

SUB TWO

HERE'S HOW WE BUILT
THE WORLD'S LIGHTEST
CENTERFIRE REPEATING RIFLE.

BY GARTH MORGAN | PHOTOS BY MARK FINGAR





The modified magwell of the polymer New Frontier Army lower receiver didn't shave much weight, but the polymer lower parts kit did by comparison to steel parts. It is not a high-round-count rifle, so the project didn't require the durability of metal parts.

THE "GUINNESS BOOK OF WORLD RECORDS" is filled with useful trivia. World's heaviest snake? An anaconda caught in 1960 weighing more than 600 pounds. First jet fighter? The Messerschmitt Me 262 entered service in 1944. World's lightest centerfire repeating rifle? Well, that isn't a record kept by Guinness — but it should be — and it's likely a lot lighter than you think.

Imagine a centerfire rifle that weighs less than 2 pounds. That's almost 1 pound lighter than the iconic Daisy Red Ryder. Instead of BBs, this little wand is chambered for 5.56 NATO. Read on for what may be one of the most unlikely combinations of necessity,



The most ambitious weight savings occurred in the bolt and aluminum bolt carrier, which were milled or omitted. The services of a gunsmith were enlisted for use of machine tools and expertise.



The carbon-fiber MDT grip was skeletonized, a detail that illustrates the great lengths the builders went to shave grams. Despite the modification, the grip supports firearm handling.

imagination and talent a team has ever created.

NECESSITY

I'll call myself the necessity part. To make life easier, I've been building and carrying lightweight gear and rifles in the mountains of Alaska for 30 years. A few years ago, I developed what I refer to as "Ultralight-



Together, the custom stock and handguard weigh a little more than 3 ounces. (Yes, you read that right.) Minimalist may be an understatement for these components, but each serve the mission.

Ultralight” (UL-UL) hunting rifles. These rifles are based on the AR-15 platform but are straight pull and manually operated. My lightest rifles weigh 2 pounds, 10 ounces bare, and I have taken multiple deer, hogs, black bears, moose and grizzly with them. Building those rifles taught me a lot, but my focus was on the lightest hunting rifles I could build. Building one almost a pound lighter? That required imagination even greater than mine.

DREAM BIG

One day I got a call from David Faubion, editor of Guns & Ammo Book of the AR-15 magazine (\$12,



Gunsmith Ned Christiansen assisted with machining metal from the barrel extension and reducing the barrel profile. The result is remarkable and is evidence of his talents.



Don't try this at home! Modifying the bolt carrier and bolt is ill-advised. It was only done to explore how light an AR-pattern rifle could be made, but it certainly reduced the parts' longevity.

osgnewsstand.com). Faubion has a better imagination than anyone I know and was he familiar with my rifles. He had already built multiple lightweight rifles similar to mine. He asked, “Do you think we could build one of these rifles under 2 pounds? It would be the lightest centerfire rifle ever made.” Being ever the optimist, and knowing the parts Faubion already had available,



The lower receiver parts kit feature components made of a durable polymer to maximize weight reduction. Aluminum takedown pins from GWACS Armory secure the upper receiver to the lower. **\$17**



Note the screw attaching the grip to the lower receiver. It's white because its made from a strong and lightweight nylon. "Ounces make pounds," some say, but grams make ounces.



Famous for being a lightweight option compared to metal magazines, the 10-round polymer magazine is one of the heaviest single components completing the ultra-light project.



The trigger springs are metal, but the hammer is polymer. Many are hesitant to use polymer for such an important part, but it functioned without issue.

I replied confidently, "Yeah, I think so." A week later, after hours of discussions on how we could make this project happen, his ultralight straight-pull AR-15 arrived at my home in Alaska along with his blessing to do whatever was necessary to make weight.

PARTS & PIECES

We had talked about a lot of ideas and tricks that would cut weight tremendously, such as a titanium tube permanently attached to the end of a 4-inch barrel, but we decided that this wouldn't be a true "rifle." To earn this descriptor, we'd need a 16-inch rifled barrel and functional stock and handguard — no workarounds.

The core of the rifle was a polymer upper, polymer lower and polymer lower parts kit. My first thought was, *What parts can I remove?* Pulling out the already shortened DSA aluminum carrier, I asked myself if a straight-pull AR-15 needed a gas key atop the bolt carrier. It turns out that the bolt-handle worked fine to keep the bolt carrier aligned, so in the first 5 minutes the gas key and its bolts were gone and we'd lost an ounce. That may not sound like much, but it was

a good start. Those tiny wins were exactly what was required take to achieve our record-setting goal.

After shaving weight by skeletonizing parts of the lower, the carbon-fiber MDT grip and other parts, removing anything not completely necessary and replacing steel with polymer where possible, the next step was to build the lightest stock and handguard possible. Fortunately, the UL-UL rifle build turned me into a walking database for sourcing lightweight AR-15 parts. I already had the lightest barrel nuts, carbon-fiber tubes and other parts, I just had to make the already lightweight stock and handguard lighter — a lot lighter. The guys at Cain Arms (cainarms.com) were helpful along the way. They are regarded for making custom parts for various stock designs. After some experimentation, trial and error, many discussions and a lot of thinking, we finally had a functional stock and handguard for the rifle. Together, the stock and handguard barely tipped past 3 ounces. They had helped us cut almost 7 ounces from where we started. We were almost there. For the last part, we needed a professional to cut enough weight to break the 2-pound barrier.

The UL-UL project rifle was equipped with a sight, magazine, ammo and suppressor for practical use. It tested 3.4 ounces lighter than a Daisy Red Ryder BB gun. Chambered for 5.56 NATO, the record-setting project could foreshadow the ultimate backpack rifle.



The fluted muzzle in front of and behind the shoulder were innovative ideas by gunsmith Ned Christiansen. Without such details, the sub-2-pound objective would never have been achieved.

ADDITIONAL TALENT

Gunsmith Ned Christiansen is a world-renowned builder of Model 1911 pistols, a metallic artist with the lathe and mill, and a friend and contributor to Guns & Ammo's Special Interest Publications (SIPs). He not only agreed to help but was pleased to lend his time and talent to make firearm history and set this record.

Christiansen cut almost 2 ounces from the incredibly lightweight Shaw barrel (shawcustombarrels.com). He turned it into a work of art, complete with a removable carbon-fiber stiffening sleeve to protect the barrel from

bending should it gets caught on brush afield. Along with the barrel, Christiansen unleashed his milling talents on the bolt, bolt carrier and other small parts with the common theme: Remove anything not strictly necessary. Soon after, the lightened parts were returned to Alaska for assembly.

MISSION ACCOMPLISHED

Faubion picked up the phone. "You ready?" I asked. "We did it. We're at 1 pound, 13.9 ounces." We had managed to build the world's lightest centerfire rifle. I told Faubion I'd come up with some ways to make it even lighter, but by this time the goal was met and it was time to complete the project — for now, perhaps.

The one-of-a-kind rifle, ready to shoot, is unbelievably lightweight. With a Shield RMSc and polymer mount, it's still less than 2 pounds. Even with a titanium Airlock Nano suppressor and a full magazine, it's lighter than our Daisy Red Ryder BB gun by several ounces. But it didn't look right, so it was sent to Unknown Munitions (unknownmunitions.com) where professional artists cleaned up our shoddy Dremel work and applied a stunning Cerakote job.

Is it practical? Not really. It is usable and surprisingly accurate for a 2-pound rifle, though. Its purpose isn't to be a field rifle. Until proven otherwise, it holds the unofficial "World's Lightest Centerfire Repeating Rifle" record. Guinness, let's make it official. 