

BIG BOOMERS

BY PATRICK SWEENEY

ON YOUR AR

Say what?



The magazine sticks out on the left side of the Safety Harbor Firearms' SHTF-50 upper. And while it feeds fine, it can feel in the way.



From the bench, any .50 is going to be a handful. When the full-up weight is just under 20 pounds, things can get interesting.

It is in the nature of compromises that you have to give up something in order to get something. No matter how you try, or how good an attorney you hire, you simply cannot get around the Thermodynamic Laws. To launch really big bullets at impressive velocities takes a honkin' big gun, with mass and length, and cost.

One really big thing you have to resign yourself to when you decide you want to get into the really big bore is cost—the cost in ammo, bought or reloaded; the cost of size; and the cost of weight. One way you can trim the latter two is to give up on an all-steel, .50 BMG-dedicated blaster and use a conversion. A .50 BMG-specific rifle will probably tip the scales at 30 pounds and \$6,000+ for a semi and 25 pounds and \$2,500+ for a bolt gun.

The most common conversion (actually, the only one I think is even possible) is to use a .50 BMG-chambered upper on your AR-15 lower. If anyone has made one for the AR-10-size receivers, I haven't heard of it, but I'd bet someone is working on it. All other rifles need not apply.

The process is simple. The new upper has a pair of attachment lugs, corresponding to the lugs on the upper of an AR-15. You push your assembly pins, remove your AR upper (5.56, 6.5, whatever it might be) and then install your .50 BMG upper and press the pin across. Violá! Instant .50 BMG rifle.

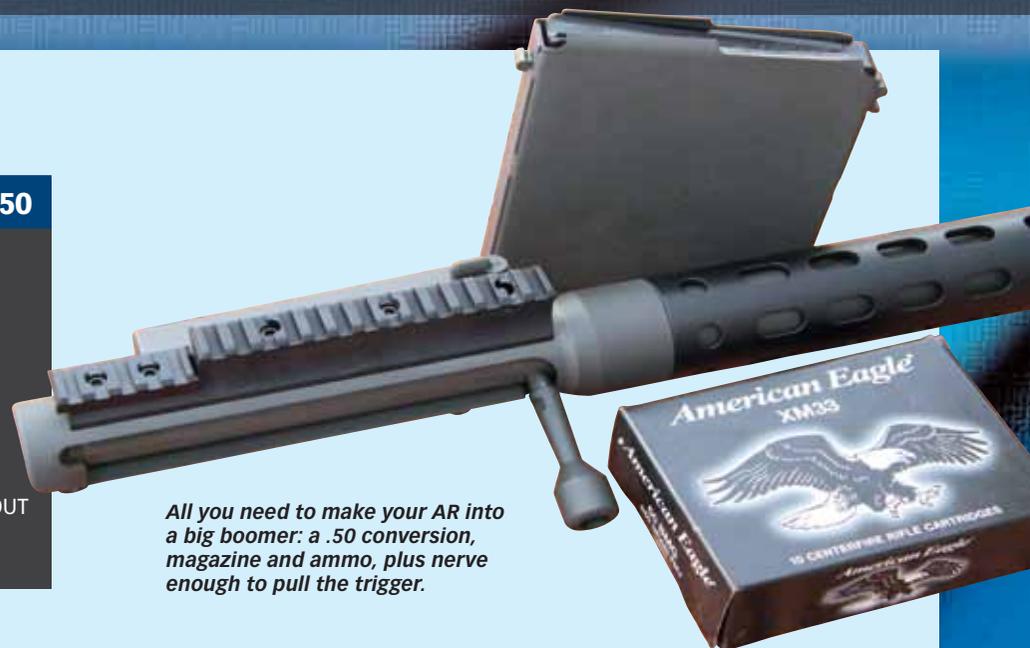
There are drawbacks, however. First of all, this is not going to be a self-loading rifle. Even if there were some way to attach a magazine (most are single-shots), the buffer weight and spring on your AR are hopelessly inadequate to handle the recoil of a reciprocating .50 BMG bolt. So

SPECIFICATIONS—SHTF-50

BARREL: 4140 ASE STEEL, 19-, 22- OR 29-IN., 1:15 TWIST

WEIGHT: 19-IN. BARREL—11.5 LB.
22-IN. BARREL—12.5 LB.
29-IN. BARREL—15.5 LB.

SCOPE BASE: ALUMINUM, PICATINNY, RELIEVED FOR BUIS ON REAR, FRONT BUIS ON HANDGUARD (ALL WITHOUT SCOPE, BIPOD, LOWER OR AMMO)



All you need to make your AR into a big boomer: a .50 conversion, magazine and ammo, plus nerve enough to pull the trigger.

your big .50 will be a bolt action. Also, it will probably be a single-shot, as the AR magazine well can't handle the .50 BMG, for obvious reasons. It is entirely possible to design a replacement upper with its own magazine, a side-mount like a Sten gun on steroids, but that starts to make the rifle a lot more bulky and heavy, and the plus of magazine feed is probably more than offset by the size and weight.

Last is recoil. Your AR lower probably doesn't weigh much more than three pounds (if it does, you really should consider just how much gear you have bolted to it), and the full weight of the .50 BMG upper on your AR would be too light for comfortable shooting without a muzzlebrake. In fact, it would be hazardous to shoot such a lightweight .50, so your upper will have to have a muzzlebrake on it. Something big, effective, noisy and "blasty." You will not make any friends at the gun club shooting it, especially if your club has gone to the effort of putting a cover over the firing line. All that effort to keep the sun and rain off just makes the experience

that much more miserable for those shooting around you.

As our exemplar, we'll be looking at the Safety Harbor Firearms conversion of a .50 BMG onto an AR lower, called the SHTF-50. Not because I've tested them all and found the Safety Harbor to be the one for me (oh dear God no, I'm not going to test-fire every single .50 extant), but having looked over a few, I found the Safety Harbor offering to be an interesting and solid model to use as our test gun.

Safety Harbor offers the SHTF-50 in three different barrel lengths, 18, 22 and 29 inches. The barrels are made 4140 steel with a 1:15 twist, normal for the Big Fifty. The bolt is a two-lugged design, with the head made from 4340 steel and the bolt body from 4130, while the receiver is machined from 4130. In addition to the two locking lugs, the bolt handle nestles in a slot cut in the receiver, acting as a safety lug. On top is an aluminum scope mount (iron sights on a .50 BMG, unless it is an M2HB, would be an affectation) where you can bolt on the scope of your choice. My suggestion:

something stout enough to handle the recoil you and your rifle will soon be experiencing. Now, if you want to put on iron sights, the scope mount is relieved for them and the front of the handguard has rails for a sight. Knock yourself out.

Unlike similar conversions, the Safety Harbor model offers a five-round magazine. The magazine and its housing look quite sturdy and able to survive incidents that you probably couldn't, like being run over by a car or truck. The magazine locks in place in a very interesting manner. The locking lever is in front; pivot to open. The lug on the magazine goes into a slot in the mag housing to the rear, then you lever and press the magazine into place. Once there, you close the locking lever. Why this way? First of all, it is simple and sturdy. Second, the recoil forces are not going to unseat the magazine, in fact, they'll act to keep it in place.

The barrel has a muzzlebrake on the end, and it is quite a ferocious-looking thing. With four slots on each side and internal baffles to scavenge more gas, it looks up to the task. Which is good, because there is a lot of recoil to deal with.

The scope mount is correct for height over the bore, and I was able to clamp a LaRue mount, with my Leupold 3-9X tactical scope on, without a problem. I had a goodly supply of Federal XM33 .50 BMG ammunition on hand, so it was time to lash everything together and get shooting.

That's where the compromises started kicking in. You see, you are not going to be able to swap an AR lower back and forth between your 5.56 upper and your .50 BMG upper. At least not without some work. First up, you'll have to install a hammer assembly with a stronger spring to drive the firing pin with greater force. The primers on .50 BMG ammunition are not like normal primers. They are meant for use in a machine gun, so they require a sharp blow to get their attention. Therefore, Safety Harbor includes a new hammer and spring for use with the upper. Your drop-in match trigger unit, the one you use to shoot small groups? Won't work. Well, it

...YOU MIGHT JUST LOOK ON AN AR LOWER AS A CONSUMABLE.

might, but then again it might not set off the primers. Also, the access slot machined in the bolt, providing clearance to the firing pin, is machined to begin cocking the hammer.

Second, the bolt will not work (the upper won't even close) if you have your bolt hold-open installed. You'll have to remove that to use the AR lower. Finally, the buffer and spring serve no purpose, so you have to remove them, too. And as a final step, you have to take out the buffer retainer plunger. You see, the bolt on the .50 conversion has a slot to provide access to the firing pin to the hammer of the lower. If you try to work the bolt of the conversion with the buffer retainer plunger in place, it simply causes problems and jerky bolt work. Save yourself the hassle; take it out.

Which means we're essentially using an AR lower as a dedicated lower on which to place the .50 conversion.

Once done, the system is large and heavy. The base weight of the 22 inch upper is 15½ pounds. Add the bipod (a wise investment, and Safety Harbor makes a good one), scope, lower and ammo and you have a system that gets really close to 20 pounds. Any other extras you add simply pile on the weight. A 22-inch barrel may not seem like muc. After all, you've packed a 20-inch AR15, right? Well, the 15 pounds you're adding is all out front. And the side-mounted magazine makes it kind of awkward to handle while walking or stalking.

And let me be clear here: I'm not picking on Safety Harbor



The magazine is stoutly made and feeds each round easily.



On the SHTF-50, everything is big and built for use, from the hefty bolt to the long bolt handle for better leverage in working the action.



You can see the brake and the internal gas scavengers.



The bolt handle rides down into this slot, acting as a safety lug for the big .50 boomer.

**WHAT IS IT LIKE TO SHOOT?
AWESOME. TERRIFYING.
SERIOUS WORK.**

on this. All .50 BMG conversions are going to suffer the same things. It is the nature of compromise.

You will be glad for that weight when you go to fire your conversion. Even as effective as the comp is—and the weight helps—you are dealing with major energy. To give you an idea, a handgun for IPSC competition has to generate Major Power Factor. Weight times velocity has to equal or exceed 165,000. A .30-'06 will generate 450,000; a duck load in a 12 3-inch magnum will produce 600,000. Your XM33 round, fired from the SHTF-50, generates a power factor of 1,680,000. That is correct—three magnum duck or geese loads all at once. Ten .45 ACP or even more .223 rounds at once.

What is it like to shoot? Awesome. Terrifying. Serious work. Even with the weight and the comp, if you do not have a secure hold and a solid cheekweld, you will be seeing stars. The comp? I'm sure it helps, as it blew a notebook off the shooting bench next to mine the first time I fired the rifle. You will not make any friends while shooting this

rifle, especially if your club has a covered firing line. Federal makes good ammo, and I'm a more than passable shot. But with the recoil and backblast magnified by the covered line (my club rules don't allow firing except on the line), I was doing good to shoot two MOA. I'm sure I can do better, but that will have to wait until I can get out from under a roof.

The effect of this recoil on your lower receiver is as yet unknown. Theoretically, the recoil of the big Browning should simply reduce your AR lower to a pile of aluminum scrap. After all, each shot is the equivalent of launching more than a dozen 5.56 bullets simultaneously. You'd think that it would only take a few shots to scrap your receiver,

If you want to shoot well, you need to see well. And the recoil of a .50 BMG is going to punish your scope. Buy a good one such as this Leupold or you'll be buying another one later.



ACCURACY & CHRONOGRAPH DATA

Load	Bullet Weight (gr.)	Muzzle Velocity (fps)	Standard Deviation	Average Group (in.)
Federal XM33FMJ	660	2,459	23.7	2.0

Chronograph was a PACT MkIV, two-foot screen spacing. Centered 25 feet from the muzzle. Velocity is the average of five rounds; group accuracy is the average of four five-shot groups.

Left: You'll have to remove the bolt holdopen in order to install your .50 BMG conversion. Right: Save the parts. If you decide you've had enough recoil, you'll need them when you go back to 5.56.



Do it right; use the correct tool. Don't knarf your rifle just because you want to convert it "right now."

but that is not the case. I have not heard of receivers busting right and left. So obviously, the wear is not as great as first thought might indicate. Still, there has to be accelerated wear, so keep an eye on your lower. And if you do bust one, figure out if the cost to fix it is worth it. I figure that at the price of .50 ammo, you will have gone through many times the cost of a new receiver (even if it expires relatively quickly) in your ammo costs, so unless you live someplace where lowers are restricted, you might just look on an AR lower as a consumable. Shoot it until it is too worn to be useful, then scrap and replace it. How much of a problem is this? Simple: Will the first guy who has to do that let us know? We have yet to hear of anyone doing so, so I figure it isn't much of a problem.

Now that we've given you all the reasons you should not have bought that upper, let's look at the good stuff. First, power. The basic .50 BMG loading is a 660-grain bullet (there are loadings with heavier bullets) moving along at 2,700 fps. Now, the XM33 specs assume the ammo is fired from an M2HB, which has a 45-inch barrel. By using one-half the length (the sample I had is a 22-inch barrel), you're going to lose velocity, but not a lot, as the .50 BMG has never been subject to powder improvements. And why should it have been? It has been plenty good enough for nearly a century now. Which leads us to the second part: There are no SAAMI

specs on the .50 BMG, so proceed carefully.

As much fun (and work) shooting this has been, I would restrict my shooting to either current-production Federal XM33, Hornady A-Max or reloads I've loaded that match those specs or come in a bit behind them. This is not a cartridge you try to magnumize, and saving money by buying surplus ammo from Carjackistan is false economy.

But if you have the room (there isn't much that's more fun than busting big rocks a kilometer away) and the wallet, this is a gun that will make all your friends jealous. Just be ready for the recoil. **AR-15**



Left: Shooting a .50 BMG rifle is work. Don't go into it lightly, and don't shoot so much you build bad habits. Right: This is a nice start, and with a bit more practice this rifle should be shooting one-hole groups.

