

Silenced Ruger Pistol

By Clyde Barrow

This silenced pistol design is a simplified version of the AWC Silenced Ruger manufactured by S & S Arms Co. The AWC unit is available to Class 3 dealers for \$225 and retails for \$275, plus a \$200 Federal Transfer Tax when sold to private individuals. Included is a reprint of the instructions that accompany the pistol. Qualified buyers should contact the manufacturer for further information.*

The basis of this unit is a Ruger RST 22 autopistol, with a 4-3/4" barrel. The Ruger was chosen for both its reliability and relatively low mechanical noise. An earlier version of this design was used by the OSS in W W II and is still available to CIA and National Security Agency (NSA) personel. This early version was built on a High Standard pistol and contained a compressed stack of brass screen washers instead of threaded copper and fiberglass.

All measurements and procedures are based on the S & S drawing and they may differ slightly from the actual unit. Note that the instructions call for two sizes of spanner wrenches. This has been simplified to the use of a large screwdriver and hand tightening. If taps and dies aren't available, a system of shims, collars and set screws may be substituted. This type of attachment is covered in the short barreled silencer article in PMA, page 58. If you don't have access to a lathe, a large drill may be clamped into a vise. Support the other end of the work with a wood block or similar steadyrest.

The simplest method is to drill the 4 rows of holes in the barrel and install a removable silencer mount on the muzzle. These mounts are 1/2"x20 male thread at the front. They are available for \$25 from D.A.Q.* Mounts for several other guns are also available. The bushings and aluminum tube work can be farmed out to a machine shop.

Materials Used

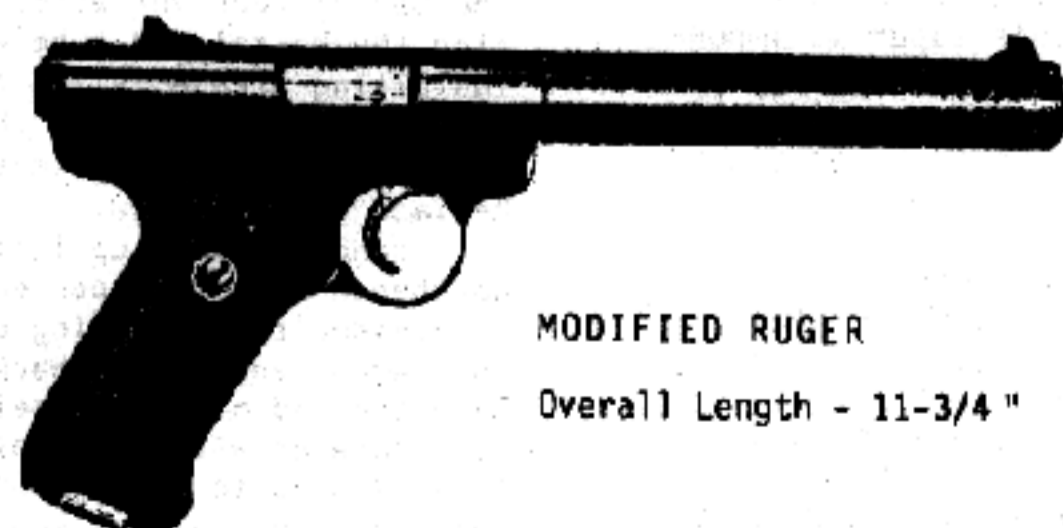
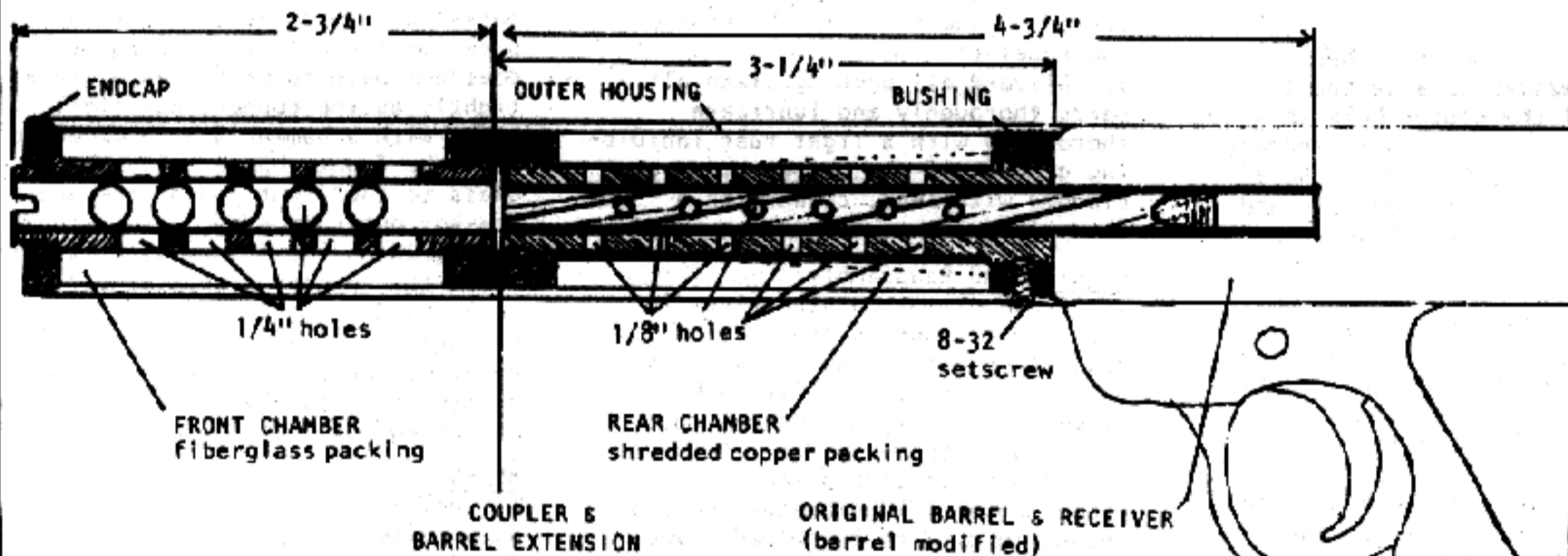
- 1 - Ruger RST 22 cal. pistol w/4-3/4" barrel
- 1 - 7/8" ID-1" OD brass tube; sold in most hardware and plumbing shops as a toilet tank overflow tube, about 12" long.
- 1 - 2-3/4" long aluminum tube 1/2" ID,

- 1/2" OD
 - 2 - 1" OD washers
 - 2 - Drills - 1/8" and 1/4" diameter
 - 3 - Taps; 15/16-5/8 and 3/8
 - 3 - Dies; 15/16-5/8 and 3/8
 - 2 - Threaded bushings
 - 1 - Set screw w/allen wrench.
- The above taps, dies, bushings

and set screw may be of any thread pattern you choose and the sizes can be altered to fit the materials available.

Packing Material

See enclosed S & S instructions for description of packing material and procedure.



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Construction Procedure

A. Disassemble the pistol and clamp the receiver-barrel assembly in a lathe.

B. Measured from the front of the receiver, the first 3/8" of barrel is turned down to 5/8" OD. The remainder is turned down to 1/2" OD.

C. A piece of 3/4" ID aluminum tubing is cut to 2-3/4" long and is turned to a 1/2" OD.

D. Thread both ends of the aluminum tube and the front of the barrel with a 1/2" die. The thread pattern is up to you. Use 1/2-20 threads with the D.A.Q. mount.

E. Thread the 5/8" OD area of the barrel and install a 3/8" long bushing - 5/8" ID, 15/16" OD.

F. Drill and tap the bushing for a 8-32 set screw. Drill a shallow corresponding hole in the bottom of the barrel.

G. Cut a screwdriver slot in the front end of the barrel extension and join the barrel and extension with a 5/8" long bushing - 1/2" ID, 7/8" OD. This bushing is threaded on the inside only. The outside should slip snugly into the 7/8" ID brass tube.

H. Drill four rows of holes in both the barrel and barrel extension. Six 1/8" holes per row in the barrel and five 1/4" holes per row in the extension. Refer to drawing for placement of holes.

I. To build the endcap, reduce a 1" washer to 15/16" OD on one side and taper to 7/8" on the other. Solder this washer to a second 1" washer. Drill the center hole to 1/2" ID and thread. Use a file to serrate checker or knurl the edge of the 1" washer. This allows a good grip and eliminates the need for a spanner wrench.

J. Screw the endcap onto the barrel extension. Measure the distance from the front of the receiver to the front of the tapered area on the endcap. This distance is about 6", but will vary with each individual installation.

K. Cut the 1" OD brass tube to the length arrived at in step J. The inside rear of the tube is threaded to fit the bushing. Bevel the inside front of the tube until the tapered edge of the endcap will slip snugly inside. This taper is important because it aids in realignment of the tube mounted front sight when the unit is reassembled after each repacking.

L. Follow the instructions below for packing and assembly.

M. If additional sound or flash suppression is needed, an endcap w/baffles may be installed. Construct and mount the unit as detailed in the AR 7 silencer plans on page 58. The endcap may also be based on the MAC design-see (The

Removable Endcap") elsewhere in this issue.

Suppressor Disassembly:

1. After field stripping the pistol, remove the trigger-frame assembly (it slides slightly to the rear) and the bolt. Using the allen wrench in the end of the packing guide (see drawing), remove the 8-32 Allen set screw from the bottom of the suppressor housing.

2. Use the spanner wrench to unscrew the Front Assembly Nut.

3. Clamp the suppressor outer housing in a vise. It is recommended that either a block of wood drilled with a 1" hole, two blocks of wood with a "V" slot, or several layers of rubber inner tube be used to prevent marring of the blueing.

4. Using the Packing Guide barrel extension spanner, unscrew the barrel extension. It will unscrew about 1/2 inch.

5. Remove the barrel extension. If stuck, you may screw the spanner wrench onto the front of the barrel extension to give you a handle to pull with. **DO NOT** use pliers, as the barrel extension is aluminum. You will note that the coupler remains attached to the rear of the barrel extension. Do not separate the two.

6. Unscrew the receiver from the suppressor tube. This may require a bit of force, and it has been found that a rod (or large Phillips screwdriver) makes a good wrench when inserted in the holes in the rear of the receiver.

7. Discard all packing. Clean all parts thoroughly and lubricate thoroughly with a light rust inhibiting grease. If the barrel holes are plugged with lead, clean with a sharp instrument, such as an icepick.

Packing and Reassembly:

1. Punch or cut out the rivet in the copper scouring pads. Unfold the pads. Each pad is made of a sleeve of copper mesh about five inches diameter and slightly over a foot long. Cut crossways into five pieces and then twist each piece into a "rope" about 1/4" diameter and 7-8 inches long. With 2-1/2 pads, you will have twelve of these copper "ropes."

2. Screw the suppressor tube onto the barrel-receiver after lubricating the barrel and tube with a rust inhibiting grease. Align the index marks on the bottom of the housing and receiver near the setscrew hole. Replace the setscrew.

3. Stand the unit upright on the workbench with the open end of the suppressor tube pointing up. Insert the narrow end of the packing guide into the end of the barrel (the Allen wrench will be pointing up). This is used to guide the copper packing into the rear suppression chamber.

4. Wrap one of the copper "ropes" made in step 1 around the packing guide and push in with the white plastic tube supplied (1/2" PVC water pipe). Hammer the end of the plastic tube to drive the copper rope in as far as possible. After partially hammered in, it may be necessary to temporarily remove the packing guide. Packing the copper in tightly is critical to the effectiveness of the suppressor, and remember that you are going to pack 12 ropes (2-1/2 copper scouring pads) in the rear chamber alone in a similar manner, pack in the other 11 ropes of copper. After the 2-1/2 scouring pads have been hammered in, you should still be able to see portions of the threads on the end of the barrel. Note: 2-1/2 to 2-3/4 pads appears to be optimal. Never use over 3 pads.

5. Looking down the bore of the pistol, you may have seen several small wisps of copper packing protruding through the holes in the barrel. Several passes of an oiled brass bore brush should clean out most of these strands of copper. The rest will disappear after the first shooting.

6. Install the coupler/barrel extension assembly. Use the spanner on the packing guide to tighten the assembly.

7. In a manner similar to step 4 above, pack the fiberglass around the barrel extension in the front suppression chamber. The fiberglass does not have to be packed quite as tightly as the copper, but light blows with a hammer are recommended. Fill the front chamber with fiberglass to the front end of the suppressor outer housing.

8. Screw on the front assembly nut using the spanner wrench provided. Screw hand tight only.

9. Shoot the weapon to check the point of impact, and adjust the sights if necessary. Point of impact may change slightly with repacking.

NOTES:

1. NEVER use a thread sealant (such as Loctite).

2. Factory repacking service is available, but shipping the weapon requires transfers. Repacking can be done while you wait, if you bring the weapon.

3. Repacking kits (copper pads and fiberglass) are available for \$2 ppd. Obtaining the materials locally is cheaper.

AWC SERIES SOUND SUPPRESSED RUGER PISTOLS -

Description: The unit consists of a standard Ruger model RST-4 pistol in cal .22LR with an integral sound suppressor. The barrel of the pistol has been modified for use with the sound suppressor by having been

drilled to port hot gasses into the rear suppression chamber (see drawing). By bleeding the gasses within two inches of the chamber, velocity is slightly reduced, keeping the bullet subsonic. The rear chamber is packed with dense shredded copper, which cools the hot gasses quickly reducing both their temperature and volume. Copper has been found to be exceptionally effective as a heat conductor. The front suppression chamber is packed with fiberglass and acts similar to a "Glasspack" automobile muffler, helping to further muffle the report, expand the gasses, and spread out the sound pressure peak. The suppressing principles are not new, but the combination is effective. The barrel extension coupler and front assembly nut both help keep the outer tube (which carries the front sight) concentric with the bore of the barrel.

Ammunition: Because of early porting of the gasses in the barrel reducing recoil, the recoil spring of the pistol has been modified by having three turns removed from the spring. This functions well with all types and brands of ammunition with the exception of CCI Standard Velocity, which occasionally fails to eject. All other CCI ammunition works well. Velocity measurements range from 825 f.p.s. to 875 f.p.s. (Standard & HV) in the suppressed weapon as compared to 1,050 to 1125 f.p.s. in an unmo-

dified pistol. The velocity of the CCI Stinger ammunition is reduced from 1,440 to 930 f.p.s. There is a slight loss in effectiveness of the suppressor using HV ammunition, and we recommend standard velocity .22LR ammunition for backyard and basement shooting.

Sights: The standard model suppressed Ruger uses the original fixed sights which came with the pistol. The front sight is attached to the suppressor housing, and is normally supplied somewhat high, making the weapon shoot low. This is done in case the purchaser wishes to install adjustable rear sights. If the standard sights are to be used, the front sight may be lowered by filing during the sighting in process. Windage can be adjusted by drifting the rear sight. We can provide adjustable sights at a slight additional charge if ordered at the time of ordering the weapon. There are many excellent sights which can be field installed, including Micro and Miniature Machine Company (MMC) adjustable rear sights. Interestingly, the MMC sight requires a front sight lower than the original non-adjustable sight. Sighting radius on the suppressed pistol is approximately 10", and the suppressor adds only about three inches to the overall length of the pistol.

Cleaning: It is recommended that only minimal cleaning of the weapon be

performed between repacking intervals. Routine cleaning should consist of using a brass brush dipped in solvent to scrub the bore, followed by a dry patch and a lightly oiled patch. The receiver and bolt can be cleaned with powder solvent and lightly oiled. We use WD-40, and have been satisfied, although any light oil will work. Whenever repacking of the sound suppressor is performed, then a thorough disassembly and cleaning of the weapon is recommended.

Loss of Efficiency: With time, minute lead shavings and powder residues will obstruct the ports in the barrel leading to the rear suppression chamber, and the weapon will become noisy, requiring repacking. It is estimated that repacking will have to be performed every 400-800 rounds. Materials are available locally, and after the first time about an hour will be required. For owners in the Albuquerque area, we can provide this service at the factory for a nominal fee.

Packing Materials: Total cost will be slightly less than a dollar. The shredded copper for the rear suppressor chamber is available at most supermarkets as "Chore Girl Pure Copper Scouring Pads". Buy three, as you will use 2-1/2 pads. Cost as of April 1977 was 20¢ per pad. DO NOT USE STEEL WOOL; IT BURNS. For the front suppression chamber you will use a piece of one inch thick fiberglass about 6" by 15". This is available in hardware stores in 6" wide rolls for insulating pipes.

THE REPLACEABLE ENDCAP

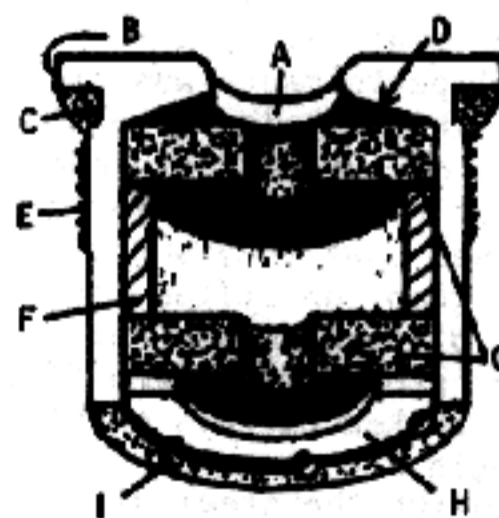
by Clyde Barrow

This design for replaceable silencer endcaps was developed by Mitchell Werbell, head of Military Armament Corp (MAC). The design resulted from silencer research conducted during the Vietnam era.

The endcap contains two hard rubber baffles, a spacer and a retaining washer which is staked in place. The undersized holes in the baffles become enlarged and ineffective after several hundred rounds. The unit is then removed by hand and a fresh replacement is installed. The worn caps can be discarded or may be returned to an arsenal for rebuilding.

Replacement baffles can be made from amber squeegee rubber, available from art supply shops and janitorial suppliers.

INTERIOR VIEW



ENDCAP COMPONENTS

- A. Hole 5/8" ID
- B. Knurled Rim 1-3/4" OD x 3/32"
- C. Undercut 1-7/16" OD x 1/8"
- D. Undercut For Baffle Expansion
- E. Male Threads 1-9/16" x 20 NC x 3/8" long
- F. Spacer - Aluminum Tubing 1-1/4" OD x 1" ID x 1/2" long
- G. Plastic Baffle 9/32" ID x 1/4" thick x 1-1/4" OD
- H. Aluminum Retaining Washer 1-1/4" OD x 3/4" ID x 1/16" thick
- I. Indentation From Staking Punch (1 of 6)

These caps will fit tubing with the following specs: 1-3/4" OD - 1-1/2" ID (1/8" wall) Threads-20 per inch NC - (thread depth 1/32") Available in .45, 9mm, or .350 sizes, the caps are sold to anyone for \$17.50 each or \$150 per dozen

plus UPS shipping. (you can mix sizes for a dozen.) Order from: Tim D. Bixler Firearms Co. Box 1455, Gretna LA 70053 Specify: MAC Suppressor Wipe Assemblies and include caliber desired when ordering.