

M14 Maintenance, *part one*

[barrel cleaning]

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In most applications where there is a specific torque requirement on a fastener, meaning those outside shooting, the function of setting a precise amount of tension on a nut or bolt is normally to prevent metal fatigue and damage to the parts.

This function of setting torque does apply to rifle owners, but is relegated mostly to the armorer (for instance, several parts on an AR15 have specific torque requirements).

What we're using torque for, mostly, is to set a consistent amount of pressure against action screws and other "flexible tension" fasteners.

Note: M1A™ is a trademark for the Springfield Armory® version of this rifle. I prefer to use the "M14" label to identify this rifle type. While it's true that an M14 may be a select-fire weapon, I'm obviously talking about semi-automatic-only competition rifles in this.

This subject -- maintaining an M14 -- has been done to death. Why do it again? Because it's important. In discussions with gunsmiths all across the country, it's plain that much of their returned work is the result of customer negligence and/or maintenance mistakes. (Ask an auto mechanic the same and get the same answer.)

It's tough to do a "definitive" article on the subject of caring for an M14 because there's so many different opinions as to how and what needs to be done, and when it needs doing. So I did three articles that provide as objective and "safe" a routine as I could assemble, and I'm sure I probably still left some things out. If we take all the recipes and theories and roll them together, they all reach the same end: *everything* suggested by *everyone* is done to keep this rifle shooting well for the longest time possible. About the only real mistake you can make is doing nothing.

Setting Up

Cleaning an M14 barrel is just like cleaning any other barrel, but with a few significant details added on.

An M14 acts like a sieve compared to a bolt-gun: there's a lot of places for solvent to run, and we need to restrict it to the bore. The easiest way to keep solvent from getting into the gas system, trigger assembly, bolt, and onto the bedding is to set the rifle upside down and with the muzzle lower than the action. It's not difficult to purchase, or concoct, a suitable cradle. Just make sure it's of an adequate length to preclude having to contact the handguard to rest the rifle.

Even though gravity pretty much prevents any leakage of solvent now that the gun's upside down, still wad up a rag inside the action area to catch the spray from a bore brush. By the way, those little chamber inserts work fine as bolt-stops but *will not* contain solvent.

Chemicals

I've done articles on barrel cleaning in the past and mentioned the use of Sweet's® with Shooter's Choice® #7™ as an effective option that many people have great success with. Well, some Ph.D.-type Sharpshooters took extreme exception and wrote me lengthy claims that just trace amounts of this mix can corrode even stainless steel. I'll take their word that there's a problem they had. I don't deny anyone's experiences. I'll also take it to the point that I suggest not flirting with the potential danger, if it concerns you.

But. I put one drop of each daily on an unfinished stainless piece and also on a

Easiest way to clean one of these puppies is put it upside down and with its muzzle lower than the chamber. Still have to be careful to keep solvent from turning your nice epoxy-steel bedding into putty.

mild steel washer for a month and never saw anything happen to the metal surface. I'll also say that the sequence of Shooter's Choice® and Sweet's® is recommended by several benchrest gurus and one barrel maker of much note, and I've seen three national champions clean their barrels with this mixture of agents. [Note: these two chemicals aren't actually mixed to make one concoction; rather, they're used sequentially.]

One note on my test: After talking to several people on this subject -- both those adamant about the problem and those who deny its existence -- it's clear that this corrosive action cannot always be reproduced "on demand." It seems to happen in some barrels but not all barrels, and the catalyst may involve a combination of circumstances (or residues) that can't necessarily be reproduced in a "lab." Good golly. That could mean *anything* could hurt a barrel, under the right conditions...

There are other copper cleaners. One is Shooter's Choice® Copper Remover™. It works *at least* as well as Sweet's® and the manufacturer promised that it's perfectly compatible with Shooter's Choice® #7™ bore cleaner. Another is Barrel-Brite®. This cleaner doubles as a powder and copper solvent and does an outstanding job; it's especially good if you like the idea of an "all in one" product. In addition, many claim outstanding results with Butch's Bore Shine (that's gotten very popular). Another way to rest easy, if you've got the ante, is to purchase a Foul-Out™. These things work fine.

One basic, however, remains, and that is just how much of a problem metal fouling really is. A barrel will only foul so much, and you *will have fouling* after putting some rounds through -- no way around that. So while a copper remover will do its job, how much it really matters to your results across-the-course are in question. Something that's not much of a question is that an abrasive like JB™ Bore Compound is the only substance that will readily get *everything* out of a barrel (including that carbon coating near the chamber). Used properly, an abrasive will not hurt your barrel. That's what I use, mostly, in conjunction with good old Hoppe's® #9™.

Assuming that we're going to use chemical solvents for barrel cleaning, here are a few more basics: Don't dip a bore brush directly into a bottle of solvent; doing so just junks up the solvent. Squirt the stuff on. And squirt it a bunch -- you really shouldn't run anything dry through the bore (save for the last patch or two after your barrel is clean). Why? For the same reason you shouldn't clean a plastic lens with a dry cloth -- scratches. Use solvent in a well-ventilated area and keep it away from the eyes and skin.

Rods and Guides

Use a rod that's suited to the gun. About the best one out there is a Suryln™-coated Dewey® with *inside* threads. This is a special rod they manufacture for M14s. The inside threads give a little more insurance against damage. Since the M14 must be cleaned from the muzzle, and since crown damage is no trick at all to conjure up, having the additional cushion of Suryln™ around the tip attachment reduces the probability of metal-to-metal contact. This rod is also short enough that it won't contact, and subsequently release, the bolt when it's locked back by the bolt stop.

One barrel cleaning fundamental is to prevent rod-to-bore contact: use a rod guide. These run from machined to molded to made in the garage, and it really doesn't matter

Always use a rod guide, and get it in place as soon as possible. Leave the guide on the rod and don't let the tip attachment pass through it. Go slowly and run one patch only one time through the bore. Don't try to economize by reusing patches; compared to the cost of a barrel, that's an out-of-balance equation. Pinch a rag against the rod during the strokes to keep it clean. And don't forget to clean out the suppressor good before starting on the bore; otherwise, its gunk gets dragged into the bore.

which you use -- as long as it works. And it works when it centers the rod, and keeps it centered, during a stroke. I have had all manners, and Dewey® is as good as any. Put the rod guide over the rod *before* installing a brush or jag, and the guide *always* stays on the rod. In other words, when the rod-end is clear of the bore and sitting inside the flash suppressor, pull the whole works clear of the rifle, sliding the guide down toward the rod handle, before adding solvent or a fresh patch. Now slip the rod-end into the flash suppressor and then re-set the guide in place before the next stroke. This is done to avoid wear on the guide and to avoid losing all the solvent as the brush or patch passes through it. I went to the local hardware store and scrounged up a little flanged nylon bushing sized 0.250 inside. I drilled the rod guide end to match the bushing o.d., stuck the bushing in there, and fixed up a genuinely good guide. There was little to no side-side rod movement afterward.

Keep the rod clean. Wrap a rag around the rod and hold it with your fingers braced against the end of the guide. While a coated rod may not, by itself, damage the bore, the junk that collects on it isn't so kind.

Patches and Jags

You have a choice of "wrap" or "stab" jags. Both work fine. Those who prefer a stab-jag generally say the main reason is that it's plain easier to use -- stick the point in the center of the patch and push on through. The patch will fall off when it's clear of the chamber. Everyone has troubles sometimes with a wrapped patch that doesn't want to stay wrapped; if the material folds over near the jag tip it's difficult to get the jag into and through the bore, and that can also lever the cleaning rod into contact with the rifling. Also, if you wrap the patch, it will have to be unwrapped before bringing the rod back through the bore and out the muzzle. You won't see any difference in cleaning capacity between the two jags.

Most service-rifle shooters buy GI-type cleaning patches, which work great. If you use a stab-jag, though, you may need to switch brands; the GI patch is usually too large. A GI patch, incidentally, works exactly right with most wrap-jags.

Now, this may vary with the jag you're using, but assuming it's a Dewey®, try 2-inch squares on a wrap-jag and 1 3/4-inch rounds on a stab-jag (1 3/4 squares work okay too). *And one patch goes through the bore only once.* Don't drag it back through or reuse its flip-side. If you do, you're only putting back the same crud you just pushed out, and you're running a risk that grit is going back for another try at a scratch. Unfortunately, this is the reason many people like wrap jags; a patch can stay on one almost indefinitely. The exception to this "rule" is if you're applying abrasive, but never, ever use abrasives in a dirty bore; they follow a good cleaning with solvent. The whole idea of using abrasives is that they'll get what the chemicals didn't.

Tight patches are not recommended. All a patch has to do is carry chemicals and remove their residue. Think of it as a mop rather than a scrubber. If a patch is oversized, solvent will get squeezed out before it gets into the bore; likewise, there won't be enough absorption to suck up the gunk. If you have to hammer on your rod to get a patch through the bore, it's way too tight. Then not only is there a greater likelihood that any

Both stab and wrap jags have their followings, so use whichever you prefer. The only caution is to correctly size your patch for the type jag you use -- stab jags take smaller patches, and vice-versa.

If the gunk that accumulates in the chamber isn't cleaned out, you can conceivably encounter a headspace problem and also set up a potential for sticky feeding, which can lead to an out of battery firing. That is so bad.

grit on the patch will scratch the bore, but excessive flexing in the rod brings it into contact with the rifling.

Swab out the flash suppressor good *before* you clean the barrel. Since the rod-end has to pass through it, any gunk in the suppressor gets passed to the bore. Gunk will also collect on the suppressor in the normal course of cleaning, so continue to swab it during the cleaning operation.

Brushes

About the only result from excessive brushing is a sore shoulder. With modern solvents, the "scrubbing" function of a bore brush is waning. Its function, essentially, is now to free the crud that the solvent has loosened. "They" used to say to run one brush stroke for every round fired. Assuming that you've just shot a National Match Course, that would be about 10 times too many.

If you'll read the label on most any bottle of cleaning solvent, you'll see a recommendation to the effect that the agent should be left in the bore so many minutes, swabbed out, re-applied, and so on, until the barrel is clean. Take their word for it; it's not wise to assume that chemical manufacturers don't know their chemicals (or at least know how they work best...).

Use only *correctly-sized* bronze-bristle, brass-core brushes. If you've got a .30-caliber barrel, use a .30-caliber brush. An oversized brush won't likely hurt anything since the bristles flex, but it actually doesn't clean as well due to this excessive flexing (the bristles can't get a good shot around the lands). Use a brush a couple sessions and toss it; good brushes don't last long, but they're cheap. Sinclair® is a good outlet for truly good brushes. And make sure the brush is entirely free of the bore before running it back in; and in no case reverse directions once a stroke has started.

Don't use bronze brushes with copper solvent. Some folks do that and I will not argue with them. The exception I take to that practice is that I don't think they're getting out of it what they think they are, and they may be getting something contrary: more dissolved metal. I took a new barrel and commenced to brush some Sweet's® through it. I kept brushing and kept running patches and the patches continued coming out blue. It took another cleaning with Sweet's® -- without the brushing -- to get back a clean patch.

Brownell's® has a product that functions nicely for applying copper solvent, and that is a nylon bore brush. Again, these don't really do much scrubbing, but they're good carriers for the solvent and leave a pretty heavy slosh of the stuff in the bore.

You may or may not need to coat the bore with a rust-preventative, but it's not a bad idea. Just clean it out before you head to the range.

The last thing, for now, that you need to do is clean the chamber. A lot of people don't make any special effort in this area, and that's a mistake. M14 chambers get dirty in the first place, and in the second place, residual crud from barrel cleaning tends to collect around the neck area. Use a nylon-bristled test-tube brush followed by an appropriately-sized patch.

Next time we'll look at gas system maintenance -- the next step.