

Disassembly And Maintenance

The AR-15 is easy to take apart and clean. Ideally, all military small arms are. After all, what good is a rifle, submachinegun or machinegun that needs a vise, hammer, drift pins and special wrenches just to get it apart for cleaning? If there is one thing you can count on in the military context, it is that rifles will get dirty. If it is so easy, why is this one such a large chapter? Because while it is easy, it is also detailed and exacting. If you take care of a few things, your AR will give you years of trouble-free service. If you do not, it won't. And some things have to be explained in detail simply because (in my experience) they otherwise get neglected. Or they simply aren't known. Even if you "know everything" about the AR, or really do know everything because your DI and PMI taught you everything, read on anyway. You might be surprised, and you might pick up a few tips that you (and your DI and PMI) didn't know.

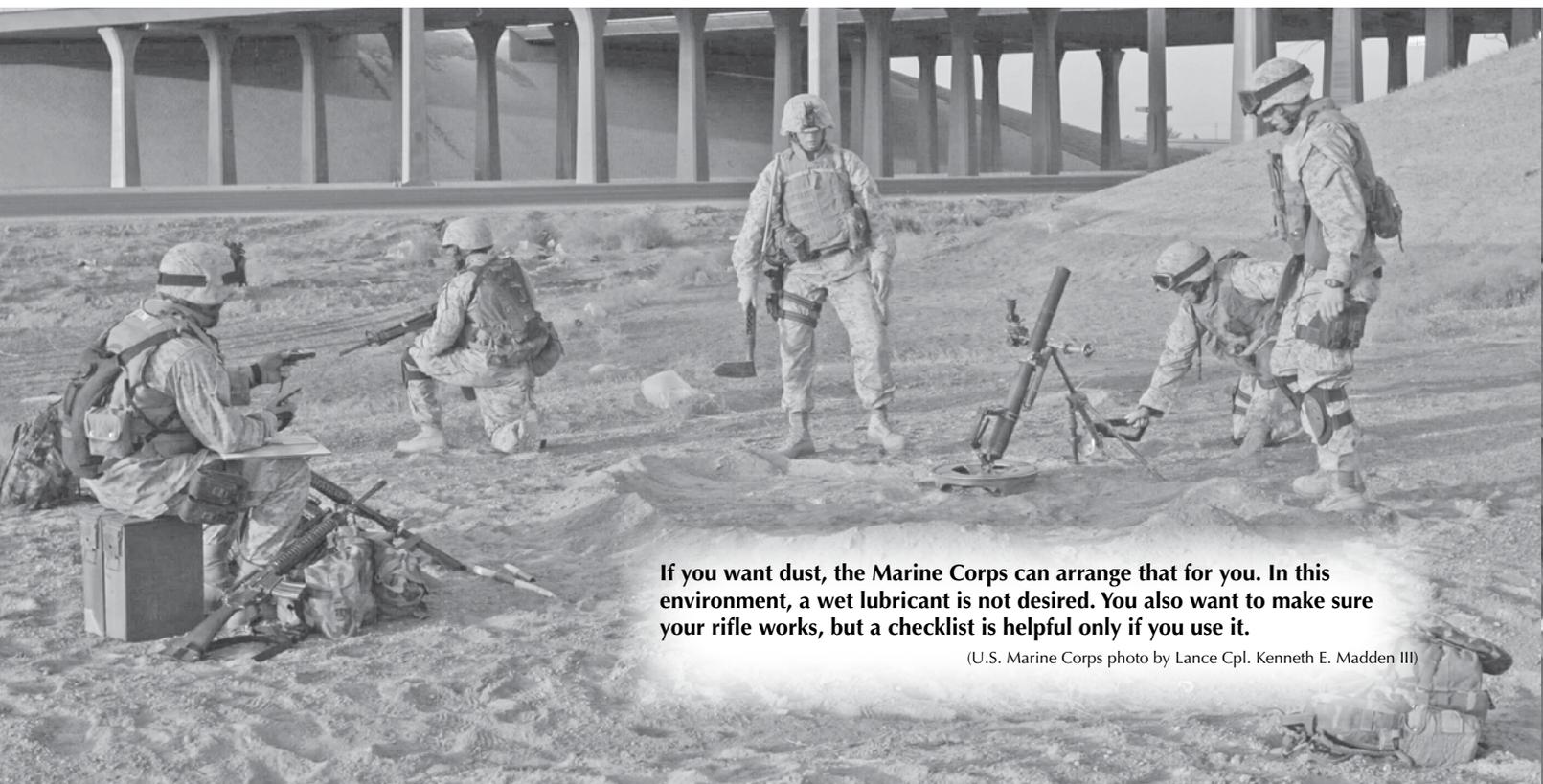
What tools do you need? At a bare minimum you'll need one loaded full-metal-jacket round, and a cleaning rod with patches, brush and lubricating oil. If you want more, you can add a bore solvent, a small screwdriver, a push-pin punch, several brushes for scrubbing various areas of the rifle, and a

large, flat, clean surface on which to work. You can get kits that will require a toolbox to cart around, on down to kits that will fit into the buttstock of a fixed-stock AR, the pistol grip, your pocket or your web gear.

If you are cleaning at home you might consider using rubber or latex gloves. Any drug store or medical supply store can provide you with a box of 100 pairs for a few dollars. When you get to the bolt, you'll really appreciate having gloves to wear, as will your wife or significant other.

One thing you should be aware of when cleaning the bore is the need to avoid a jointed rod. For emergency or field use, using a jointed rod is OK. But for the majority of your cleaning (for those not engaged in the field in dusting bad guys) you want to use a single-piece rod like a Dewey rod, or an Uncle Mikes, and a rod guide. More on that later.

The AR-15 runs dirty. Unlike other gas-operated rifles, where the ported gas acts on an operating rod, the AR valves the gas right back into the action. There, the gas tube tip pressurizes the carrier through the key, and blows it back, rotating and then pulling the bolt with it. Every time you fire, you spew hot, carbon-laden gases into the action. As the AR



If you want dust, the Marine Corps can arrange that for you. In this environment, a wet lubricant is not desired. You also want to make sure your rifle works, but a checklist is helpful only if you use it.

(U.S. Marine Corps photo by Lance Cpl. Kenneth E. Madden III)

is a tightly-fitted mechanism, using a high-pressure round, there is a lot of gas and a lot of places it can do mischief. An afternoon of shooting will turn the inside of your rifle into something that looks like it came from London during the Industrial Revolution: soot-laden, oily, disgusting and a mess to clean up. Luckily, it doesn't take 75 years to clean, as the air of London did.

Disassembly And Assembly Note

You should not need a hammer to take the AR-15 apart, except for a brand new, unfired rifle. The pins and springs on a new rifle may be tight enough to need some "encouragement" in coming free. But only a little. If you have to use a hammer to get things apart or back together, then either your rifle is fitted improperly, or you are doing something wrong.

In any class, when we're working on the disassembly or assembly, as soon as I hear tapping hammers I get to that rifle quickly. Almost invariably, the student is hitting something that only needs a push, if it were simply aligned correctly.

Don't use a hammer. Make sure things are lined up.

Disassembly

First make sure it isn't loaded. Long-time readers of mine will in many cases gnash their teeth at being reminded again. (And again, and again.) Others will be encountering this advice for the first time. I long ago lost count of firearms presented to me with the exhortation that "it's unloaded" only to find out otherwise. Even with extreme diligence, over a lifetime of handling firearms you'll at least once in your life pick up an "unloaded" firearm, only to discover in short order that it is indeed loaded.

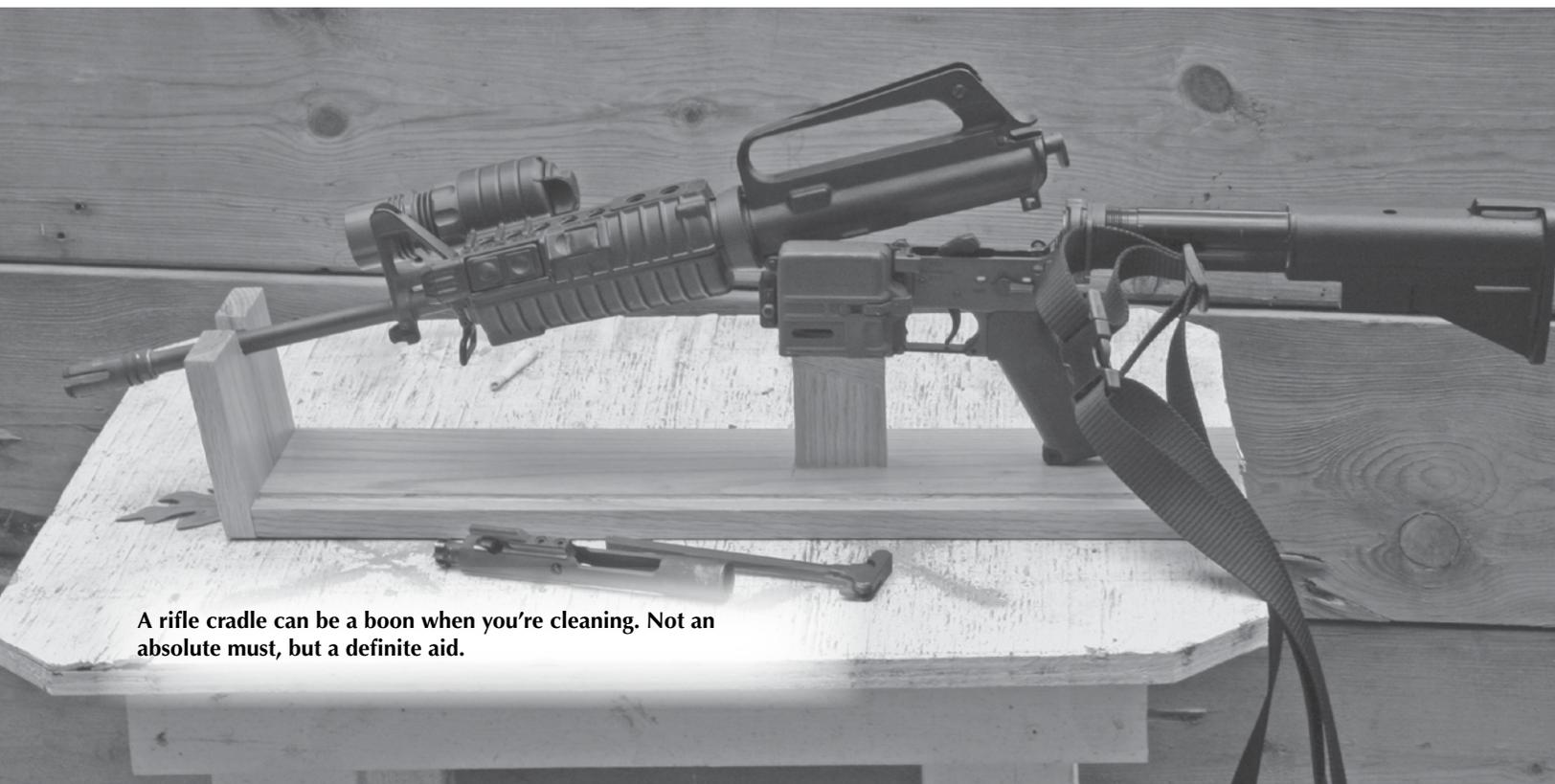
To check, make sure the safety is on. If it is off, and won't go on, the hammer is forward, making it unlikely it is loaded

but not impossible. Go right to the step of opening the rear pin. If the safety will go on, the hammer is cocked. Now pull the operating handle back partially, and look into the chamber. Look closely, and with a strong light if you have one available. You can't get a finger in there to check, so look again. Empty? Good. Ease the bolt forward.

With the action closed and the safety on, look at the gap between the upper and lower halves. At the front you'll see a pin. At the rear, just in front of the stock, is another. You'll find the front pin in three configurations; Double push pin, Colt large-head screw and Colt small-head screw. The DPP style is simple: a plain pin with a head on the right, and just "proud" (above the surface of the receiver) on the left. The double push pin is the standard, and military configuration.



Taking your rifle apart may be done with your bare hands, but you need tools to clean it.



A rifle cradle can be a boon when you're cleaning. Not an absolute must, but a definite aid.

The pins are a nominal .250 inches in diameter, and captured, that is, they stay attached even when they are pushed out for disassembly.

The Colt large-head screw was an attempt many years ago by Colt to placate anti-gun legislators. By using a larger-diameter pin (nominal 5/16, or .312 inches) Colt hoped to avoid the use of military surplus upper receivers on their lowers. The idea was that by taking this measure, Colt could show that their rifles were not military rifles, and could not be converted into machineguns. As a placating measure, it failed, as all such measures Colt has taken in the last 30 years have failed. As a means of foiling the use of surplus parts it also failed. The Colt large-head screw has a large pin that goes through the receivers, with a small screw that threads into it from the left side. To take it apart you'll need a pair of screwdrivers, to disassemble you hold tight one while unscrewing the other.

The Colt small-head screw is, as near as I can tell, a cost-saving measure that attempts to keep the Band-aid of the large-head screw. The small screw is the same diameter as the

double push pin. It is also cut with a shoulder, and retained by the standard upper fence. But it is held in place by a small screw on the left side. You only need one screwdriver, on the left, to take it apart. The standard double push pin uppers will fit a Colt lower with the screw-head small push pin. There is a small complication: not all Colt small-screw lowers have the fence drilled for the spring and plunger. If yours lacks the hole, you'll have to retain the screw/pin to keep things together. Otherwise, vibration from firing will cause a standard pin to work loose and drop out.

Now that you've determined which front pin your rifle has, begin disassembly by pushing the rear one out. Push from left to right. If a rifle is very tight you may need to hold a drift pin against the disassembly pin and tap it. Don't hit too hard. The sidewall on the retaining plunger is thin, and you can break it by striking too hard. Once the pin is completely to the side, the action will hinge open.

With the action hinged open, grasp the operating handle and pull back. Once the carrier comes clear enough, grasp it and pull it and the bolt out. Set the bolt assembly aside for the moment. Pull the operating handle back, while gently pressing down towards the lower receiver. When the operating handle retention tabs reach their clearance slot, it will come down out of the receiver. Set the handle aside. Now turn your attention to the front pin. If your rifle is a double push pin, push the pin over. You may have to wiggle the upper to the lower, to free the pin from binding. Once the pin is completely over, the two halves can be separated. Many times, this is far enough. At Second Chance, where we'd go through a couple of cubic feet of ammunition in a week's time, this was all a rifle would get during the day. Each night it would be detail stripped and cleaned. Ditto a USPSA/IPSC Three-Gun match in a dirty or dusty environment. Once to this level of disassembly, you use an aerosol scrubber to clean the carbon, dirt and dust off, you turn a chamber brush into and out of the chamber, run a patch down the bore, lube, reassemble and get back into the match.

But at night, or after the match, you do more.

Upper Disassembly

The only thing you might need to take off would be the handguards. Most of the time, not even that. Once the parts are out, there is nothing else you need remove from the upper in order to clean it. The handguards are held on by the round, ribbed nut on the back. It is spring-loaded. Pull the ring back towards the receiver, and the rear ends of the handguards will be uncovered. Pivot them away from the barrel. They are hooked inside the front cap. Old triangular handguards are made as rights and lefts. Round handguards are identical and interchangeable, and go together as upper and lower pieces.

Bolt Disassembly

Take the disgustingly-grubby bolt and look on the left side. You'll see the loop of a cotter pin. Hook it with your small



The special tool from Buffer Technologies helps you disassemble the rifle, magazine, and tighten the straps on your MagCinch.



Use a mop to clean after you scrub, just like windows or floors.

screwdriver. In the field, you can use a bullet tip or the tip of a knife. Pull the pin out and set it someplace where it won't get lost. Turn the bolt upside down, and the firing pin should fall out. If it doesn't, pull it out. (This is a clue your rifle is overdue for cleaning) If it pulls free with a sucking sound, you really have been neglecting it, haven't you? Do not bother looking for the firing pin spring, for the AR-15 does not have one. On the top of the carrier, under the key, is a rectangular knob. Push the bolt back into the carrier. Then rotate the knob so the long side is parallel to the carrier length. Now lift the cam pin (for that is what it is called) up out of the carrier. With the cam pin out, you should be able to pull the bolt forward out of the carrier. Look at the bolt. You'll see a large-ish pin through it. A solid pin. Use your small screwdriver (or in a pinch, the firing pin) to push this pin out. Once it is free the extractor comes out. The only pin left is the small roll pin. It keeps the ejector in place. At this point, let me abandon my usual path of home-made gunsmithing tools, or using ad-hoc tools.

Holding the bolt while you use a 1/16-inch drift punch and a small ball peen hammer to remove the pin is not easy. I did it for years by carefully positioning the bolt in a vise, or in the field getting someone to hold it while I got the pin started. Getting things back together was even more difficult. The first time I used a bolt tool from Sinclair, I mentally forehead-slapped myself for not having gotten one sooner. If you are going to remove the ejector pin and ejector more than once in your life, the money spent on the Sinclair tool is a wise investment. Don't begrudge the dollars, get one.

The ejector is spring-loaded. Put the bolt in the tool, line up a lug in the bottom slot, and turn the screw until it stops. Then back the screw out a quarter turn. (Bottomed out, the screw presses the ejector against the pin. By backing it out, you take pressure off the pin and make it easy to remove.) Take your drift pin and hammer, and tap the pin out. Unscrew the knob, and remove the ejector and spring.

Lower Disassembly

Remove the buffer and spring. Use a thumb to press the buffer back into the tube slightly, then press the retaining plunger down with that same small screwdriver you've used for so many things. Ease the buffer forward past the plunger, and pull the buffer and the spring out. You can swab the tube (A good idea in a sandy environment, wasted effort anywhere else.) but be sure you don't leave a patch or something behind.

The fire control parts are next. Put your thumb over the hammer. Press the safety off with your other hand and press the trigger, releasing the hammer. Ease the hammer forward. If you let it slam into the receiver without the bolt in place, you can damage the receiver or even the hammer.

Take your medium drift punch, the 1/8-inch one, and press the hammer pin. If yours is tightly-fitted you may have to tap it with a hammer, but most will come apart with finger

pressure. Once the pin is out, lift the hammer out. Then push the trigger pin out. Lift the disconnecter out. Some rifles will have enough clearance that you can work the trigger out with the safety in place. If not, get your medium screwdriver and look in the pistol grip. The screw in there has to come out. If yours is an allen-head, you'll need a long one to reach. It is common in law enforcement classes to modify the allen head screw by using a hacksaw to create a slot, so you can use either an allen wrench (not common) or a screwdriver (common) to remove it.

As you unscrew the pistol grip, you'll see the safety plunger and spring come into view. Do not lose them. Set them aside, and once the grip is off and the plunger and spring are out you can remove the safety and then the trigger.

You now have a pile of carbon-covered parts on your bench. Let's get to cleaning them.

Basic Cleaning

Wipe everything down. Scrub the bolt, carrier, fire control parts and chamber with brushes and solvent, wipe clean. Run brushes and patches down the bore until "clean enough." Lubricate everything, reassemble and arrange as your needs dictate. In Fallujah, that means load it and put it where you can find it when you wake up. As a police officer, it means load according to departmental policy, rack it and lock it. At home, well, it could be anything from lock it in the safe to stand it up next to your bed.

Many rifles will perform admirably for years with no more than a basic cleaning. Some might want (if we can anthropomorphise a rifle) more bore cleaning for good accuracy. Others might want more action cleaning for reliability. You'll have to determine if a basic cleaning is good enough for you. If it isn't then there is the detail cleaning and the time and effort it takes.

Detail Cleaning

Here you'll scrub every surface of every part that matters. And the surfaces that don't matter get wiped, just to keep the dirt from migrating.

Detail Upper Cleaning

What matters here is the chamber and locking lug area, and the bore. The interior of the upper matters only in that it is a repository of gunk. If you don't at least wipe it clean, your carrier will be "re-grubbified" the moment you reassemble your rifle. The outside matters only if it matters to you, your wife, supervisor or buddies. As for the bore cleaning, it is a specialized matter, and I've put the particulars on cleaning the bore in the Barrel chapter. What you have to keep in mind when cleaning the upper is this: you scrub the bore after you scrub the chamber and locking lugs. Chamber scrubbing can push gunk down into the bore, and you can't leave it there. So scrub chamber first, then bore.

To scrub the chamber you need a chamber brush and a T-



You need a special, big, brush to scrub the interior of the upper.

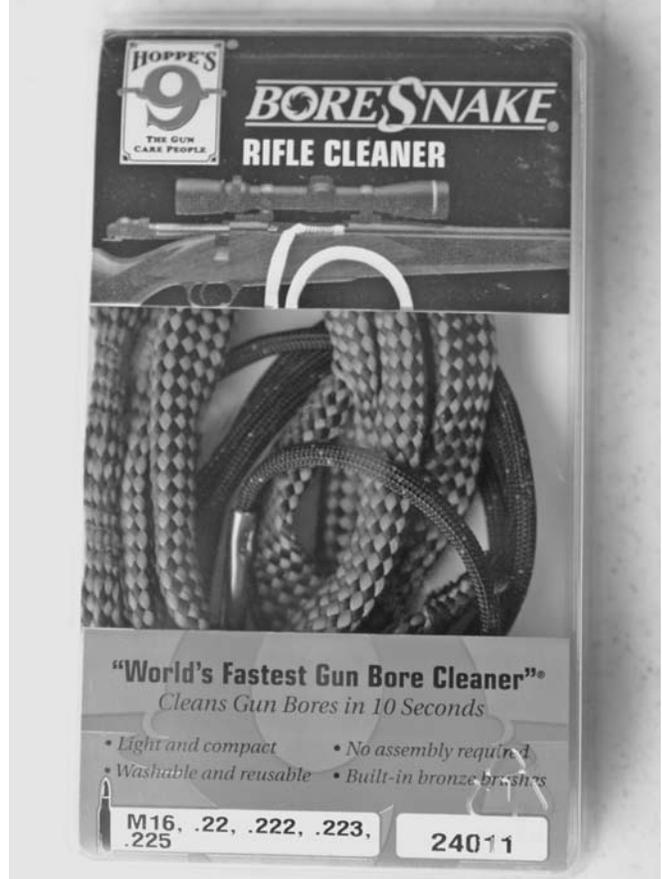


The chamber brush is meant to scrub the chamber and the locking lugs.



The gas tube blows hot gases into the lubed interior of your rifle.

handle rod. You can swab the chamber and locking lug area with a solvent-soaked patch prior to brushing it, but it isn't required unless your rifle is so caked with carbon you can't brush it all loose. Screw the brush into the rod, and then press the brush into the chamber while slowly turning clockwise. Keep turning once the brush bottoms out, then pull the brush out while rotating. If you simply push the brush in and pull it out you won't scour the carbon off, and you'll break the



The BoreSnake is great to keep going in a match or in the field, but it does not replace a thorough bore cleaning.

bristles off of the brush. With the carbon loosened, press and turn a chamber swab, then pull it out. Finally, clean the locking lug area with a Sinclair rod and swab made specifically for the task. Or, use the Brownells chamber swab. The Sinclair uses replacement swabs that fit on their handle. Swab the lugs clean and toss the grubby swab. The Brownells mop is a chamber-brush-shaped mop that wipes clean, but must be cleaned to be re-used. They both work, you just have to decide which is more convenient.

Once the chamber is clean, wipe the interior of the upper with a solvent-soaked patch. Then brush. You can use the military brush, the one that looks like a toothbrush, or a Sinclair brush, which looks like a bore brush for a small cannon. Use the small end of the military brush to scrub the slot the operating handle rides in. With the carbon loose, wipe it out with a paper towel. You'll be surprised and even horrified at how much comes out.

Finally, scrub the bore. (See the Barrel chapter.)

You can lube the interior of the upper if you like. In many locales it acts to soften the inevitable powder residue. In extremely dry and dusty environments, it simply traps carbon and dust into an abrasive slurry. Here in the Midwest, with hot summers and cold winters, we use a light lubricant, but keep them damp to wet with lube. But compared to the Middle East, our sand and dust is the size of pea gravel. We don't have to worry about as sandstorm caking the rifles into a solid mass. You will have to lube according to your local conditions and time of year.



You need a special solvent to get the copper residue out of your bore.

As an example of the lubrication requirements of individual rifles, I have one rifle that I have not put any lubricant into in the last two years of practice and classes. Now, it is not my high-volume practice gun. But it is the class gun I take to hand to students whose rifles are down and need something to shoot until I fix theirs. I clean the bore (I may be testing it, but I'm not a sadist. I want my bore to last as long as possible.) but do not otherwise clean or lube the bolt or lower. This rifle has not failed to function properly, ever. Does this mean your rifle can run without

lubricant? No. It just means some can,

sometimes. In the wet, cold, gritty dusty Midwest, we keep them wet with lube. In a drier climate, I would use TW-25 from Mil-Com. In testing I've found that it keeps rifles running quite well, and the carbon and dirt clean off easily. What the TW-25 avoids is the gooey, oily mess of the carbon suspended in lubricant. The bolt and carrier of the rifles that get TW-25 wipe off with a lot less mess.



TW-25, a most-excellent dry lube for dusty conditions.

Detail Bolt Cleaning

The bolt is what most often keeps the rifle from working properly. You must get every part of it scrupulously clean, because it gets very dirty very quickly. If it starts off dirty from a casual cleaning, then you've simply shortened the time before it lets you down.

Even for a detail cleaning you need not remove the ejector. Only if your ejector seems weak or sluggish, or the ammo you are using leaves large amounts of brass shavings behind, do you need to remove it every time. With the extractor off, scrub the bolt squeaky clean. Do not scrub the tail, behind the gas rings. There you must scrape the carbon off with a flat brass tool. If you brush the tail, you might snag and sling out a gas ring or two, turning your rifle into a straight-pull bolt-action rifle.

Scrub and degrease the bolt body, lugs and bolt face. Inspect the gas rings. There must be three of them. You can carefully arrange them so the gaps don't line up, but I haven't found a rifle yet that short-stroked when I lined up the gaps. (None of the rifles in this book did, nor do any of my personal ones. Somewhere, out there, is a rifle that does short-stroke when the gaps line up. The solution would be to install new rings.) The carbon on the bolt tail must be scraped off. I use a short section of flat brass bar that I machined a slight chisel edge on. My friend Jeff Chudwin uses a modified .50 BMG empty case to do the same thing. Do not use a brush or wire wheel to get the carbon off. You can easily snag a ring and sling it off the bolt. Even if you see it go and find it, it will probably be damaged and not useable. If you don't spot it, your rifle could short-stroke as a result.

Scrub the extractor. While you've got it out, look at the edge. It should be sharp and crisp. If the extractor hook is chipped or rounded, you may need a new one soon. You can either keep using it until it fails you (to see how long that takes) or install a new one. Look at the extractor spring. It must have a small plastic cylinder inside the spring. The current ones are the strongest, and are black. Older ones are blue, and work well almost all the time. Anything else (red, white, ivory, etc) is older, weaker, and not to be trusted. If you have regular instances of empty cases left in the chamber, you might need extractor spring help. If your spring lacks a booster, install one. While you're at it, install a new spring, too. (The old ones often get damaged in removal.) If you have a good spring and blue or black booster, you must step up. One way is to use a heavier spring. You can get a heavier spring from Wolff or Specialized Armament Warehouse. To remove the old spring, you must know that it is seated under a lip in the extractor. You'll have to carefully pry it loose. To install the new one, you must start one side of the spring in the hole, under the lip, then use your small screwdriver to press the spring under the lip, as you press the screwdriver around the perimeter. Just like getting a tire on a rim.

Another approach is to use an Armforte D-fender from



The big brush scrubs the interior, but doesn't get into the charging handle slot. There, you'll need a smaller brush.



Make sure you have three gas rings, and that the gaps don't line up.



There is a lot of carbon buildup on the bolt tail. Scrape it off carefully, without marring the bolt, or removing gas rings. Don't use a brush.



Your extractor should have a blue or black internal buffer. Better yet, add a D-Fender.

Mack Gwinn. The D-fender doesn't replace the spring, it supplements it. You place the D-shaped polymer booster (thus its name) with the straight end towards the extractor hook. However, you do not want to "gild the lily." DO NOT use both an extra-power extractor spring AND the D-fender. The extractor must cam over the case rim on closing, and by double-boosting it you make it impossible for the extractor to flex. The bolt won't close on a chambered round.

Once you've got your bolt apart and clean, inspect it. The lugs should be un-marred, and not chipped. Any chips or peening indicates one of a host of bad things: Chips usually mean your rifle was built with a used, military-surplus and high-mileage bolt. If it is chipped it may break. Peening means it is too soft. It is either a sub-standard product, or somewhere along the way it was overheated and lost its hardness. Look at the cam pin hole. One side should be peened to prevent cam pin entry. The peening prevents you from assembling the bolt wrong-side out. If you assemble the bolt with the extractor on the left side, it will try to extract the fired case out through the solid sidewall of the receiver. The empty won't go, the bolt won't let go, and the rifle is tied up. I found this out from a club member who had survived unscathed 13 months in Vietnam, carrying an M-60 when he wasn't packing an M-16 in the bush. The bolt on his AR-15 wasn't peened. He got it together wrong. He was very, very P.O.'d about the non-standard bolt his rifle had. If your rifle lacks the peening, you can't peen it, it is too hard. You can (and should) complain to the maker. If they can't or won't help, you'll just have to be very careful every time you assemble your bolt and carrier, to get it together correctly.

To reassemble, press the extractor into the slot and push firmly. The new spring, or spring and D-fender, will add resistance. Then press the extractor pin through until it is flush.

Lube the bolt, paying particular attention to the extractor and ejector, and the extractor seat.

Carrier Cleaning

There is nothing to take off the carrier for cleaning. First, scrub the exterior. The front tunnel on the carrier, where the bolt rides, will be carboned up quite severely. There are no brushes that work well there. What you'll need is a carbon scraper from Mark Brown, which you can get from Brownells. Insert the scraper, turn, and extract. The carbon will be scraped out, or at least what the scraper can get. Don't worry about what it leaves behind, it is very little and not going to be a problem. With the carrier clean, proceed to your inspection.

First, check the carrier key. It must be tight on the carrier. You'll see two screws holding it on, screws that should be staked in place. Grab the carrier with one hand, and with the other try to move the key. If it moves at all, it must be tightened. If it is loose, proceed to take it off. (You cannot simply tighten the screws and count on their holding. They came loose once, they'll come loose again.) Scrub the key and

carrier and degrease them, and the screws and screw holes. Apply Loctite to both key and carrier, and the screws and holes, and tighten the screws back down. Wipe the excess Loctite off the exterior, and use a Q-tip to wipe up any inside the bolt tunnel. Then re-stake the screws. (This is one of the two applications of Loctite I recommend on the entire rifle. Others use it a couple of other places, but I do not.) Sinclair makes a carrier key brush for scrubbing the key. I'd never cleaned a key before I saw this brush. When I used it on my rifles an embarrassing amount of crud came out of each and every one of them. Does it matter? I don't know. On my rifles it obviously didn't, as they all ran fine without getting the key scrubbed. Might it matter on your rifle? Perhaps, only time and testing will tell. All mine will get at least an annual key scrubbing from now on.

When re-securing the key, why not just tighten and re-stake? Once the screws come loose, oil and powder residue works its way into the threads. Once oil and powder residue get there, you cannot tighten the screws as much as they had been, and that obviously wasn't enough anyway. And screws can work loose even under staking, and simply lift the key with them as they turn. Instead, remove it, scrub it, and secure it again.

Inspect the front of the carrier, on the top. Look to see if it is cracked from the front to the cam pin hole. If your rifle had been built with a high-mileage surplus carrier, it may be cracked or become cracked after you've shot it. Cracked is bad, and you'll need a new carrier.

If it passes the inspection, lube the exterior and the bolt tunnel.

The Rest Of The Parts

Wipe the firing pin, cam pin and cotter pin clean. Scrub them if you need to, to remove all carbon. Inspect the firing pin for burrs on the tip, and on the rear collar. AR firing pins and M-16 firing pins differ in collar diameter, and depending on what parts your rifle was built with, the collar may get burred from being banged against the hammer. The cam pin gets a buildup of carbon right at the edge where it bears against the cam slot in the carrier. The cotter pin gets grubby, but doesn't really take a load of any kind. You usually find them knarfed from heavy-handed assembly, and not from shooting.

Reassembly Of Bolt And Carrier

Wipe the tail of the bolt clean and then lubricate it. Make sure the gas rings are staggered. Push the bolt back into the carrier, line the cam pin up with the slot, and push the cam pin into place. Make sure the extractor is on the right side of the carrier, as seen from above. Rotate the cam pin. Push the firing pin in the rear of the carrier. If you have an M-16 or modified M-16 carrier, you'll have to hold the carrier vertically and drop the pin in through the rear. AR-15 carriers have enough clearance that you can work the firing pin in from

underneath. Push the bolt forward, and then press the firing pin as far forward as it will go. Press the cotter key in from the left side. You may have to rotate it to get both legs into the far side hole.

Once assembled, check assembly. Turn the carrier onto its rear and tap it against your hand or a table. If the firing pin comes out, you didn't have it far enough forward, and the cotter pin didn't catch it. Remove the cotter pin, press the firing pin forward, and make sure the firing pin shoulder is forward of the cotter pin on assembly.

Once together, check the gas ring tension. Pull the bolt all the way forward, then stand the bolt and carrier assembly on the face of the bolt. If the weight of the carrier is enough to collapse the assembly, you need new gas rings. If it stands, there is enough friction.

Reassembly Of Upper

Run the operating handle forward into the upper, then hold the front end of it up against the interior of the operating handle slot. Pull the handle back, and you'll feel the locking tabs of the operating handle click into the access slot. Push the handle forward just enough to keep it from falling out. Make sure the bolt is forward, and insert the bolt and carrier assembly into the upper with the carrier key entering the slot on the underside of the operating handle. Once inserted, push the carrier and operating handle all the way forward, until the carrier is flush with the receiver, and the handle locks in place.

Lower Receiver

On the table in front of you are the trigger control parts of the lower, the buffer weight and spring, the pistol grip and

Make sure your key is tight. Wiggle it. If it moves, tighten it or replace the screws and use Loctite.





**The lower uses a different brush.
Get the internals out, first.**

screw, and the spring and plunger of the safety selector.

Scrub the carbon off of the fire control parts. Leave the disconnecter spring attached to the trigger. Scrub the interior of the lower, where the hammer and trigger reside. Swab the gunk out of the buffer tube. For those of you with a tele-stock, there is no need to remove the stock unless you've fallen into water, mud or the peculiar combination of the two they have down in Louisiana. Then, you simply pull down on the whole locking assembly, and slide the stock off of the rear of the tube. Those with solid stocks need not remove the stock. But the buffer tube can collect debris. So, you swab it out. Wipe the buffer and spring clean.

Inspection

Look at the hammer and trigger to make sure the springs are correctly installed. And to memorize the correct orientation. In almost every class, we have at least one range session where a rifle that has been incorrectly assembled fails to work.

Look at the hammer, trigger and disconnecter for cracks, peened areas or corrosion. On the hammer, look to make sure the internal spring, the one that acts to keep the hammer on the pivot pin, is there. They have been known to break. A broken spring can result in a hammer pin that walks, and a malfunctioning rifle. On both the hammer and trigger, look at the sear surfaces. Make sure they are not chipped or worn. There will be scuff marks, because they slide against each other in normal operation. Chips or rounded corners are bad. Look at the disconnecter. The front tip, on the bottom, is the timing tab. If the disconnecter was advanced in timing too

much, excessive amounts of metal may have been removed, weakening it. Look for cracks at the rear of the tab. If the tab is cracked, you'll have to replace it and re-time the new disconnecter.

Look at the buffer. If the face is heavily marred, and had not been originally, you may have a rifle that is getting too much gas. While you can replace the buffer, if the problem is a too-large gas port, the new buffer won't last any longer than the old one had. The buffer should have solid weights in it that "clack" back and forth as you shake it. The weights turn the buffer into a dead-blow hammer. Do not use the buffers made of plastic, with lead shot in them. They may weigh the same, but they do not work the same.

Count the number of coils in the buffer spring. A standard spring should have 41 to 43 coils, and a tele-stock rifle should have 37 to 39. And the appropriate buffer. Do not use a short buffer in a standard rifle. To do so allows the carrier to over-cycle, and the key may strike the rear of the receiver. If you're lucky, you'll shear off the key screws. If you're unlucky, you'll crack the receiver. A shorty with a standard buffer will not cycle, as the buffer is too long to allow the bolt to fully travel.

Reassembly

First the buffer and spring. Competition shooters like to heavily grease the spring, to reduce or eliminate the "boing" of the AR when it cycles. However, in a defensive application, you should avoid heavy grease. Use a light oil or TW-25 aerosol. Push the spring into the buffer tube, then the buffer itself. Press it back past the retaining pin.

Insert the trigger into the lower, and press the pivot

pin partway into the trigger. Press just enough to catch the trigger. Then insert the disconnecter. Holding the lower on its side, look through the hole on the other side and line up the disconnecter hole. Press the pivot pin all the way through. Insert the safety. You may have to press the tail of the trigger down to clear the safety. Take the safety plunger spring and wrap the end of it with a bit of masking tape. Stuff the taped end down into the pistol grip hole. Press the safety plunger into the receiver, and then install the pistol grip. Keep the spring lined up with the plunger as you tighten the screw.

Grab the hammer between thumb and forefinger, and press the legs of its spring down onto the pivot pin of the trigger. Then press the hammer down into the lower, lining it up with its pivot pin holes. Press the pivot pin into the hammer. Turn the lower over, and looking through the receiver hole, line the hammer up with the pivot pin hole on your side. Then use the tabletop (benchtop, etc) to push the hammer pin through until it is flush.

Now look down into the lower receiver. Are the legs of the hammer spring on each side of, and outside of, the trigger spring? If not, use a small screwdriver or knifetip to move the legs over.

AR-15 Checklist

The checklist is not just for buying a used rifle. You could find yourself as a law enforcement officer being handed one for the first time, or handed one in an emergency. Or being handed yet another anonymous rifle out of the rack, as your department doesn't issue particular rifles to individual officers. (A bad idea, by the way, to issue at random. It is far better to individual-issue.) Or you find yourself in a red-hot screaming emergency defensive situation, and you've got one minute to make sure the rifle you've been handed has all its necessary parts before you'll be shooting at people who are shooting at you.

And for those who are looking to buy a used rifle, just what should you look for to see to it that you don't end up with a lemon? In none of the situations described do you have the time or opportunity to function-fire the rifle in your hands. In a law enforcement situation, you're expected to sign the paperwork (after checking serial numbers, something of far more importance to the issuing desk than "does it work?") And when buying used, unless you're at a range, loading it and shooting it is going to get you ejected from the gun show, arrested and probably prosecuted.



(U.S. Army photo by Staff Sgt. Charles B. Johnson)

Now is not the time to be wondering if your carrier key is tight. You can bet these soldiers in the 82nd Airborne knew their rifles worked long before they found themselves in Fallujah.

Short Checklist, What You Can Do In A Minute:

All Present And Tight Check

Give the exterior a quick look-over. Is the stock tight? Are the handguards tight? Is the front sight housing secure to the barrel, and upright? Is there a front sight, and how tall is it? (Is it screwed 'way down or up? It might be mis-zeroed, or it might be zeroed and that's where the sight has to be. Both are bad signs.) Is the rear sight present? Centered? If an A2, is the rear drum three clicks up from bottom, with the sight at 3/6 or 3/8? Is the upper slightly or greatly loose on the lower? Or rigid and unmoving?

Bore Check

Open the action and remove the bolt and carrier. If the pins are very tight and difficult to move, and the rifle is not built as an NRA High Power or Service Rifle competition piece, ask why it is tight. Once the bolt is out, look down the bore to make sure you see daylight. (You'd be surprised.)

Firing Pin Check

Make sure the firing pin is forward of the retaining cotter pin. If it is behind, it will fall out, and even if it doesn't fall out it won't fire. Push the bolt back and then push the rear of the firing pin forward. Does it protrude from the bolt face? If it does, good. If not, something is wrong. That something may simply be storage grease, but it might be a broken or short firing pin. Find out.

Bolt Face

While you're looking at the firing pin, inspect the bolt face. A re-used and refinished bolt that has seen a lot of rounds will have wear on its face around the firing pin hole, where the primer radius is. Some will be burnishing, and abused ones will show pitting from the occasional leaky primer.

Gas Ring Check

Snap the bolt forward, and then stand the bolt and carrier assembly on the bolt. The weight of the bolt should not cause it to collapse. If the friction is so slight that the carrier drops down on the bolt, it needs new gas rings.

Gas Key Check

Is the carrier key on to of the carrier tight? If not, the rifle will short stroke. To quote the movie "Casablanca:" "Maybe not now, but soon, and for the rest of your life." Or at least until you get it secured.

Fire Control Check

Does the safety flip from Safe to Fire easily? Too easily may mean it is a worn, used, replacement part. Or that it has been abused, neglected or mis-assembled. If it is difficult to move, it may just be storage grease, or it may be incorrect assembly.

Once you've checked movement, then check by dry-firing and checking timing. If the owner won't let you, or the gun show regulations require that the action be cable-tied shut, then you can only go by the owner's assurance that it works. Get it in writing!

Five-Minute Checklist: Bore Check

In addition to looking down the bore, inspect the crown for dents, dings or uncleaned powder residue. Some people like to sell used guns as new, but neglect to clean the flash hider. New rifles are test-fired at the factory, but not very much. If you have one, a chamber mirror (Brownells has them) gives you a chance to see if the chamber is crusty, pitted, neglected or needs a cleaning. A chamber brush is useful to scrub the chamber clean, as is a cleaning rod. If you can, run a patch down the bore to see how clean it is, and to get a feel for any roughness.

Firing Pin Check

Pull the firing pin out and look it over. Check to make sure it is straight. Is the tip clean, smooth and rounded? A rifle that has seen blown primers may have a chipped or eroded firing pin tip.

Gas Key Check

Make sure the gas key is tight, staked, and straight. Inspect the front for wear, banging or chips. A banged-up gas key may work just fine, but if it is on a rifle that is offered as a "low mileage cream puff" then there is something wrong.

Gas Ring Check

After you do the headstand check, disassemble the bolt and carrier and look at the gas rings. There should be three of them, the gaps should not line up, and they should not be worn. Gas rings are cheap and easy to replace, but worn gas rings on a supposedly new or low-mileage rifle should be a warning.

Fire Control Check

Does the lever move smoothly? If so, then check the trigger timing and trigger pull weight. Check that the safety does indeed prevent the hammer from falling: Put the safety on, then pull the trigger. It must not fall. If it does, there is something seriously wrong, and it must be fixed. Then, release the trigger, push the selector to Fire, and dry fire. Is the trigger pull markedly different than before? (When you hadn't pre-loaded the trigger.) If it is, then the safety is not completely blocking the trigger, and the trigger is moving slightly when the safety is on. Again it must be fixed.

Magazine Inspection

Do magazine insert smoothly, and without binding? Do they fall free of their own weight when the bolt is locked back.