush goes all the way through the bore before reversing the direction. Remove the brush and run several patches wet with clean water through the bore and chamber again. Follow this with dry patches until they come out clean and dry. Finally, run a patch impregnated with OIL, lubricating, preservative, light, through the bore and chamber.

c. After the bore and chamber have been cleaned, disassemble the gun (fig. 55). Clean all the metal parts with a clean dry rag, then wipe with a lightly oiled rag before assembling. After assembling, wipe the exterior surface with a rag lightly oiled with OIL, lubricating, preservative, light.

25. PREPARATION FOR STORAGE.

a. OIL, lubricating, preservative, light, is the most satisfactory oil for preserving the mechanism of machine guns. This oil is satisfactory for preserving the polished surfaces, bore, and chamber for from 2 to 6 weeks, depending on climatic and storage conditions. Machine guns in short term storage should be inspected every 5 days. If necessary, the preservative film should be renewed.

b. COMPOUND, rust-preventive, light, is satisfactory for preserving polished surfaces, bore, and chamber for a period of up to one year, depending on climatic and storage conditions.