

## The 404 Jeffery – The Elephant Rifle!

In 1905, W J Jeffery first advertised a brand new cartridge, the 404 (actually .423 calibre) making it the first dangerous game cartridge designed for magazine rifles.

**THE NEW ·404 RIFLE.**  
**JEFFERY MAUSER MAGAZINE ACTION.**  
**1905 MODEL. RIMLESS CARTRIDGE.**

Charge, 55 or 60 grains of Cordite, velocity 2,200 feet per second. Striking force nearly 4,000 foot pounds. With the new flat strip cordite the velocity and striking force are about 20 per cent. higher, without increase in pressure. 400 grain Nickel Covered Bullets. Flush Magazine, holding three cartridges, and admitting of the bolt being closed on one cartridge in the barrel, thus enabling four cartridges being fired without re-charging.



(The illustration represents a Rifle with Hair Trigger.)

No. 1 Model, ·404 Jeffery Mauser Action Rifle, plain finish, Pistol Grip Stock, Chequered Grip, 24-inch Steel Barrel, Standard, Two-leaf, and Tangent Back sight, Ivory Bead Fore-sight on Socket Block, Roughened Iron Heel-plate with Trap for Cleaning Rod, Eyes for Sling, accurately sighted	£15 0 0
No. 2 Model, ·404 Jeffery Mauser Best Quality Rifle, with 24-inch Q.S. Nickel Steel Barrel, best quality Back-sight with Standard and Four Leaves, or with Standard, Four Leaves, and Tangent, Ivory Bead Fore-sight on Socket Block, Selected Walnut Stock, Chequered Pistol Grip, and with Roughened Iron Heel-plate and Trap in Heel for Rod, Eyes for Sling, Ordinary Trigger ...	£25 0 0
No. 3 Model, ·404 Jeffery Mauser Rifle, with perfectly plain Straight Grip, Military Pattern Butt, Standard, Two-leaf, and Tangent Back-sight, Platina Tipped Bead Fore-sight, Ordinary Trigger ...	£12 12 0

The No. 3 Rifle is designed for those sportsmen who require a sound rifle, of military finish, at a moderate price.

These Rifles can be had with Jeffery Peep-sights fitted on the tail ends of the bolts. Price of Sight, including fitting, 2/- (See Page 59).

Being a specialized African cartridge that had never been chambered by any mainstream USA gunmaker the 404 remained relatively obscure to Americans and Australians for almost 100 years.

All this changed a few years ago when Winchester and Remington released a barrage of new magnum cartridges based upon the 404.

Why did they choose the 404? What makes it so special?

The cartridge was derived from the 450/400NE case and shares the same base dimension, approximately 0.550 inches, as a whole raft of British cartridges. However the protruding rim of the 450/400, designed for break open double rifles, was replaced with a slightly rebated rim of 0.537 inches to ensure smooth feeding in magazine rifles in addition the case was shortened to 2.87 inches to fit a standard Mauser 98 action.

The 404 became an instant hit and ever since has been the standard by which dangerous game cartridges have been measured. Westley Richards responded in 1909 with their 425 magnum (actually .435 calibre) also based upon the 450/400 and Rigby joined the fray with their 416 (Surprise - it is actually .416 calibre) in 1911.

Why did the 404 endure and achieve universal popularity throughout Africa whilst the 425 and 416 remained relatively obscure? As with most popular products, good design was the major factor.

The 425 had a short career due to its inherent design weakness of a small, thin, rebated rim designed to fit the standard 7mm Mauser bolt face. The rim proved inadequate for reliable extraction of the large, fat case under field conditions when the build up of residue or any dirt in chambers caused sticking and failed rims. The 416 Rigby, whilst lauded by various writers over the years, also found few friends due to its oversized case and extreme length, requiring an expensive magnum action. Availability was also restricted due to Rigby's retention

of the cartridge as their exclusive proprietary design. This meant that for 50 years it was only available in very expensive Rigby rifles.

In contrast the 404 operated at modest chamber pressures, essential in hot climates with cordite powered rifles, and would fit standard Mauser actions as well as the British P14, produced in large numbers for the 1st World War. The 404 was also released to the trade by Jeffery and numerous British and continental makers quickly began production of thousands of reasonably priced rifles.

As a result the 404 became the standard dangerous game rifle throughout Africa in both the British and German colonies. It was adopted as standard issue by most game departments, including those countries now known as Zimbabwe, Zambia, Kenya and Tanzania, only Uganda held out equipping its staff with the 425WR. Its use was so universal that when someone spoke of his 'elephant rifle' it was taken as read that they were referring to the 404 unless otherwise specified. This label stuck until the 1970's.

John 'Pondoro' Taylor, perhaps the foremost authority to write on African cartridges nominated the 404 as his choice for an all round rifle stating '...Amongst the definitely genuine "all round" rifles there is only one which comes up to these requirements, Jeffery's 404.'

The 404 began to lose popularity in the late '60s, not because of any failing but rather as a result of the former colonies receiving their independence. With independence came a general decline in law and order and the priority of game departments changed from control of over populations and problem animals to saving them! The incidence of poaching on an organized scale exploded overnight and the target now became poachers. Small bore automatic weapons became the standard issue and the 404's were parked up for dealing with the occasional rogue animal whilst the 308SLR was carried in the field. Independence also limited the opportunities for the British to hunt Africa and the British gun trade quickly declined.

Only a few, high end, producers turning out hand made top of the range shotguns and the occasional nostalgic double rifle are still in existence today.

With the decline in use of large bore rifles Kynoch, the only British producer of centrefire ammunition, ceased production in the 1960's. Whilst RWS continued to produce ammunition for the 404 many of the rifles so chambered were reaching the end of their useful life. The USA had never chambered rifles for any large bore British cartridges so the 404 began fading from the scene.

This resulted in an increase in the use of the 375H&H, a cartridge that most professionals consider too light for secure use on wounded game, now common with the proliferation of poaching.

The 458 Winchester was the only other cartridge for which reasonably priced mass produced rifles were available. The 458 became the standard dangerous game rifle for the next two decades despite its shortcomings of lack of penetration and the early compressed charges resulting in unreliable ammunition.

In 1989 Federal began offering 416 Rigby and 470NE ammunition. Remington introduced their 416 Remington in 1989 and Ruger began chambering rifles for the 416 Rigby as well as a few 404s. In 2004 Hornady began making 458 Lott ammunition and Federal now also offers this. The Kynoch brand was resurrected in the early 1990's offering most large bore British cartridges including the 404. However Kynoch ammo has two major drawbacks, it is hideously expensive and the 404 offering is grossly underpowered, duplicating the original ballistics which have been superseded for 90 years! RWS re-commenced production of 404 ammo in 2005. In succeeding years Hornady and Norma also commenced production of 404 ammo.

Where does all this leave the 404? It is still a popular big game chambering in Europe and most small manufacturers offer it

In the UK the W J Jeffery name has been resurrected and you can purchase the genuine article for a mere \$14,000 upwards.

What did the 404 offer that made it so effective? The original loading delivered a 400gr bullet at 2125ft/sec for a muzzle energy of 4020ftlbs – hot stuff in 1905.

This was stepped up to 2224ft/sec and a muzzle energy of 4400ftlbs several years later once Kynoch mastered improved cordite powders. In 2002 I chronographed some 404 Kynoch ammo produced in the 1960s to the horror of my ammunition collecting friends! The three rounds of 40 year old ammunition achieved velocities of 2211, 2245, and 2197 ft/sec respectively out of my 25 ½ inch barreled 404 for an average muzzle energy of 4360ft/lbs.



**This Kynoch ammunition is still performing close to specification after 40 years.**

In the 1950's the German manufacturers, RWS and DWM, with the availability of superior nitro powders, set the load at 2315ft/sec for a muzzle energy of 4770ftlbs. This has been the standard ever since. These are impressive figures, exceeding the claimed performance of the 458Win Mag and producing far better penetration. However, in contrast to the 458 Win, and 416 Remington the 404 case has considerable room to improve performance with modern powders. This is particularly so with our home grown powders from ADI (Now Thales Australia / most Hogden Powders are actually Australian made ADI powder.)

It is possible to safely achieve muzzle velocities around 2500ft/sec for a muzzle energy in excess of 5,500ftlbs but this will be mostly wasted on all animals with the possible exception of bull elephants as complete penetration on Cape buffalo etc will be achieved with the standard load using solid projectiles.

The really exciting development that has flowed from the 404 has been the recognition of its excellent design features that maximize the potential of standard long action rifles.

This is the proliferation of modern cartridges based upon the 404.

The first to see the potential were Lazzeroni, Dakota and NASS who collectively produced a total of 12 different proprietary cartridges based upon the 404.

In the early 2000's both Winchester and Remington jumped upon the band wagon with a series of Super Short, Short and Long Ultra magnums based upon the 404. Whist Remington acknowledges their parentage Winchester claim their line to be an entirely new design.

However it is impossible to detect any meaningful difference between the base and rim size of the Jeffery, Winchester and Remington offerings with the naked eye.

Perhaps Winchester was genuinely ignorant of the existence of the 404 and just arrived at the same result 100 years later through independent research?

Notwithstanding there are now no less than 11 cartridges on offer from the mainstream USA ammunition manufacturers based upon the 404.



**Top: 425 Westley Richards and 404 Jeffery. Although they shared the same case diameter the small, thin rim of the 425 was a fatal design flaw.**

**Bottom: 300 WSM and 404 Jeffery. There are no new ideas in the gun trade, the family of WSMs follows exactly the same path taken by Jeffery themselves in 1908 when they shortened the 404 and necked it down to produce the very successful 333 Jeffery Rimless**

**Just 2.48 inches in length ( the Winchester cartridges are 2.1 inches) the 333 Jeffery produced similar levels of muzzle energy, 3,480ft/lbs, to Winchester's latest offering, the 325WSM, a century later!**

However if you wish to own a 404 Jeffery you will need to purchase an expensive European offering or have one made up by a local gunsmith. Having your own rifle made in Australia can actually cost little more than purchasing a mass produced big bore rifle. All you require for a 404 is a standard Remington 700, Sako, Mauser 98 pattern or similar sized long action rifle and have a gunsmith fit a replacement barrel in 404 and open the bolt face to suit plus a little rework the feed from the magazine. Depending on the price you pay for the original rifle the total cost can be under \$2000 which is less than a Remington in 416 or Ruger's 416 Rigby.

Most mass produced rifles are too short in the length of pull, being made to fit shooters from around 170cm (5' 7"). Whilst most shooters can tolerate this in standard cartridges it is a different matter when you are holding 5000ftlbs of energy. The added expense of a custom stock to suit your frame with a second cross bolt to anchor the action is also recommended to make the recoil more tolerable. Around \$800 will get you a custom stock in good quality, strong, straight grained walnut.



**Author's, much used 404 Jeffery built on a Sako LH L61 action.**

#### **Loading the 404 Jeffery**

Whilst ammunition is available in Europe and the USA for most cartridges over 400 calibre precious little, with the exception of 458 Win, ever finds its way to Australia.

When it does the prices usually start around \$10 /shot and spiral upwards depending on the rarity of the cartridge. Consequently all users of heavy rifles reload. When you consider you can buy a complete RCB reloading kit and dies for the price of 60 rounds of factory ammo acquiring a heavy rifle is a great justification to put to your spouse for getting into reloading.

The 404 has plenty of case capacity and can be loaded to produce impressive performance. However this is simply not necessary as the 400gr, 423 calibre, bullet has ample penetration for all game when driven at 2300ft/sec as the recovered bullets illustrated here demonstrate.



1. Woodleigh 400gr Solid
2. Woodleigh 400gr Solid from cape buffalo, frontal chest shot, recovered under skin of buttock.
3. Woodleigh 400gr Solid from water buffalo, brain shot, recovered in shoulder muscle.
4. Woodleigh 400gr Solid from elephant, brain shot, recovered in skull after penetrating approx 650mm.
5. RWS 400gr nickel plated Solid
6. RWS 400gr nickel plated solid from water buffalo, frontal shoulder shot, recovered from offside rear leg.
7. Woodleigh 400gr SN
8. Woodleigh 400gr SN, frontal head shot on charging water buffalo, recovered in neck with 70% weight retention.

My standard / recommended loads are highlighted in the table on the following page  
(AR 2208 is marketed in the USA as Hogden Varget)

Magnum primers should be used with this large case for effective ignition. Woodleigh solids have extremely tough steel jackets and require slightly reduced powder charges. Bertram cases are readily available. Norma 404s are sometimes around and doubtless Hornady cases will be available from time to time. There is no need to go past Woodleigh projectiles, they are the best for any large, dangerous game hunting and the cheapest available to Australian shooters.

**Caution:** reloading is potentially dangerous and all loads here have been worked up in modern firearms or ballistic test barrels. Starting loads should be reduced at least 10% and cases checked for pressure signs regularly as loads are worked up.

	Bullet & Weight grains	Primer	Load grains	Muzzle Velocity ft/sec	Muzzle Energy ft/lbs	Barrel Length Inches	Data Source
Factory Load	401 RWS SN & FMJ	?	-	2315	4770	25.5	RWS
IMR4064	400 A Square DT	?	76	2295	4670	26	A Square
Reloader 15	400 Woodleigh SN	mag	75.5	2220	4380	23.6	RWS Manual
Somchem 365	401 RWS FMJ	CCI250	84	2506	5570	?	K Luckhurst SA
Reloader 12	400 Woodleigh SN	Fed215	86	2400	5110	25.5	Author
<b>AR 2008</b>	<b>400 Woodleigh SN</b>	<b>Fed215</b>	<b>79</b>	<b>2310</b>	<b>4730</b>	<b>25.5</b>	<b>Author</b>
AR 2008	400 Woodleigh SN	Fed215	81	2400	5110	25.5	Author
<b>AR 2208</b>	<b>400 Woodleigh FMJ</b>	<b>Fed215</b>	<b>78</b>	<b>2330</b>	<b>4810</b>	<b>25.5</b>	<b>Author</b>
AR 2208	400 Woodleigh SN	Fed215	85	2460	5350	25.5	Author
<b>AR 2008</b>	<b>350 Woodleigh SN</b>	<b>Fed215</b>	<b>85</b>	<b>2510</b>	<b>4900</b>	<b>25.5</b>	<b>Author</b>
AR 2008	350 Woodleigh SN	Fed215	88	2600	5250	25.5	Author
Reloader 12	347 Woodleigh SN	Fed215	90	2580	5120	25.5	Author



Water Buffalo taken by visiting left handed hunters with the author's 404 Jeffery