Margolin MCM
(one man's ongoing voyage)

As I have written elsewhere, I consider the Margolin MCM to be one of the most under-rated 'Standard' pistols of all time. While the design and finish may seem rustic, the MCM delivers excellent accuracy and reliability.

The material in this document is for the information of those interested in these pistols – no responsibility is accepted or implied for misuse or modifications to the pistols.

ST

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From the Margolin Owners Manual (note: this is the English bits only –text in ***italics*** has been added)

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MARGO

From the Margolin Owners Manual (English only)

APPLICATION

The MCM standard small-bore sporting pistol is designed for entry-level target shooting in shooting galleries and on shooting ranges at 25 m distance. Calibre 5.6 mm (22 L.R.) rimfire cartridges are used for this pistol.

SPECIFICATIONS

Barrel length	152mm
Sight radius	220mm
Magazine capacity,	5 cartridges
Weight	1,1Kg

STANDARD EQUIPMENT

List of Assemblies and Parts of the Pistol

Item in Fig. 1	Description	Quantity
1	Barrel	1
2	Barrel pin	1
3	Cover	1
4	Cover screw	1
5	ejector	1
6	Pin	2
7	Frame	1
8	Trigger stop screw	1
9	rivet	1
10	Rear sight base	1
11	Locking screw	1
12	Rear sight spring	1
13	Rear sight blade	1
14	Rear sight screw ass'y	1
15	Bead	1
16	Plunger spring	1
17	Slide	1
18	Firing pin spring	1
19	Firing pin	1
20	Firing pin retainer	2
21	Extractor spring	1
22	Extractor stop	1
23	Extractor	1
24	Cotter	1
25	Front sight	1
26	Front sight adjuster	1
27	Front sight screw	1
28	Front sight screw pin	2
29	Coupling screw	1
30	Front sight plunger	1
31	Pin	1

Item in Fig. 1	Description	Quantity
32	Front sight base	1
33	Rod head	1
34	Rod head pin	1
35	Sleeve	1
36	Rod	1
37	Recoil spring	1
38	Trigger spring	1
39	Trigger	1
40	Trigger bar	1
41	Pin	1
42	Trigger bar spring	1
43	Sear	1
44	Pin	1
45	Sear spring	1
46	Hammer pin	1
47	Pin	1
48	Hammer	1
49	Hammer strut	1
50	Mainspring	1
51	Magazine catch	1
52	Magazine catch spring	1
53	Magazine housing	1*
54	Follower	1*
55	Magazine button	1*
56	Follower spring	1*
57	Magazine cover pin	1*
58	Magazine cover (*base*)	1*
59	Grip lh	1
60	Grip rh	1
61	Grip screw	4
62	Spring	1

** Note: there are at least three types of OE magazine for .22LR; see* **magazine disassembly / assembly, cleaning & lubrication** *in section 2*

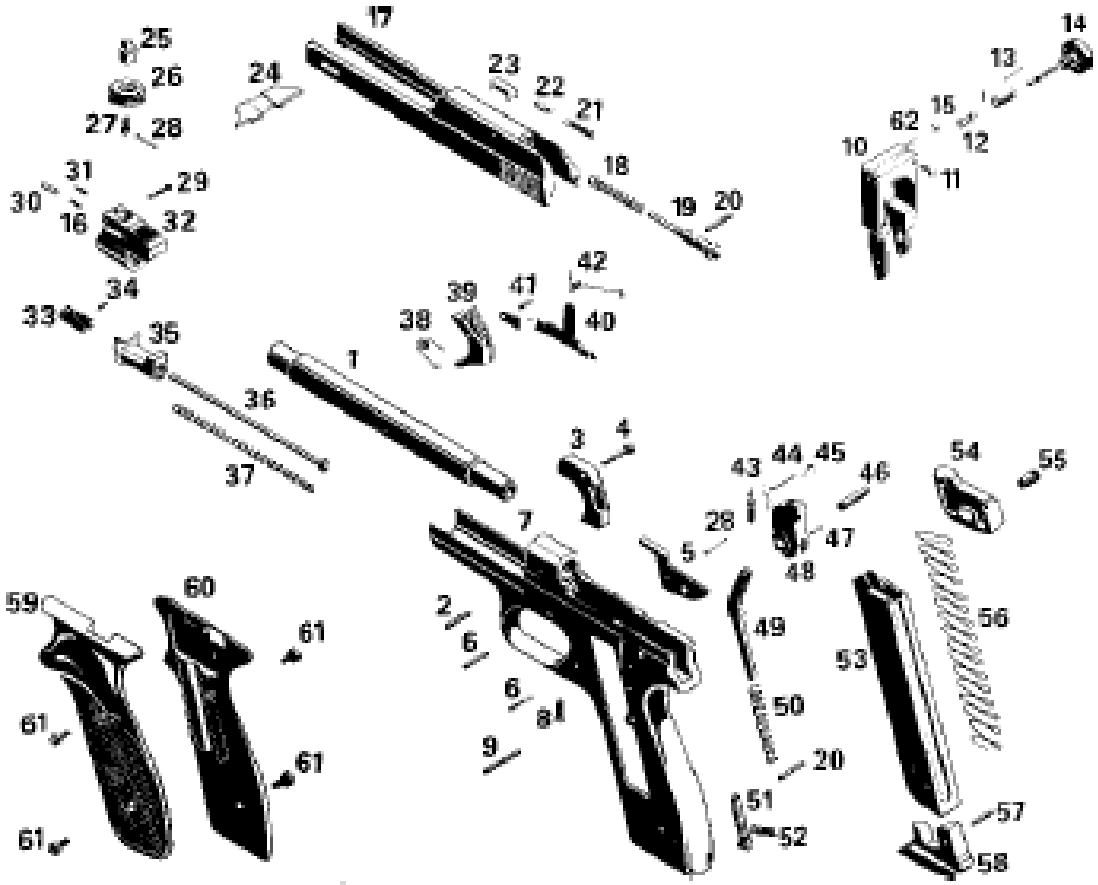


Рисунок 1 – Сборочные единицы и детали пистолета

Fig. 1 – Pistol Assemblies and Parts

Fig. 1 – Pistol Schematic Diagram

Note that the numbers in this schematic diagram **do not** relate to the part numbers in **fig 2**

SET OF DELIVERY

Pistol	1
Case	1
Magazine	1 (most were supplied with two magazines)
Cleaning rod	1
Oiler	1
Drift	1
Screwdriver	1
Firing pin	1 (*supplied spare*)
Recoil spring	1 (*supplied spare*)
Trigger spring	1 (*supplied spare*)
Mainspring	1 (*supplied spare*)
Sear spring	1 (*supplied spare*)
Trigger bar spring	1 (*supplied spare*)
Grip screw	2 (*supplied spare*)
Certificate	1

DESIGN AND OPERATION

The pistol schematic diagram is shown in **Fig. 2**.
The sighting device allows adjustment of the sight radius for windage and elevation. A special hammer half-cock notch serves as a safety device. When the hammer is set to the safe position, the sear nose engages the above mentioned notch, blocking both the hammer and the sear.
The firing mechanism is of a hammer type. The pistol automatic operation bases on the blow-back principle. The automatic cycle includes extraction and ejection of the used case, the firing mechanism cocking and feeding the next cartridge from the magazine into the chamber.

SAFETY REQUIREMENTS

Always consider the pistol to be loaded and ready for shooting.
Do not point the pistol at people.
Load the pistol only before shooting. Do not store the loaded pistol.

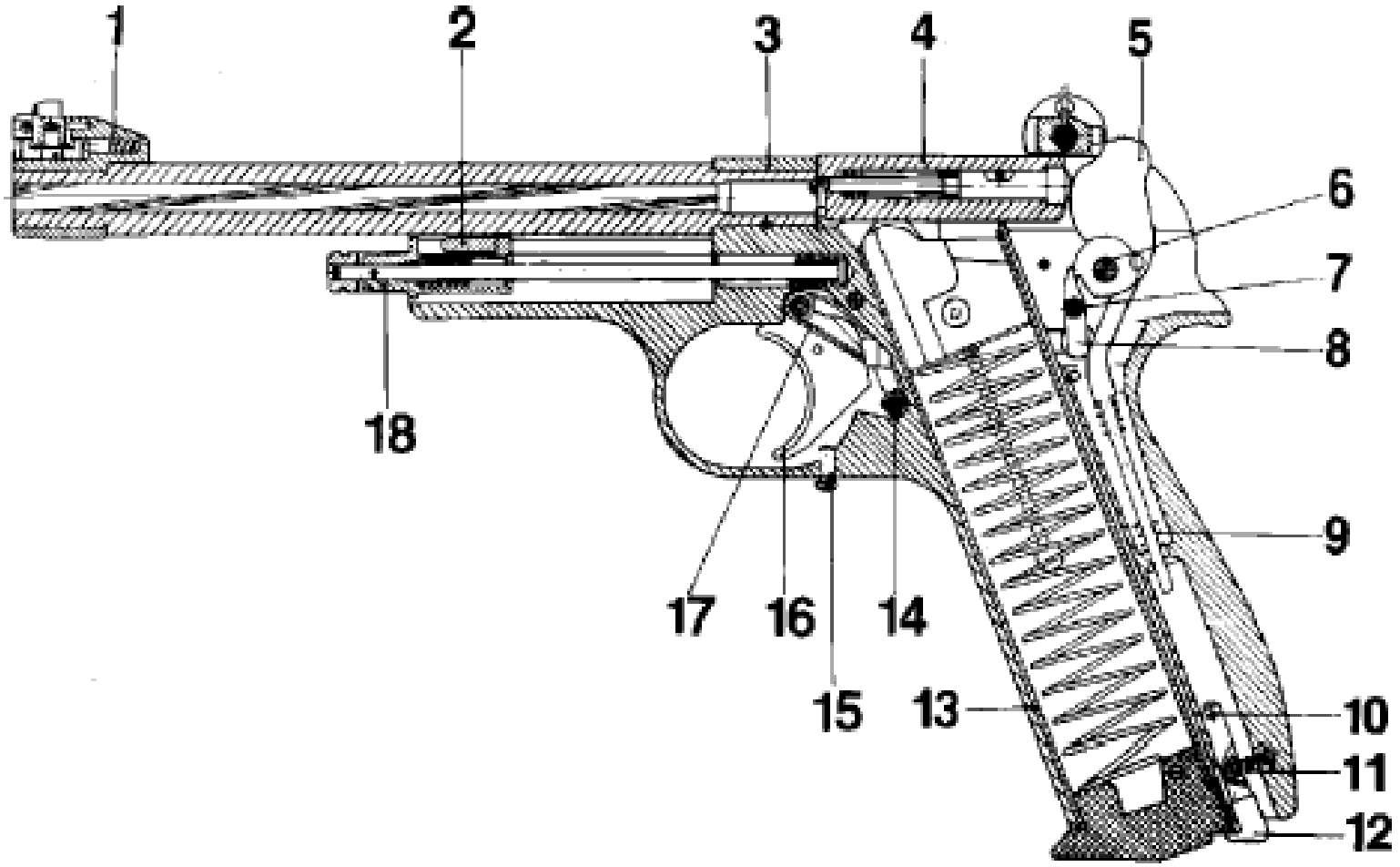


Fig. 2 – Pistol Schematic Diagram
Note that the numbers in this schematic diagram **do not** relate to the part numbers in **fig 1**

Note: these part numbers relate to **fig 2**, and differ from the part numbers in figure 1

Fig 2	= *Fig 1 part #* ST
1 –front sight ass'y	*Assembly (16, 25, 26, 27, 28, 29, 30, 31,32)*
2 –cotter	*24*
3 –frame with barrel and rear sight	*Assembly (1, 2, 7)*
4 –slide	*17*
5 –hammer ass'y	*Assembly (46, 47, 48, 49)*
6 –hammer pin	*46*
7 –pin	*44*
8 –sear	*43*
9 –mainspring	*50*
10 –magazine catch pin	*20*
11 –magazine catch spring	*52*
12 –magazine catch	*51*
13 –magazine	*Assembly (54, 55, 56, 57, 58)*
14 –trigger bar spring	*42*
15 –stop screw	*8*
16 –trigger with bar	*Assembly (39, 40, 41)*
17 –trigger spring	*38*
18 –rod ass'y	*Assembly (33, 34, 35, 36, 37)*

OPERATION

When preparing the pistol for shooting, proceed as follows:
1 Make sure that no cartridge is in the chamber.
2 Disassemble the pistol partially as follows: (refer **'*Field Stripping'***, in section 2)
– remove magazine 13 (see Fig. 2);
– undo screws 61 (see Fig. 1) and remove grips 59 and 60;
– remove slide 4 (see Fig. 2).
3 Clean and oil the pistol.
4 Assemble and test the pistol.

Before exercising, proceed as follows:
– load the magazine with five cartridges;
– fit and secure the magazine in the pistol;
– move the slide fully to the rear and then release it;
– move the slide back for 5 to 10 mm to ensure that the chamber is empty.

On completion of shooting:
– remove the magazine;
– make sure that no cartridge is in the chamber. If there is a cartridge in the chamber, remove it;
– release hammer 5 (see *fig 2*) and set it to SAFE position by turning it for about 10-15 mm until the sear enters the hammer half-cock notch.

ACCEPTANCE CERTIFICATE

The MCM Standard Small-Bore Sporting Pistol No. _____ complies with the Specification TY 3-3.881-78, the State standard ÃÎÑÒ Ð 50529-93 and the criminalistical requirements of the Internal Affairs Ministry of Russia and found fit for service.
The MCM Standard Small-Bore Sporting Pistol has been certified for conformity with the safety requirements by the Safety Certificate POCC RU.ÌÆ03.Â00591 which is valid from October 21, 2003 to October 20, 2006.
The Certificate has been granted by the Service/Civilian Weapons and Ammunition Certification Agency of the Udmurt Standardization and Metrology Centre, reg. No. POCC RU.0001.11ÌÆ03.

Date of manufacture ……

SLUSHING* CERTIFICATE

The MCM standard small-bore sporting pistol No. _____ has been subjected to slushing.
Date of slushing
Slushing term without reslushing is 36 months
Slushed by
Pistols should be stored in warm and well ventilated places located in any macroclimatic region.
Before using the pistol, study carefully this Certificate.

** This has been translated as 'slushing': it refers to preparing the pistol for packaging/storage before being shipped from the factory.*

Standard Small-Bore Sporting Pistol

Cartridge	Magazine capacity, rounds	Barrel length, mm	Sighting radius, mm	Overall dimensions, mm, max	Weight, unloaded, kg, max	Sight
.22LR	**5**	**130**	**190**	**245x140x43**	**0,91**	**micrometric, windage-elevation adjustable**

FIELD STRIPPING the PISTOL
An illustrated guide

ENSURE THAT THE PISTOL IS UNLOADED!
Check that the chamber and magazine/s are empty!

a. Remove the magazine from the pistol
b. Check that both the chamber and magazine/s are empty!
c. Fully cock the hammer
d. Pull the knurled section of the rod (part #33 fig 1) about 2mm and rotate 90° - this takes the recoil spring pressure off the cotter pin
e. Completely remove the cotter (part #24 fig 1) to the left side of the pistol
    a. With the pressure off the recoil spring, the cotter can be moved (about 1½ mm to the rear of the pistol, disengaging it from the slide
f. Remove the rod assembly from the front of the pistol
g. Remove the slide from the rear of the pistol

Reassembly is the reverse of this procedure

A & B – check that the magazine is removed and the breech is empty	**C – Cock the hammer**

D – Pull the knurled section of the rod about 2mm and rotate 90°	E – completely remove the cotter
F – remove the rod assembly	G - remove the slide

May 2009, ST

COMPLETE DISASSEMBLY OF THE PISTOL

ENSURE THAT THE PISTOL IS UNLOADED!
Check that the chamber and magazine/s are empty!

Eye protection is always recommended when disassembling/assembling any spring-loaded parts!

a. Field strip the pistol as **above** (field stripping the pistol)
b. Gently lower the hammer - **ensure** that the hammer is fully forward
c. Remove the grip plates

d. **Remove the safety lever**, if fitted
e. Remove the trigger cover (#3, fig 1)
f. Lift and remove the trigger assembly (#16, fig 2)
    a. Take care not to damage the trigger bar spring (#42, fig1)
    b. The trigger spring (#38, fig1) **will** pop out of its location
g. **Ensure** that the hammer is fully forward – drift the hammer pin (#46, fig 1) out to the right
    a. With the hammer fully forward, there remains some tension on the hammer spring that is easily overcome by finger pressure
    b. Lift the hammer and strut assembly from the pistol
h. Remove the hammer spring from the frame
    a. first invert the pistol (the spring might fall out of the frame)
    b. if necessary, hook the spring out of the frame. This area of the frame acts as a lint/crud collector and it can be amazing how much crud will be in this recess
i. Remove the sear spring (#45, fig 1)
    a. While this spring is fairly small, it is under considerable pressure
j. Drift the sear pin (#44, fig1) out to the right
k. Remove the sear (#43, fig 1)

At this stage, most people consider the pistol disassembled…

If you need to do so:

- Removing the rear sight assembly and rear sight disassembly
- Barrel removal
- Removing the front sight assembly and front sight disassembly

TBA

May 2009, ST

CLEANING & LUBRICATION

Materials:

- Graphite-free Molybdenum Disulphide ('Moly') lubrication of trigger, hammer strut, hammer and sear (I use Molybond GA50)
- Quality gun oil
- Bore solvent
- Bristle brush (e.g. a clean toothbrush)
- Pull through or cleaning rod and brush – I generally use a .22 calibre bore snake
- .22 calibre bristle brush for cleaning chamber
- Non-ferrous 'pick' (easily fabricated from a 6"/150mm length of brazing rod)

Optional:

- Ultrasonic cleaning bath
- Touch-up blue

Basic cleaning routine:

Field strip the pistol

Inspect each assembly for wear or damage

Check;

- the muzzle of the pistol for damage to the crowning
- the barrel breech-face for any peening from the slide or the firing pin
- slide/frame rails for wear or burring
- sights for looseness

Thoroughly clean;

- Breech face and barrel ramp
- Slide, including the underside and rails
- Extractor area in the slide
- The indent in the underside of the slide for the disconnector engagement
- Frame where the slide mounts
- Magazine well
- Exposed face of hammer where it rubs the slide

a	b

c	d

Now is the time to apply any touch-up blue, following the manufacturer's instructions

- Lightly lubricate with a quality gun oil;
- The slide and frame rails
- Avoid allowing excess gun oil in the area where the hammer moves in the frame: the hammer and sear should be lubricated with 'moly' grease only.
- Before reassembly, **ensure** that the disconnector is clean and moving freely
- lightly wipe all exterior surfaces of the pistol and magazine/s with quality gun oil
- Lower the hammer to the half-cock position

For cleaning the magazine/s, see **magazine disassembly / assembly, cleaning & lubrication**

Complete disassembly and clean/lubricate:

Disassemble the pistol

- Wash metal parts in a suitable solvent (diesel fuel, white spirits, etc.). Use an ultrasonic cleaning bath if available.
- Dry thoroughly
- Now is the time to apply any touch-up blue, following the manufacturer's instructions
- Inspect each part for wear or damage

Check;

- the muzzle of the pistol for damage to the crowning
- the barrel breech-face for any peening from the slide or the firing pin
- slide/frame rails for wear or burring
- hammer for wear or burrs
- hammer strut (#49 fig 1) for wear or burrs
- trigger bar (#40 fig 1) for wear or burrs
- the faces of the sear/hammer engagement for chipping or uneven wear

a	b
c	d

e	f
g	h

lightly lubricate with ‘moly’ grease;

- hammer
- hammer strut
- sear
- trigger bar
- trigger pins

lightly lubricate with quality gun oil;

- slide/frame rails
- extractor parts
- reassemble the pistol

check;

- disconnector movement and **correct operation**
- **trigger stop adjustment**
- extractor movement

lightly wipe all exterior surfaces of the pistol and magazine/s with a coating of quality gun oil

Lower the hammer to the half-cock position

May 2009, ST

LONG-TERM STORAGE

Medium term – up to 6 months

- **field strip>>** the pistol and thoroughly clean the pistol
- Disassemble and thoroughly clean the magazine/s
- Spray all parts with a good storage oil (I use **Lanox®**)
- Reassemble pistol; lower hammer to half-cock
- Reassemble the magazine/s
- See **storage>>**

Longer term – more than 6 months

- **disassemble>>** the pistol and thoroughly clean all parts
- Disassemble and thoroughly clean the magazine/s
- Spray all parts with a good storage oil (I use **Lanox®**)
- Reassemble pistol; lower hammer to half-cock
- Reassemble the magazine/s
- See **storage>>**

Storage

DO	DON'T
Wrap the pistol ad magazine/s in oiled cotton cloth or oiled grease-proof paper	Store any pistol for long-term in foam
Store in a dry area – an inexpensive humidity removal pack from the supermarket is a good idea in your security storage	Store in humid conditions
A small block of camphor wax exposed in your security storage helps prevent rusting of steel parts	
Re-wipe exposed areas of the pistol with a good gun oil **EVERY** time the pistol surfaces are handled	
Thoroughly clean and relubricate the pistol before firing (particularly the bore)	

July 2009 ST

TRIGGER ADJUSTMENT & SETTINGS

Trigger Stop
(part #15, fig 1) – **Note**: there **must** be some movement (over-travel) of the trigger beyond the release of the hammer/sear;

If the trigger stop screw is adjusted too far in (i.e. 'up'), the trigger will not release the cocked hammer. The simplest method is to adjust the trigger stop screw 'empirically';

- remove the magazine and ensure that there is no round in the chamber (!)
- adjust the screw until the trigger will not release the hammer,
- with the hammer cocked, back off the screw until the hammer releases
- further back it off **at least** ¼ turn.

If there is insufficient over-travel of the trigger the trigger pull can become erratic, or in the worst case fail to release the hammer.

As supplied ex-factory, the trigger stop screw should be a good (i.e. tight) fit and not readily come 'out of adjustment' with normal use. If the screw becomes loose, a judicious application of a medium grade thread-locking compound will normally remedy the situation.

Sear Engagement

Any modification to the sear/hammer engagement should only be undertaken by a competent gunsmith familiar with this make and model of pistol!

To check the sear engagement:
Note: the standard sear/hammer engagement is not adjustable.
TBA

First stage – trigger slack

Note: there **must** be some forward movement (first stage slack) of the trigger: otherwise the trigger mechanism will not re-set after firing a shot.

Any modification to the trigger bar should only be undertaken by a competent gunsmith familiar with this make and model of pistol!

Under no circumstances modify the trigger bar such that the disconnector becomes inoperable!

The first stage / trigger slack can be adjusted by:

- Modifying the trigger/frame contact area, and/or
- Modifying the trigger bar

Modifying the trigger/frame contact area:

- A semi-permanent modification can be made by building up the trigger (#39) with braze or epoxy putty and filing down to suit.
- Alternatively, an adjustable modification can be made by drilling and tapping the trigger and inserting a set screw. If this is done, it is an advantage to drill the trigger guard to simplify the insertion of an allen key (or screwdriver) to make adjustments.
    - Remove 0.5mm from the area shown
    - Drill and tap for a xxxx mm set screw
    - Drill a xxxx mm hole in the trigger guard in the location shown

Modifying the trigger bar (#40) – under no circumstances modify the trigger bar such that the disconnector becomes inoperable!
This project to follow

May 2009 ST

MAGAZINE DISASSEMBLY / ASSEMBLY, CLEANING & LUBRICATION

Eye protection is always recommended when disassembling/assembling any spring-loaded parts!

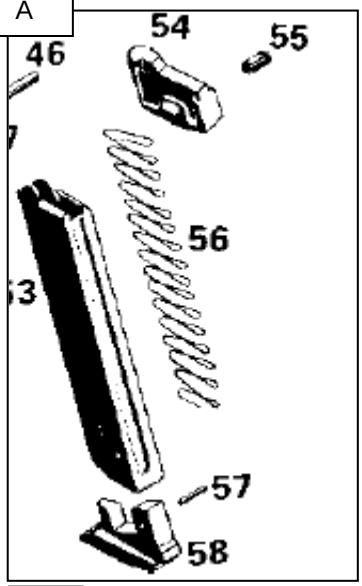
Note that there are two main variants of the magazine:

- With a 'flat' spring for the follower spring (**A**)
- With a coil spring for the follower spring (**B**)

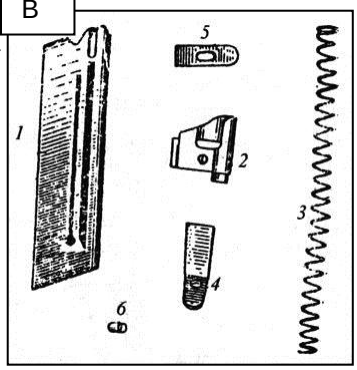
The follower and base, etc. of the magazine will vary according to the type of spring.

The OE magazines I have are a factory-supplied mixture of type A and B, having the flat follower spring and follower, but the unpinned base as per 'B'. to the best of my knowledge, all the factory .22LR magazines are interchangeable.

A



B



Disassembly of flat spring magazine (A):

With the magazine **empty**:

- Remove the pin (to the left) from the magazine base
- Remove the magazine base – **caution**: the base is under some pressure from the follower spring
- Remove the follower spring
- Slide the follower down so that the magazine button (part #57 fig 1) is in line with the relief in the magazine slot – remove the magazine button
- The follower can be removed through the base of the magazine

Reassembly is the reverse of the above

Disassembly of coil spring magazine (B):

With the magazine **empty**:

- Depress the inner base plate through the hole in the base
- At the same time, slide the base forward and off the magazine – **caution**: the base is under some pressure from the follower spring
- Remove the follower spring
- Slide the follower down so that the magazine button (part #57 fig 1) is in line with the relief in the magazine slot – remove the magazine button
- The follower can be removed through the base of the magazine

Reassembly is the reverse of the above – ensure that the inner base locks in place against the base plate.

C

Disassembly of flat spring magazine (C):

The .22LR magazines that seem most common in AUS are type 'C'

With the magazine **empty**:

- Depress the inner base plate through the hole in the base
- At the same time, slide the base forward and off the magazine – **caution**: the base is under some pressure from the follower spring

- Remove the follower spring
- Slide the follower down so that the magazine button (part #57 fig 1) is in line with the relief in the magazine slot – remove the magazine button
- The follower can be removed through the base of the magazine

Reassembly is the reverse of the above – ensure that the inner base locks in place against the base plate.

Cleaning & Lubrication:

- Disassemble as above (A or B)
- Wash metal parts in a suitable solvent (diesel fuel, white spirits, etc.). Use an ultrasonic cleaning bath if available.
- Dry thoroughly
- Thoroughly clean the follower and base
- **Lightly** lubricate metal parts (inside and outside) with a light machine oil
- Reassemble

June 2009, ST

THE FIRING PIN

> *An acquaintance well versed in the ways of the MCM maintains that there was more development invested in the design of the MCM firing pin than in some of the complete recent target pistol designs – this may be an exaggeration, but the MCM's firing pin is really excellent.*

Forget about modifying or improving the MCM firing pin – it is already **PERFECT!**

With MUCH use, the firing pin MIGHT be damaged (unlikely!) – during any routine cleaning, check the nose of the firing pin for any damage.

A SLIDE STOP

A 'nice touch' missing from most factory supplied MCMs is a slide stop.
Most of these pistols are used for ISSF 25M events, and as such the pistol must be open (and the magazine removed) at the completion of each 5-shot series ready for the Range Officer's inspection.

Without a slide stop, the action must be propped open – a piece of transparent plastic (e.g. Perspex or acrylic, clear or tinted) approximately 15 to 20mm x 30 to 40mm can be used.

An option is to add a slide stop.
This project to follow

May 2009 ST

HAMMER SPRING

The hammer spring (#50, fig1)

- Xxxx turns
- Xxxx mm diameter, xxxx mm uncompressed length
- should compress from xxxx mm (uncompressed length) to xxxx mm with xxxx Kg. If necessary, replace the hammer spring.

RECOIL SPRING

- #37, figure 1
- Xxxx turns
- Xxxx mm diameter, xxxx mm uncompressed length

CHANGING THE REAR SIGHT BLADE

Eye protection is always recommended when disassembling/assembling any spring-loaded parts!

TBA

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CHANGING THE FRONT SIGHT POST

Eye protection is always recommended when disassembling/assembling any spring-loaded parts!

TBA

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SIGHT ADJUSTMENT

At first acquaintance, you might think that the rather innovative MCM sights somewhat unusual: however, a shooter accustomed to US open sights should have no trouble – clockwise down for elevation (on the front sight) and clockwise right for windage (on the rear sight).

At 25M,	one click = xxxx mm of elevation at the target	clockwise = down
	one click = xxxx mm of windage at the target	clockwise = right

TBA

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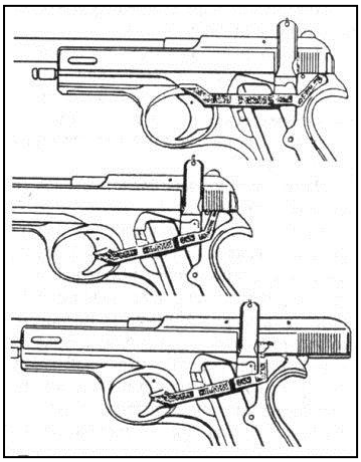
'SAFETY' CATCH



Without getting into any discussion of the role of a safety catch on pistols used for ISSF 25M events, some MCM variants are fitted with a safety catch/mechanism on the left side of the pistol.

Where fitted, this is in addition to the half-cock safety built in to all models. Note that there is no positive safety provided by this safety lever – it only gives an interruption in the trigger guard.

With this safety catch engaged (i.e. the 'down' position):

- The safety catch lever physically intrudes into the triggering area
- the trigger bar is depressed, preventing release of the cocked hammer, and
- The catch can be used as a slide-stop to hold the pistol open

Removal and replacing the safety catch

ENSURE THAT THE PISTOL IS UNLOADED!

Check that the chamber and magazine/s are empty!

- Field strip the pistol>>
- There are two notches machined into the frame: the lower one locates the lever in the 'safe' position and the upper one is the 'fire' position
- With the grip plate removed, the lever can be further raised to the top of the recess – in this position the lever can be lifted from the frame.

Replacing the safety lever is the reverse procedure.

June 2009 ST

ADDITIONAL BARREL WEIGHTS

Given the light weight of the MCM as supplied, the most popular external modification is the addition of a barrel weight.

Typically, these are a drilled sleeve that slides on to the barrel from the muzzle end, or a two-piece weight split lengthwise and clamped to the barrel.
Both arrangements can have the disadvantage of making it difficult to position the rod assembly for removal of the cotter before field stripping the pistol – the better designs have a cutout in the area of the knurled knob of the rod assembly that enable the pistol to be field stripped without removing the barrel weight. Another alternative is to have the barrel weight bored through to the front in line with the knurled knob, and the rod extended so that it protrudes past the front of the barrel weight. .

ST

LIGHTENING THE HAMMER

The hammer is only a means of transferring the energy of the hammer spring to the firing pin – the amount of energy transferred is independent of the mass of the hammer:

- Lightening the hammer mass increases the velocity of the hammer motion, but the amount of energy transferred remains the same
- There is a theoretical advantage in reduced 'lock time' – I would suggest that if you think this is important you have too much time on your hands and there are more important things to worry about…
- If the rear of the frame is modified:
    - to enable a lower bore line (in relation to the shooter's hand) there can be a very real possibility of the hammer 'pinching' the shooter's hand when the slide recoils - , or
    - by extension to get the maximum 30mm contact with the hand allowed under ISSF rules.

  there is a real case for modifying the shape of the hammer

This project to follow

ST

AN ADJUSTABLE TRIGGER

This project to follow

ST

SLIDE BUFFERS

This project to follow

ST

Working on the MCM

INTERCHANGABILITY OF PARTS

Rumour would have it that MCM factory assembly is a cottage industry:

- undertaken by old ladies retired from Russian tractor and tank factories
- requiring a cold chisel, sledge hammer, coarse file and bad eyesight.

This is undoubtedly a gross exaggeration, but…

…when it comes to interchangability of parts, an MCM does not always rate highly!

Some parts are (usually) fully interchangeable:

- hammer
- sear
- barrel
- magazine
- front sight blade
- rear sight blade
- the various pins

Most other parts might require a 'custom fit', requiring a bit of filing to get a good fit; two parts are usually the ones most likely to give trouble:

- It is unlikely that you would interchange the trigger assembly cover (#3, fig 1): my guess is that the MCMs are given a final shape and polish by hand before blueing and this non-critical area is hand-shaped – they can vary in thickness, profile and (importantly) exact location of the hole for the cover screw. (#4, fig 1) .
- The rear sight base (#10, fig 1): the location of the retaining rivet (#9, fig 1) appears to be drilled without a jig and can be located 'differently'

BARREL REMOVAL

The barrel is a light press fit into the frame, retained by the barrel pin.

- **Field strip the pistol>>**
- Thoroughly clean the breech face
- Drive out the barrel pin (#2, fig 1) to the right
- Soak the barrel/frame area overnight in a good penetrating oil
- Place the frame in a vice (with some protection for the finish)
  I like to:
  1. (gently!) warm up the barrel support area of the frame – too much heat will worsen the situation by 'baking' any oil/crud that has wicked-in between the barrel/frame
  2. spray some commercial electronic freezer spray (from your local electronics parts supplier) into the barrel throat – this will usually produce an audible cracking sound as the two parts separate
- With a suitable protection of the barrel (leather or lead strapping) a judicious application of a wrench will normally start the barrel rotating in the frame and the barrel can be twisted and withdrawn free of the frame.

Replacement of a barrel:

- Check the mating areas for any burrs, lint, etc.
- **Thoroughly** clean

    - the barrel housing in the frame, and
    - the barrel where it mounts into the frame
- Place the frame in a vice (with some protection for the finish)
- lightly grease the contact areas with a moly grease – lightly wipe off the contact areas
- insert the barrel – **lightly** tap home the barrel with a nylon mallet: protect the muzzle crown with a piece of softwood when driving the barrel home
- line up the holes for the barrel pin (#2, fig 1)
- insert the barrel pin from the right

REMOVING THE REAR SIGHT ASSEMBLY

The mounting of the rear sight assembly to the frame is the only riveted part of the MCM: i.e. it is the only part that requires any machining to remove:

- **Field strip the pistol>>**
- Lower the hammer (to take loading off the hammer spring)
- Remove the cover (#3, fig 1)
- Remove the trigger assembly(#16, fig 2)
- Remove the sear spring (#45, fig 1) – **Note**: this little spring is under considerable tension
- Drift out the hammer pin (#46, fig 1) to the right and remove the hammer assembly and hammer spring
- Drift out the sear pin (#47, fig 1) to the right

Now comes the delicate touch

- Lightly Dremel one end of the sight mounting rivet (#9, fig 1) to slightly below the surrounding metal – the rivet can be drifted out

REAR SIGHT DISASSEMBLY

REMOVING THE FRONT SIGHT ASSEMBLY

Following an enquiry from a reader about getting the front sight from the barrel so that a 'factory' barrel weight could be fitted, Ray Brummel provided the following:

> *The barrel weight shown appears to utilise the factory front sight itself, along with the factory adjustment nut and presumably, includes internal provision for fitting the factory detent plunger and spring.*
> *Accordingly, acting as Peter Fraser suggests, by filing the front sight housing barrel band (or cutting with Dremel cut-off disc) would not be an issue, unless the intention is to return to standard configuration at some time in the future.*
> *If a future return to standard is a possibility, then follow the Dick Willis recommendation.*
> *I have removed literally dozens of Margolin foresights over the years, by the "soft" drift method, with no ill effects to barrel or sight.*
> *A tip when using the latter method;*
> *I assume Bob is unlikely to have a proper barrel vice, so I suggest he holds the barrel in a very sturdy vice with aluminium or hardwood jaw protectors (not leather).*
> *Lock up really tight, use a solid aluminium or bronze drift (approx. 150+ mm long), and a heavy hammer (a brickie's "block" hammer is ideal).*
> *On no account muck about with a light hammer or gentle strokes....therein lies distortion, bruising and disaster!*
> *Good Luck!*
> *Ray B.*

FRONT SIGHT DISASSEMBLY

ST

Troubleshooting the MCM

STEP 1

If your MCM is having troubles, first check that it is as per ex-factory condition - the MCM is inherently reliable and robust!

If your MCM is clean, properly lubricated, and nothing is broken (unlikely!) – the problem is undoubtedly the ammunition!

Clean it>> then check for any damage!

LIGHT FIRING PIN STRIKE

The most likely cause is 'crud' somewhere in the firing system and as such remedied by **cleaning.**

1. Check:
   - The area in the grip where the hammer spring resides
   - The hammer spring(#50)/hammer strut(#49) contact area for any binding
   - The hammer strut(#49)/hammer hinging for any binding
   - The hammer pin(#46)/hammer(48)/frame for any binding
   - The hammer(#48)/slide(#17)for any signs of binding. The hammer should only show signs of contact where the slide rubs against the forward face of the hammer – any sign of contact on the sides of the hammer indicate a problem.
   - The firing pin hole in the slide(#17), both from the rear and the front and the spring(#18) and firing pin(#19)
2. If all these are clean and not showing signs of binding: check the **hammer spring**
3. 'crud' in the chamber
4. 'crud' in and around the slide face

Another cause could be failure of the ammunition to fully seat into the chamber. This can be caused b:

- Crud in the chamber
- Dirty ammunition
- In my experience (*ST*), the MCM will feed any brand of reputable .22LR ammunition likely to be used for target shooting – try a packet of target ammunition (it does not have to be Eley Tenex, CCI Target or Federal Champion should work) – if these work, consider getting better ammunition than has been giving trouble.

The third reason is insufficient tension in the hammer spring (#50, fig1) – this can be caused by storing the pistol with the hammer cocked (or somebody trying a quick and nasty attempt at lightening the trigger pull) – either way, replace the hammer spring with a standard specification part.

INOPERABLE DISCONNECTOR

Easily checked – **with the pistol unloaded** and the hammer cocked, pull the slide back xxxx mm and operate the trigger. If the hammer operates, fix the disconnector operation!

The disconnector system **must** position the hammer bar such that the trigger bar does not contact with the sear unless the slide is sufficiently closed. If the slide is open more than a few mm the underside of the slide depresses the trigger bar so that it misses the sear.

In effect, the only way that the disconnector can be inoperable is if the leg of the trigger bar(#40) has been shortened – this is unlikely with normal wear-and-tear: whether this is the case or some

irresponsible person has shortened the leg, **replace** the trigger bar with one that correctly operates the disconnector system!

AMMUNITION FEED PROBLEMS

Ammunition feeding problems are normally due to:

- Incorrect ammunition – my experience has been that an MCM in good condition will feed almost any brand/type/age .22LR ammunition – remember that the MCM is designed for ISSF 25M events using standard velocity .22LR ammunition; avoid using high- or hyper-velocity .2LR ammunition!
- Dirt/crud in the chamber and/or feeding ramp (shame on you!)
- Dirty ammunition
- A damaged **magazine**

EJECTION PROBLEMS

Ejector

Extractor

The pistol will eject fired casing without an operable extractor – the extractor is normally only necessary when unloading the pistol when there is a case in the chamber.

1. The major cause of an inoperable extractor is 'crud' in and around the extractor assembly, or
2. A broken extractor(#23) or extractor spring(#21)

MAGAZINE

Make sure the magazine is **clean and lubricated**.

> Over the years I have 'cured' numerous semi-automatic pistols of feeding problems by the simple process of cleaning and lubricating the magazine/s – the 'extraneous contents' of some of these magazines has been astounding (apart from the expected 'crud' there have been dead beetles, metal filings, paper, small screws, cotton thread, spent #100 primers, etc.)!

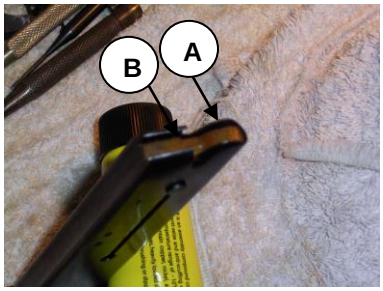
Like the rest of the MCM, the magazines are tough and reliable, but they can be damaged; usually by being dropped onto a concrete floor – a few drops (anybody can do this) should not cause any problem, but with enough mistreatment even an MCM can be damaged:

- Inspect the **magazine lips** for any obvious signs of damage or wear. Minor damage to the exterior of the magazine lips is rarely a problem – however, damage to the inside of the lips can cause problems.
- Inspect the magazine follower (#54, fig 1) for signs of damage or wear, particularly on its top surface
- Check the movement of the follower through its range of movement for any indication of binding (the 'as supplied' OEM magazines are normally slightly gritty in their movement of the spring and follower)

Magazine lips

- On my magazines, dimensions are:

A = inside of case guide (at highest point in front)	6.13mm
B = inside of lips (at rear) and parallel	5.70mm



Magazine Button

Given enough use, the magazine button (#55, fig 1) can wear – though this would take many 100,000s of rounds. While this part should be reasonably easily to source, it is also easily manufactured by any competent fitter & turner.

Magazine follower

Given enough use, the magazine follower can suffer wear in two areas:

- On top of the follower where the last round in the magazine rubs when it is stripped by the slide, and
- The fit between the follower (#54, fig 1) and the magazine button (#55, fig 1)

Wear on the top surface of the follower is usually uneven (this is not peculiar to the MCM) and can be addressed by refinishing the top surface to the original profile.

Wear in the hole in the follower where the magazine button locates is unusual (caused by a badly worn magazine button), but can be repaired by bushing the hole (industrial nylon or Teflon) and replacing the magazine button.

ST

MARGO

Cartridge	Magazine capacity, rounds	Barrel length, mm	Sighting radius, mm	Overall dimensions, mm, max	Weight, unloaded, kg, max	Sight
.22LR	7	98	120	193x120x38	0,8	fixed

May 2009

The first section of this document consists of pictures and English text taken directly from the MCM users manual.

- Part Numbers from fig 1 have been added to the Pistol Schematic Diagram (fig 2) and schematic part numbers

The second and third sections are additional material for the guidance of users of Margolin MCM pistols.