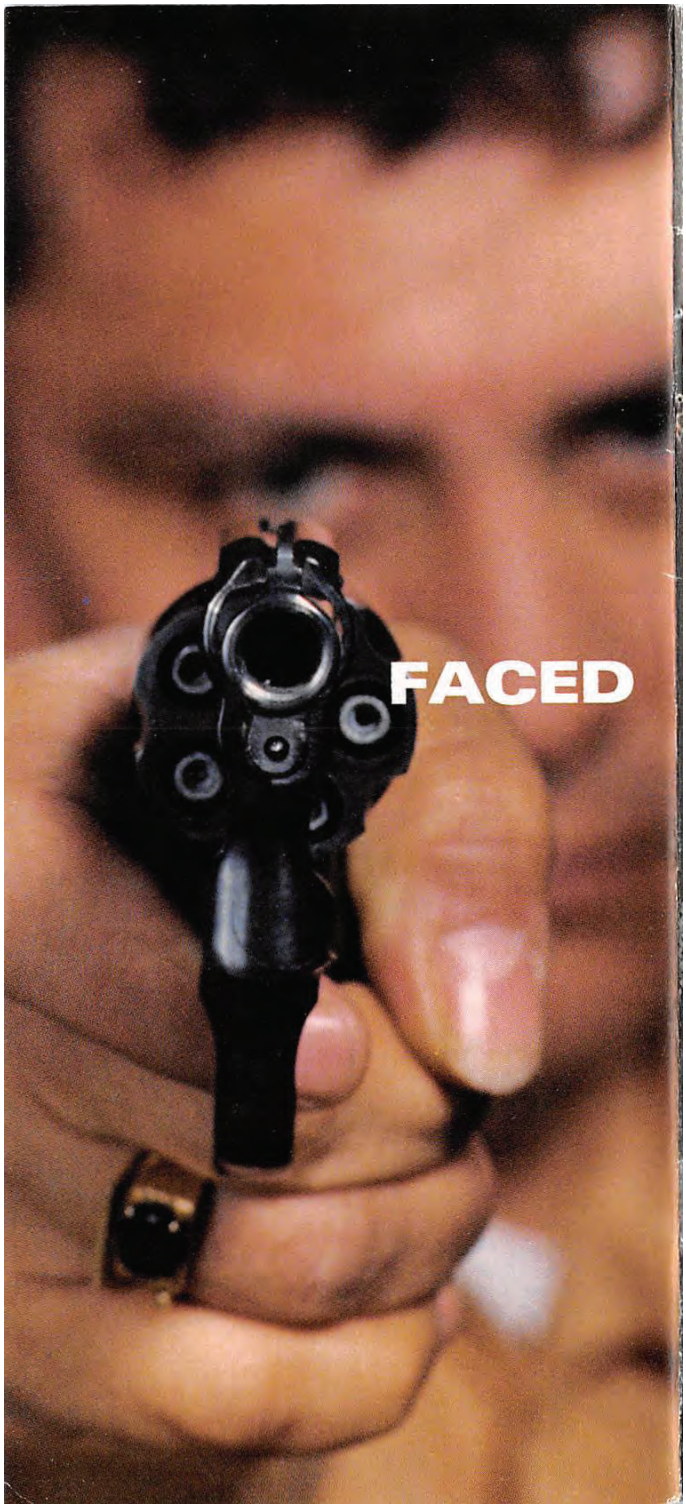
U.S. Department of Justice
Federal Bureau of Investigation

Revolver Preventive Maintenance Guide

Training Division



FACED WITH THIS!!!

WILL YOUR WEAPON WORK ?!

Contents

The Firearms Unit of the Training Division has prepared the "Revolver Preventive Maintenance Guide" to assist you in the professional care of your revolver. Proper maintenance of the firearm will ensure that it is functional when its use is necessary in the performance of your duties.

Maintenance Guidelines

Preventive maintenance is a systematic procedure of inspecting, cleaning, lubricating and storing equipment. The purpose is to keep equipment in serviceable condition, prevent breakdowns and assure maximum operational readiness.

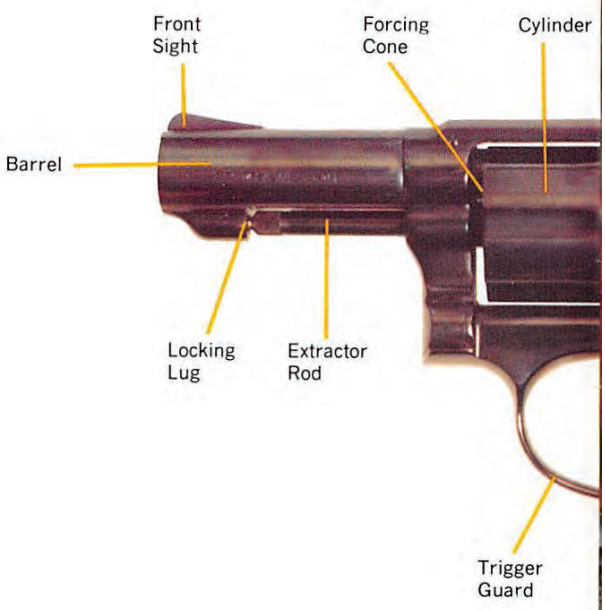
Your role in the performance of preventive maintenance service is to:

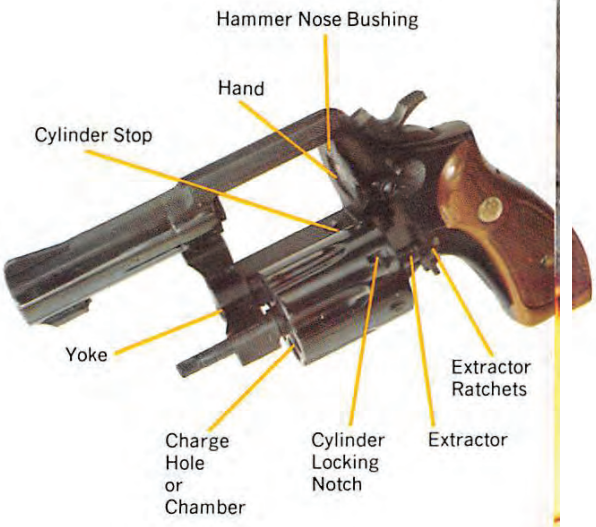
1. Safely inspect weapon and perform any needed authorized maintenance each tour of duty. (see Inspection Before Firing section)
2. Safely perform routine maintenance each time the revolver is fired.
3. Advise the Principal Firearms Instructor in your Field Office of any weapon malfunction and, upon his recommendation, ship via registered mail with a cover letter to the FBI Academy, Gun Vault.

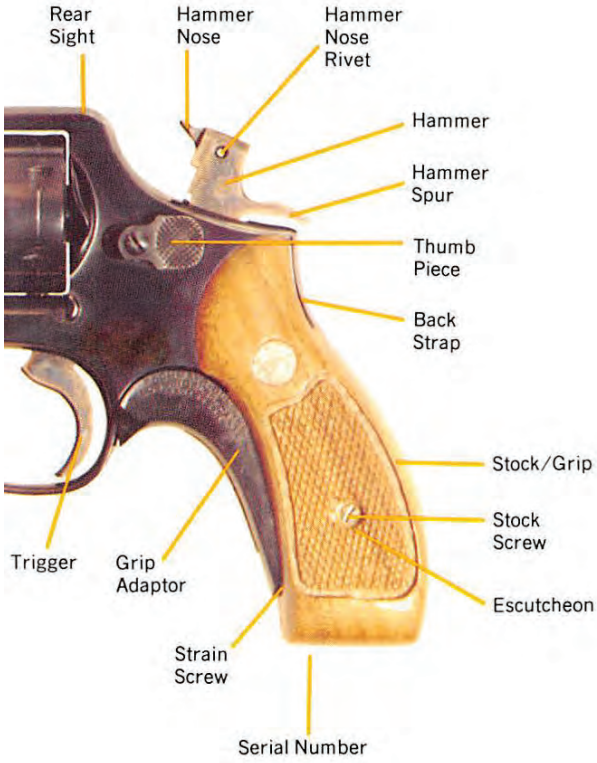
NOTE: (a) Alteration, repair or refinishing of Bureau-issued or Bureau-approved personally owned firearms is to be done only by an FBI Academy gunsmith. (MIOG Part II, Section 12-2)

(b) Special Agents are to bring all Bureau-issued and/or Bureau-approved personally owned handguns to the Gun Vault each time they attend an In-Service or conference at the FBI Academy. (MIOG Part II, Section 12-2)

Revolver Nomenclature







Revolver Specifications

Model No. 10
Smith & Wesson
.38 Special
Military & Police

FRAME: K, Medium, Square butt
CALIBER: .38 Special
CYLINDER: 6-shot capacity
counterclockwise rotation
BARREL LENGTH: 4" tapered
OVERALL LENGTH: 9¼" (23.5 cm)
WEIGHT: 31½ oz. empty with
grip adaptor
SIGHTS: FRONT - Serrated ramp
REAR - Fixed square notch
FINISH: Blue
MATERIAL: Carbon steel

Model No. 10-6 or 10-8
Smith & Wesson
.38 Special

FRAME: K, Medium, Round butt
CALIBER: .38 Special
CYLINDER: 6 shot capacity
counterclockwise rotation
BARREL LENGTH: 2½" heavy
OVERALL LENGTH: 7 7/16"
WEIGHT: 31 oz. empty with grip adaptor
SIGHTS: FRONT - Serrated ramp
REAR - Fixed square notch
FINISH: Blue
MATERIAL: Carbon steel

Revolver Specifications

Model No. 13 Smith & Wesson .357 Magnum/ .38 Special

FRAME: K, Medium, Round butt
CALIBER: .357 Magnum/ .38 Special
CYLINDER: 6-shot capacity counterclockwise rotation
BARREL LENGTH: 3" (7.7 cm) heavy barrel
OVERALL LENGTH: 8¼" (21.7 cm)
WEIGHT: 32 oz. empty with grip adaptor
SIGHTS: FRONT - Serrated ramp
REAR - Fixed square notch
FINISH: Blue
MATERIAL: Carbon steel

Revolver Operation

Six rounds of ammunition are fully inserted into the charge holes (chambers) of the cylinder. The cylinder is returned to its original position in the frame by pressing it firmly and carefully into place to make sure that it locks in alignment. The revolver is now ready to fire.

The revolver will function two ways: single action and double action. When fired single action, the hammer is cocked by one of the shooter's thumbs. As the hammer is drawn back, the hand rotates the cylinder counterclockwise, bringing a cartridge into alignment with the bore and hammer nose bushing. As the thumb cocks the hammer, the trigger is also drawn to the rear, engaging the sear and sear notch and locking it into the single action position. When the weapon is thus cocked, a trigger pressure of from three and one-half to four pounds (when adjusted to Bureau optimal standards) will release the action mechanism, permitting the hammer to fall forward. The hammer drives the hammer nose forward through the hammer nose bushing and detonates the cartridge. The cylinder stop securely locks the cylinder in position before firing. The trigger finger may then be released, and the trigger will rebound forward to the double action position. Cocking the hammer again with the thumb repeats the entire single action cycle. This cycle may be repeated until all the rounds have been expended.

The weapon is unloaded by pushing forward on the thumb piece located on the left side of the frame and gently pushing the cylinder out to the left. Once the cylinder has swung out from the frame, the extractor rod may be pushed rearward, extracting and ejecting the expended cases.

Revolver Operation

In double action firing, the thumb is not used to cock the hammer. The finger steadily pulls directly back on the trigger, exerting a pressure of from nine to fourteen pounds. This pressure (through the action) draws the hammer back almost to its full-cocked position. The pressure exerted on the trigger also rotates the cylinder, bringing a cartridge into alignment with the bore. Just before trigger release, the cylinder stop securely locks the cylinder in position. The hammer falls forward, the hammer nose strikes the cartridge primer and fires the cartridge. The finger may then be relaxed, permitting the trigger to go forward again to its double action position.

Check each day - make sure your weapon is functional. It's a tool of your profession !

Inspection Before Firing

WARNING: Make sure your revolver is unloaded before inspecting !

Before your weapon is fired it should be closely inspected for damage and function. This safety inspection, on which your life and other lives depend, can be accomplished in a few minutes. It is necessary to discover any mechanical breakdown or needed adjustments. Concentrate your attention on the following areas:

1. The frame should be checked for stress and hairline cracks. Check the hammer nose bushing. If it is obstructed, cracked, or loose, the revolver is unsafe. Any of these conditions could prevent the hammer nose from extending far enough to detonate the cartridge primer.

Inspection Before Firing

2. Visually check and feel the barrel with fingers for any looseness, obstruction, bulge or ringed condition, which indicate an unsafe barrel. Barrel bulges are sometimes more easily felt than seen. Barrels that are bulged or ringed must be replaced. Pits inside the barrel not only weaken the metal but allow gas to escape around the bullet, cutting down muzzle velocity and accuracy. The barrel should also be checked for lead deposits.
   The muzzle end should be checked for nicks or wear that could affect accuracy.
3. Work the extractor rod back and forth several times. If you detect any binding or find it difficult to operate, the extractor rod is bent or there is an accumulation of foreign matter in the internal cylinder assembly. If the extractor rod has loosened, you may hand tighten it as a temporary measure; however, the revolver should be returned to the Gun Vault at Quantico as soon as possible so that this may be corrected. Look underneath the extractor and ensure the extractor guide pins are present.
4. Cock the hammer into the single action position and inspect the hammer nose to ensure it is not broken. The "push off" test for correct hammer function should be conducted by field firearms instructors who have been trained in this procedure.

Cleaning Equipment

Cleaning equipment furnished by the Bureau has been found, by research and experience, to be best for achieving proper cleaning. Continual research is being conducted at the FBI Academy to identify the best equipment available.

Cleaning Rod

A cleaning rod is used for cleaning the bore and charge holes. The rod should be long enough to reach all the way through the barrel, and strong enough so the applied pressure will not cause it to bend. Cleaning rods are made from various materials; steel, stainless steel, brass and aluminum are the most common and desirable. Regardless of the type cleaning rod selected, if improperly used it may cause excessive wear or chips on the lands, especially at the muzzle. A cleaning rod should be inserted into the bore straight, and pushed through slowly.

NOTE: **Care should be taken not to mar the rifling at the muzzle; continual wear in this area is detrimental to the inherent accuracy of the weapon. A further caution should be exercised to prevent the brush or slotted tip attached to the cleaning rod from striking the hammer nose bushing.**

Bore Brush

Bore brushes can be of four types: nylon, bristle, brass or bronze, and stainless steel. The brass or bronze brush is recommended for cleaning the bore. Nylon is usually too soft and stainless steel too hard. The bore brush you use should be .38 caliber in size and not worn.
The bore brush is most effective when used with solvent. Dry use can cause the bristles to score or scratch the bore.

Do not reverse direction while the brush is actually in the bore or charge holes, as scoring or scratching may result. Instead, push the brush slowly all the way through the bore or charge hole before reversing direction. This will maximize the cleaning potential of the bore brush as well as lengthen its usefulness.

Cleaning Equipment

Slotted Tip

This device is used for pushing the patches through the barrel and charge holes of the cylinder. Care should be exercised in its use, ensuring that it is not allowed to strike the hammer nose bushing.

Patches

Patches are either round or square and should be made of a soft, white, absorbent material. Using a cleaning rod with the slotted tip affixed, push a dry patch slowly through the bore until one comes out clean and dry. Apply this same procedure to the charge holes in the cylinder. During cleaning the cylinder should be supported with the hand while in the open position.

Cleaning Solvent

There are many commercially available cleaning solvents that do an excellent job of removing both powder residue and minor metal fouling. The Bureau uses Hoppes No. 9. Such a solvent is needed to loosen and remove powder residue, as well as copper and lead fouling.
Do not confuse cleaning compounds with solvents. A cleaning compound is a mild abrasive paste used for excessive metal fouling and is not to be used on Bureau weapons.
Avoid allowing the solvent to come into contact with the weapon's stocks. Also make sure the solvent is thoroughly wiped from the weapon before reloading, especially from under the extractor, in the hammer nose bushing, and on the recoil plate.

CAUTION: **Avoid the use of excessive amounts of solvents in maintenance procedures. Solvents should not be allowed to get into the action of the weapon, because**

over a period of time, gumming will occur and adversely affect the weapon's performance.

Solvent Brush

A nylon toothbrush with solvent can be used to clean areas of the weapon that a metal bristle brush cannot reach. A solvent-moistened toothbrush works well on the forcing cone, underside of the top strap, face of the recoil plate, underside of the extractor, the face and exterior of the cylinder and any area of the frame where a metal brush might be unsuitable.

Compressed Air

The Bureau does not recommend compressed air for handguns because benefit is counteracted by some moisture presence even in those air lines equipped with moisture traps. Moisture from condensation can introduce a film of water, coating your weapon and entering the mechanism and causing rust. However, for some Bureau shoulder weapons whose metals and finishing coats are not as susceptible to moisture, compressed air use can be beneficial in the cleaning process. Lint, dirt, oil, and solvent are easily removed by short blasts of compressed air.

Dry Brush

A nylon brush such as a toothbrush makes the cleaning process easier in such areas as the barrel forcing cone, at the rear of the frame behind the cylinder, under the extractor, the checkering of the stocks (where solvent is not desired), and when removing lint and minor fouling from the front and rear sights, trigger, etc. Additionally, lint and fuzz accumulate in the holster and can be removed with a dry brush.

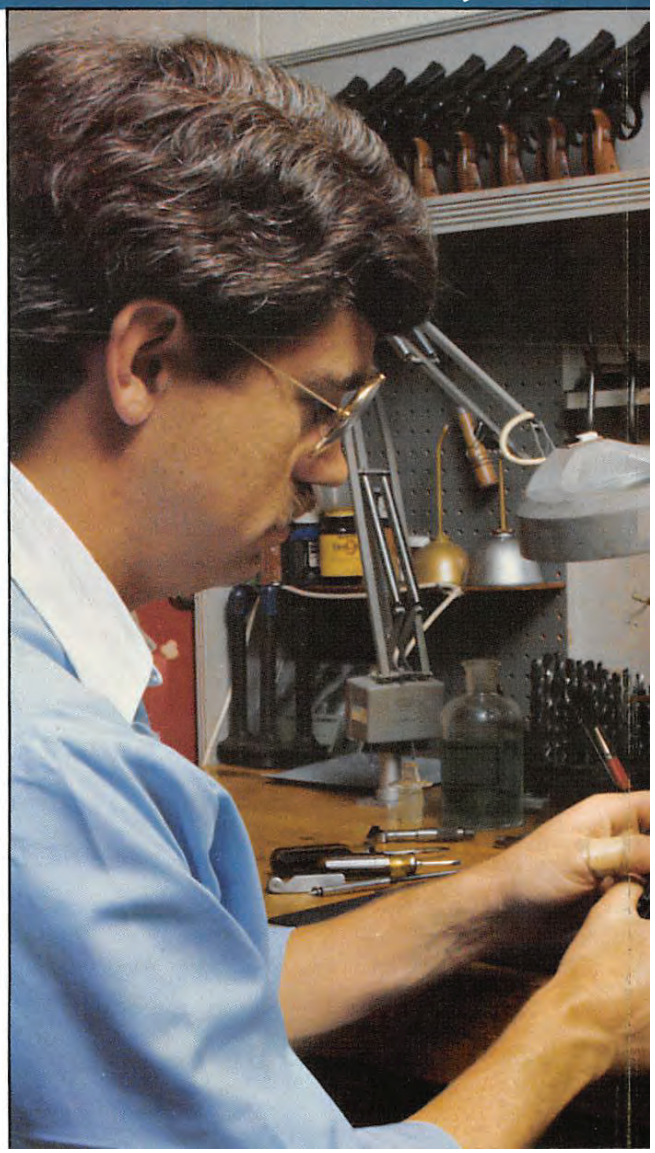
Brass Cleaning Tool

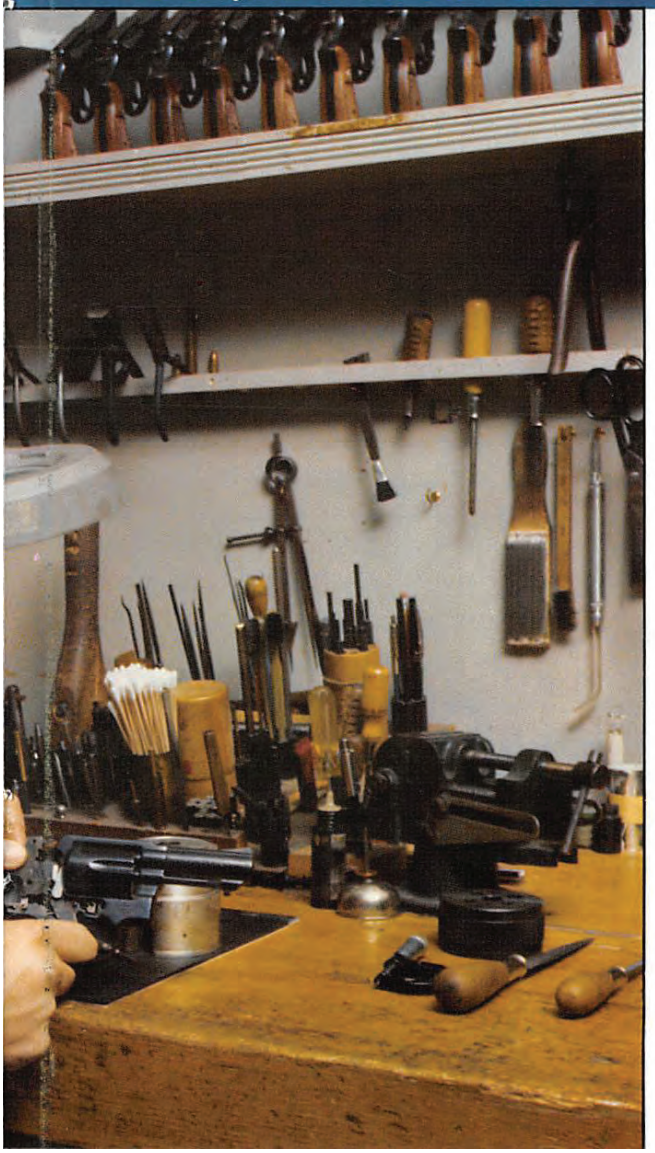
Scrubbing with a brush and solvent is effective in most cases. Heavy accumulations of lead at the forcing cone area and at the top strap are removed easily with a brass cleaning tool of the type supplied by the Quantico Gun Vault. Judicious scraping with such a tool will remove these accumulations. Remember, it's the leading that needs to be removed, not the bluing ! This point cannot be overstressed. The brass tool is softer than the weapon metal and thus does not scratch or damage the weapon metal.

Screwdriver

A screwdriver of proper size should be used for corrective tightening. Bureau weapons are to be tightened correctively by field firearms instructors. A small-sized screwdriver allows for maximum tightness at minimum torque. Large screwdrivers would allow excessive torque which could result in the threads of a screw being stripped. Correct blade size prevents mutilation of screw head slots.

GUN VAULT, QUANTICO, VIRGINIA





Cleaning Equipment

Cleaning Cloth

Cloth is necessary equipment for cleaning the weapon and protecting it from hard surfaces during the cleaning process. Whether it is used in tour-of-duty maintenance, the final steps of post-firing maintenance,or as a simple protection from a hard surface, it should be clean. Too often the effort to keep the weapon clean is circumvented by the application of dirt, grease, fouling, etc., from a soiled cloth. Lint-free cloth is another factor. The Bureau furnishes bleached cheesecloth. The less lint, the less chance there will be of a mechanism malfunction from lint.

CAUTION NOTICE

Use of Aerosol Spray Lubricants

The use of aerosol spray lubricants can contribute to ammunition failure. Tests by the FBI Academy Gun Vault have indicated that virtually all aerosol spray lubricants have penetrative characteristics. These solvents will carry lubricants into very tight areas with the capability of penetrating the primer seal of a cartridge and thereby creating a break-down in the primer compound and powder, causing the round to misfire. Lubrication of the weapon should always be done with a patch or cloth.

WARNING: Any person who used a spray lubricant on his/her weapon should immediately replace all cartridges which may have been in contact with the lubricant. Never lubricate or oil ammunition !

Frame

Use a dry brush and brush off any fouling that appears on the exterior of the frame. Next brush the inside of the frame, being careful to remove lead, powder and carbon residue from the hand area. Also brush around the forcing cone. Excess accumulation of carbon can be removed with the brass cleaning tool, solvent and solvent brush. Do not allow solvent or oil to get into the internal parts of the revolver through the hammer nose bushing and hand slot ! With a cloth or patch moistened with solvent, clean the exterior of the frame.

Bore

Using a cleaning rod long enough to reach all the way through the bore, thoroughly clean the bore with a brush moistened with cleaning solvent.

CAUTION: Be careful of the rifling in the crown of the muzzle and of the hammer nose bushing.

Replace the bore brush with a slotted tip and affix a clean dry patch. Run it carefully through the bore and repeat the process with clean patches until the bore is clean and dry. Apply only two to four drops of oil to a clean patch and lubricate the inside of the bore. Do not leave excess oil in the bore.

Cleaning

Cylinder

With solvent and solvent brush, remove all carbon and fouling from the face and rear of the cylinder. Special attention must be given in cleaning the underside of the extractor face. Dirt and residue beneath the extractor can make it protrude from its recess and cause cylinder closing and rotation malfunctions. Next clean the cylinder charge holes in the same manner as you did the bore. Very lightly lubricate the charge holes.

CAUTION: Do not leave the underside of the extractor face oily. Keep it clean and dry.

To prevent rust, wipe down the exterior metal surface with a lightly oiled, lint-free clean cloth.

After cleaning the revolver, inspect it again in three areas:

- Check the barrel for bulges
- Ensure the extractor guide pins are present
- Ensure the hammer nose is not broken

Daily Maintenance

Exposure to Inclement Weather

If your service revolver has been exposed to inclement weather, rain, mist, snow, etc., or excessive dampness, it should be wiped dry with an oily or silicone cloth as soon as you go off duty and should not be replaced in the holster until the leather has dried. You can be prepared to meet these conditions by keeping an oil-dampened or silicone cloth in an appropriate container at home or at work.

Fingerprints and Perspiration Stains

Body acids, salts, etc. found in perspiration attack metal and will, in time, cause it to rust and pit. Daily handling of the weapon (drawing and returning the revolver to the holster, loading and unloading the weapon) transfers the corrosive agents from your hands to the service revolver. In addition, body chemicals are brought into contact by other than the deliberate and necessary handling of the weapon. Frequently, the back strap is used incorrectly as a hand rest or unconsciously gripped with the hand. Thus, if a weapon is not periodically wiped clean, the salt and acid residues left on the revolver will gradually eat away the bluing and the metal surface. Therefore, the daily practice of wiping the revolver with a silicone or lightly oil-dampened cloth is recommended.

Revolver Holster

Preventive maintenance must include a periodic examination of the holster for possible accumulation of carbon, lint, dust and perspiration. These foreign particles absorb and retain further moisture. The corrosive effect of the foreign matter and moisture can be observed by the rust accumulation on the barrel and frame of an improperly maintained revolver that has been left in its holster for an extended period of time. Wiping the holster interior and separate storage of the weapon and holster are the preventive measures required. The opening at the bottom of the holster should be free of obstructions. If there is a blockage, clean out the foreign matter. Failure to clear this opening may cause condensation to accumulate in the holster which corrodes the revolver.

Rust

If you maintain professional care of your service revolver, you will never have to contend with rust. Should a light film of rust develop, remove it by rubbing briskly with a coarse textured cloth moistened with solvent or oil. If the rust is so heavy in spots that this action is unsuccessful, arrangements should be made to send the revolver to the Gun Vault at Quantico, Virginia.

Remember that stainless steel revolvers are not rust proof, only rust resistant. They should be cleaned and maintained in the same manner as blued revolvers.

Exposure to Unusual Climates

Special care in cleaning and lubrication must be observed when extremes of temperature, humidity and atmospheric conditions are present or anticipated. Proper cleaning, lubrication and storage not only ensure proper operation and functioning but also guard against excessive wear of the working parts and deterioration of the revolver.

Extreme Cold Climate

In climates where the temperature is extremely cold (below freezing), the revolver must be kept free of moisture and oil. Moisture and oil will freeze or congeal, causing working parts to freeze or to operate sluggishly.

If the revolver is taken into a warm room, it must be cleaned and dried as soon as it reaches room temperature, after condensation has occurred. If not, these drops of moisture will cause rust, or will freeze when the weapon is taken outdoors. When the revolver is outside, pay particular attention to protecting it with proper cover. This cover will keep the operating parts of the revolver protected from snow, ice or moisture. Provide as much protection as possible for all parts of the revolver.

Hot, Dry Climate

In hot and dry climates, the film of oil which is necessary for the operation and preservation of the revolver will dissipate quickly. Inspect the revolver daily. Perspiration from the hands contain acids and salts which are conducive to rusting. After handling the revolver, clean, wipe dry and restore the oil film by using an oil-dampened rag or silicone cloth. Then separate the weapon from the holster to allow body moisture absorbed by the holster to evaporate.

CAUTION: "Sandy terrain" - clean and keep thoroughly dry. Do not lubricate. Even a light coat of oil will attract sand and dust, potential causes of malfunction. When out of sandy terrain, clean and oil.

Hot, Humid Climate

In hot, humid climates the revolver must be cleaned at least daily to protect it from moisture and ensuing rust. Store weapon separate from holster during non duty hours.

Saltwater Climate

Inspection for corrosion should be made daily. Saltwater and salt water atmosphere have extreme and very rapid corrosive effects. Moist and salty atmospheres have a tendency to emulsify oils and destroy their rust preventive qualities. In these conditions the operator should clean and lubricate the revolver daily.

The holster interior and exterior should be wiped off daily. The revolver should be stored separate from the holster during non duty hours to permit moisture evaporation.

The Dropped Weapon

Weapon neglect or abnormal handling of the revolver affects its serviceability. Dropping your weapon may cause damage which could render the weapon inoperative or make it inaccurate. Any weapon that has been dropped should be examined by a firearms instructor as soon as possible. Remember, the shock may have sprung, bent, broken, or damaged a working part of your revolver.

With the weapon unloaded, the following should be checked for defects or needed adjustments.

Sights

Inspect the edges of both the front and rear sights for deformation. With revolvers that have adjustable sights, make sure the rear sight mechanism is secure and the rear sight is not bent.

Remember a functioning weapon that is not accurate is unsafe !
Sight the weapon in at the first opportunity.

Hammer Spur

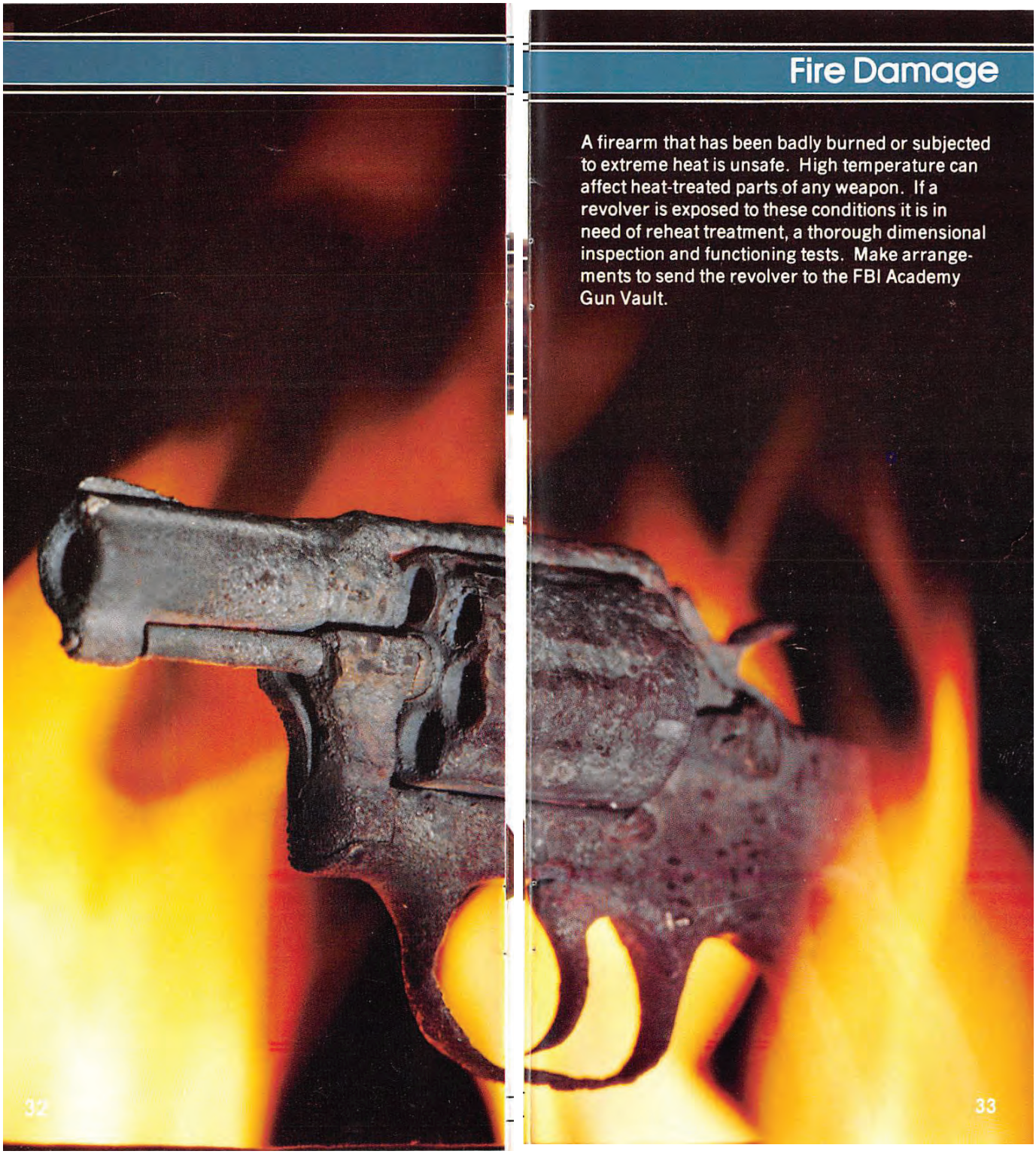
Visually inspect the hammer spur for deformation. If the clearance between the hammer spur and frame is inadequate, it can prevent the weapon from firing either single or double action.

Trigger Guard

Visually inspect the clearance space between the trigger guard and the trigger. If the trigger guard has been damaged, it can jam the trigger, preventing it from firing the weapon.

Sideplate Screws

Visually inspect sideplate screws to determine that none are missing or loose. Missing or loose sideplate screws can prevent the cylinder from opening and closing, thus prohibiting reloading.



Fire Damage

A firearm that has been badly burned or subjected to extreme heat is unsafe. High temperature can affect heat-treated parts of any weapon. If a revolver is exposed to these conditions it is in need of reheat treatment, a thorough dimensional inspection and functioning tests. Make arrangements to send the revolver to the FBI Academy Gun Vault.

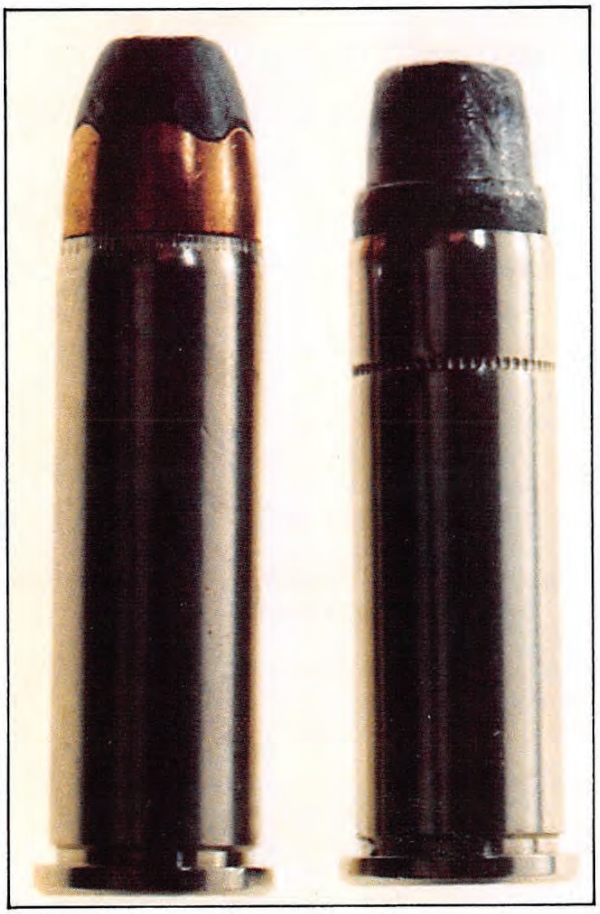
Repairs

Alteration, repair, or refinishing of Bureau-issued or Bureau-approved personally owned firearms is to be done only by an FBI Academy gunsmith. (MIOG, Part II, Section 12-2)
Only these Bureau gunsmiths are authorized to make internal repairs or adjustments to the above stated weapons. When service is needed, as confirmed by the Principal Firearms Instructor in the pertinent field office, a cover letter should be prepared with one copy accompanying the packaged firearm and the original and one copy sent separately by regular Bureau mail. The firearm should be shipped via registered mail to:

Assistant Director
Attention: Room 110 DN Building
FBI Academy
Quantico, Virginia 22135

Ammunition

Only Bureau-issued ammunition will be carried in weapons of Special Agents of the Federal Bureau of Investigation !
(MIOG, Part II, Section 12-2)



Ammunition

Inspect your ammunition for defects:

- Bullet seating
- Corrosion
- Crimp in the case
- Deformed bullet
- Dents in the case
- Defective jacket

Inspect Primer:

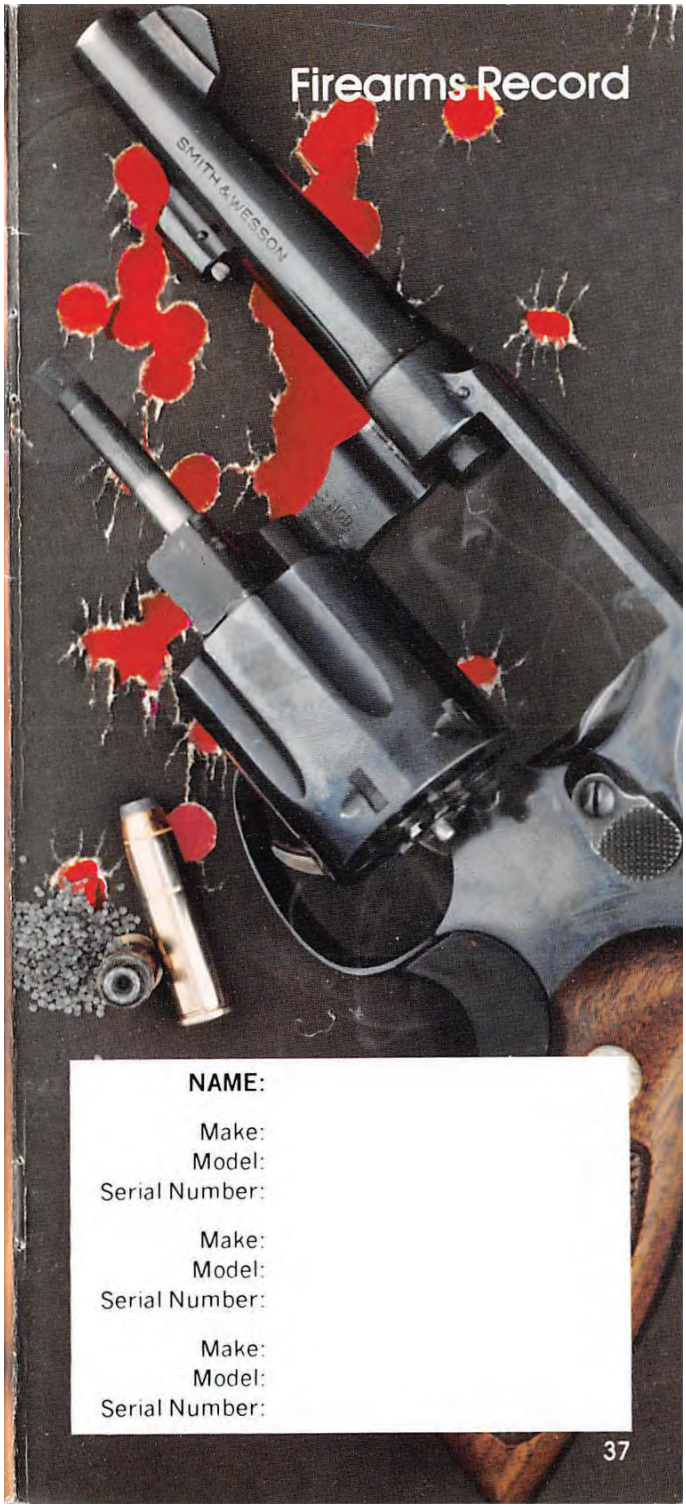
- Is it there?
- Is it flush?
- Is it damaged?

The recommended procedure for loading the weapon with issued ammunition is as follows:

- Inspect the ammunition that you will be loading and carrying with you.
- Load six of the rounds into the chambers, making sure they drop in easily.
- Replace any round that does not drop in easily.
- Remove these six rounds from the weapon and place them into your reloading device.
- Do this until you have the number you desire to carry and then load your revolver.

This procedure will eliminate the possibility of having rounds in your reloading device which will not fit easily into the chambers.

WARNING: Never lubricate or oil ammunition. Any ammunition that has come into contact with solvent, spray lubricant or oil, should immediately be replaced. Solvent is very penetrating and can carry the lubricant or oil into areas not easily reached by oil alone. Solvent and oil can penetrate the sealant around the primer, contaminating the priming compound and causing misfires.



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