

Cast bullets for the **.500 Jeffery**

by David Commens



If you have ever tried to find loading data for obscure big-bore calibres, you may relate to this article. If you have ever tried to find cast bullet loads for the same calibre, you will most certainly relate to this article.

I enjoy shooting my big-bore rifles and I'm predominately a target shooter, as lack of time always seems to keep me away from the hunting fields. The cost of shooting these larger calibres is ever increasing, which is one of the reasons for my appetite for making and using cast bullets and for developing loads to suit them.

Another reason is to help smooth out the slightly rough barrel in my .500 Jeffery. When shooting jacketed bullets, it tends to copper foul quite badly. When I bought my .375 H&H, it had seen time in the Northern Territory, but had never been cleaned properly and was heavily fouled. Once I had removed all of the copper fouling, I proceeded to give it a diet of 250-grain cast projectiles and 22 grains of Blue Dot. I shot Field Rifle with it and practised whenever I got the chance. I found that after around

1000 cast bullets, the barrel was considerably smoother and it looked like a mirror. I am hoping for the same result with the .500 Jeffery.

My rifle was built on a budget, but as the results show, it shoots exceptionally well. The action is a plain old M17 of Eddystone manufacture. I can almost hear you all groaning already, but M17s are reliable, easy to work on and most importantly, are long enough. Mine has been modified with a cock-on opening kit, adjustable trigger and a very beefed-up firing pin spring.

The barrel was made by Sprinter. It is 26" long with a one in 23" twist. The stock is a laminated one from Boyd's Gunstocks and has the mandatory Limbsaver recoil pad. Sights comprise a bead front-sight and a vintage Redfield receiver-sight. The all-up weight is 10lb 14oz. The rifle was built by Jim Kent of Buffalo Gunsmithing and the workmanship is of Jim's usual high standard and is a credit to his talent.

My rifle happily feeds the very wide rebated cases and extracts and ejects without any problems. I built this rifle to

A 350-grain Mountain Mould, left, 450-grain RCBS, 500-grain Mountain Mould, 550-grain NEI, 535-grain Woodleigh round-nose soft-point and 535-grain Woodleigh PR.

compete in group three events in the Big Game Rifle discipline. While it's not a Jeffery, Rigby or any other high-end make, it works, it shoots and it got me competing in another event.

Now to the loads and how they shoot. Please remember that the following loads are safe in *my* rifle and if you wish to duplicate any of them, take the appropriate precautions, work up slowly and concentrate on what you are doing.

The jacketed bullet load I use for competition comprises a 535-grain Woodleigh round-nose soft-point and 105 grains of AR2208 for 2230fps. The cases are by Bertram and Federal 215M primers are used. The recoil certainly gets your attention, but surprisingly, shooting from the bench with these loads is not all that bad. Accuracy is very good too, with 50m groups as small as 25mm being shot with regularity. I have not bothered trying other

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weights or manufacturers' projectiles, as this combination shoots well enough for its intended purpose. As a bonus, I'm quite sure it will work superbly if I ever take this rifle hunting.

Bullet moulds in .51" diameter are not exactly an off-the-shelf item. I have three moulds myself and have access to a fourth. The lightest weight mould is a 350-grain conical-point gas-checked mould from Mountain Moulds. The next one is a special-order mould from RCBS; it's a 450-grain semi-wadcutter plain base and looks like an overgrown semi-wadcutter for a .38 Special. My third is another mould from Mountain Moulds, a 500-grain gas-checked semi-spitzer type and my fourth and heaviest mould at present is an NEI 550-grain gas-check mould, again a semi-spitzer.

I like the Mountain Moulds from Idaho, as they have an online design program where you can design the cast bullet of your dreams and Dan will lathe bore it for you in brass, aluminium or iron. Both of the designs I have from them are made so the gas-check is still in the very short neck of the .500 Jeffery.

Incidentally, Hornady .50-calibre gas-checks are not suitable in .51"-diameter rifles. Instead, they are designed for the

.500 S&W cartridge. The gas-checks I use are Larry Blackmon's 'Gator-Checks' from Louisiana. The bullet lube is LBT Blue, which is about the best lube I have ever used. It undoubtedly gives better accuracy, higher permissible velocities and less (nil) leading than any 50/50 blend available.

As mentioned, the barrel on this rifle is quite rough and copper fouling was quite bad. Interestingly, after firing around 20 cast bullets and being lubed with LBT Blue, the copper fouling was gone. I had to repeat this to see if it was a mistake, but it really works every time and no, the copper was not replaced by lead. Firing 20 cast bullet rounds is much more fun than a cleaning rod loaded with Sweets solvent and a few hours of my time!

After many hours of internet searches, I was able to locate one load for cast bullets in the .500 Jeffery. The load consisted of a 550-grain bullet and 30 grains of Unique for 1400fps. This was the first load I tried myself, hoping to establish a baseline to develop other bullet and powder combinations. This load chronographed 1393fps and clustered five rounds into 32mm at 50m every time I tried it. Please remember that all velocities and group sizes are not from a single five-shot group. All loads were repeated on three occasions and sometimes

months apart. This gives a far more realistic picture of how the load is performing. Usually, two five-shot groups were fired at each sitting.

The next series of trials was to see what difference various primers made to the group size and velocity. Four different primers were used: Federal 210M, 215M Remington 91/2 and Winchester STD Large Rifle. The load was the abovementioned 550-grain NEI bullet and 30 grains of Unique. Results are listed in Table 1.

Table 1: Testing different primers

Primer	Velocity	Group size
Federal 210M	1410fps	32mm
Federal 215M	1387fps	26mm
Remington 91/2	1392fps	32mm
Winchester Large Rifle	1387fps	40mm

It is interesting to note the velocities are within 25fps, but that group sizes varied considerably and yet, the Winchester primers are by far the best with cast bullets in my .308 Winchester. You just never know what will work the best with ballistics!

Still using the 550-grain NEI bullet, I tried a load of 35 grains of AR2205. Velocity was 1240fps, which is a bit low, but it put all five rounds into groups of less than 25mm at 50m. More work is needed with AR2205,



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A .223 Remington, left, .308 Winchester, .375 H&H Magnum, .404 Jeffery and .500 Jeffery.

as I feel it has the most promise.

Next, I tried 46 grains of Blue Dot and this one certainly got my attention. It chronographed 1750fps and felt like it too! Groups averaged a shade less than 38mm. I shot this one at 100m on a few occasions as well and the average group size was 45mm, which I consider very good for an open-sighted big-bore rifle with cast bullets.

The 500-grain Mountain Mould is only a recent addition to the collection and not a lot of work has been done with it. However, the 30 grains of Unique load chronographed at 1540fps. I then tried different sizing diameters, .51" and .512", and it seems that this rifle has a preference for the smaller diameter, with one group measuring .735" centre to centre at 50m.

The 450-grain bullet comes from a mould owned by a friend of mine. It belongs to the limited-production range from RCBS and casts just as perfectly as every other RCBS mould I have ever used. As mentioned, it looks just like an overgrown semi-wadcutter and cuts very clean holes in paper targets. It's a plain-base design, which makes it a bit cheaper to shoot - .50-calibre gas-checks aren't that cheap after all. The standby load of 30 grains of Unique chronographed these at 1500fps, which is about the upper end of what I usually allow for a plain-base bullet without the headache of barrel leading.

The newest mould purchased is the lightweight 350-grain conical point. I had this one made with a gas check, permitting higher velocities. I decided to try a lightweight mould, as shooting 500-grain-plus lead bullets uses up an awful lot of lead after a

The M17-actioned rifle in .500 Jeffery.



while and I am yet to find a 50m pistol target that a 350-grain bullet won't kill.

The results with this bullet were a real surprise. I still used the same powders that were used with the 550-grain bullet, but I changed the bullet weight. The 30 grains of Unique charge chronographed 1750fps and I increased the AR2205 charge to 40 grains for a velocity of 1550fps. The real barnburner was the 46 grains of Blue Dot load; it left the barrel at an amazing 2135fps with absolutely no leading. This load has a muzzle energy of 3500 ft-lb and would be very effective among a mob of feral pigs. Groups for this bullet averaged out at 32mm for all charges and velocities.

Another point of interest: all loads, except for the 350-grain bullet with 46 grains of Blue Dot load, shot to point of impact. The light bullet load shot around 100mm higher, obviously due to barrel time and the higher-than-normal velocity.

I have a few rifles in my safe, but this has been, and continues to be, one of the most enjoyable rifles I have had to develop loads for. I'm sure it's partly because very few loads are ever published for

lead bullets in big-bore calibres. The biggest satisfaction is to have your own cast bullets shoot nice, small groups with loads you have designed yourself. After all, isn't that what we all hope to achieve by handloading? ●

Table 2: The combination of loads for all cast bullets with Bell cases and Federal 215M primers

Powder name	Powder weight (grains)	Bullet weight (grain)	Velocity (fps)
Unique	30	350	1750
AR2205	40	350	1550
Blue Dot	46	350	2135
Unique	30	450	1500
Unique	30	500	1540
Unique	30	550	1393
AR2205	35	550	1240
Blue Dot	46	550	1750
AR2208	105	535 Woodleigh	2230



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