COMPACT CARTRIDGES NUMBER 7

10.75 X 68 MAUSER

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No doubt the words Compact Cartridges suggest small cased rounds, however, this is not necessarily correct. When we compare the .358 Norma Magnum to the shorter .350 Remington Magnum we find the still quite powerful Remington round is indeed a compact cartridge. Using the same criterion we find the 10.75 x 68 is a very compact cousin of the .404 Jeffery, or as it is known in Europe, the 10.75 x 73.

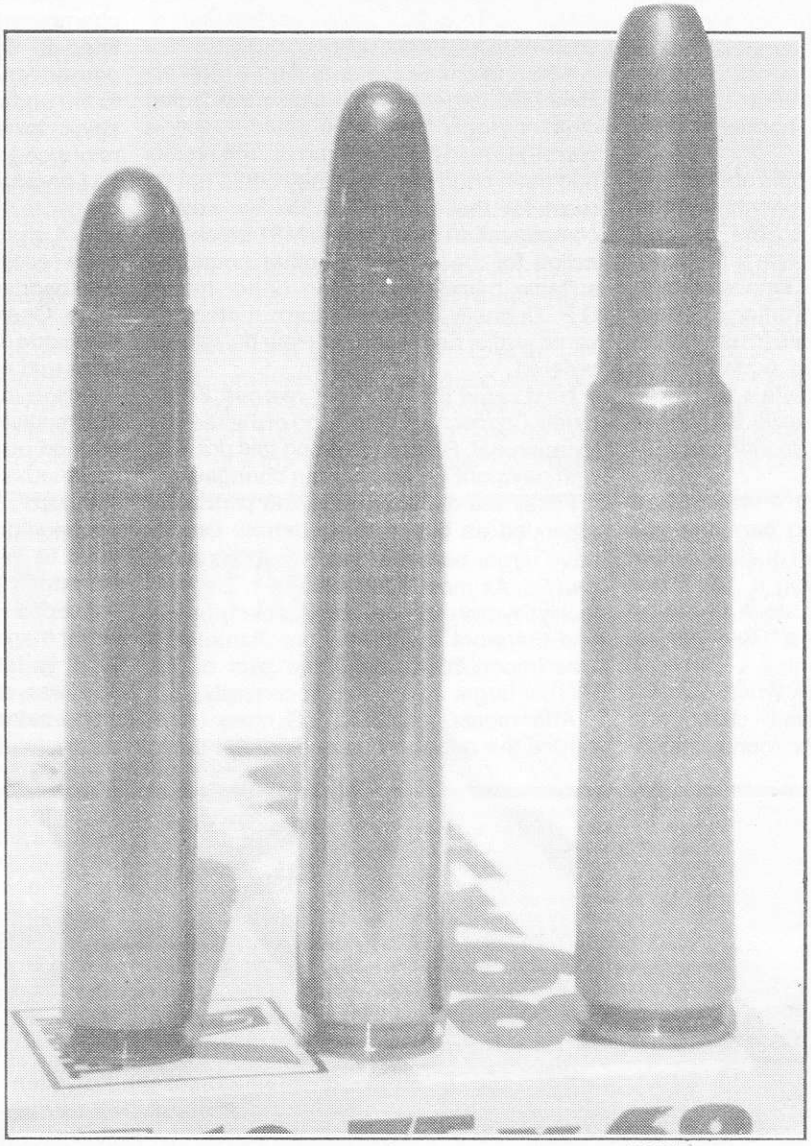
Before we go too far, perhaps it is wise to look a little more closely at the 10.75 round. According to that oracle of cartridges, Frank Barnes, the 68 mm case is one of a number of 10.75 mm rounds developed between the turn of the century and the mid 1920s.

They range from the 10.75 x 57 based on the standard 8 x 57 Mauser case to the .404 Jeffery. Some like the 10.75 x 65R Collath were straight rimmed rounds made for single shot rifles.

A forerunner of the 68 mm case was the rebated rim 10.75 x 63 Mauser. Although the 10.75 x 63 had the same case length and rim diameter as a .30-06, the body diameter was made a little larger so there would be a slight shoulder for headspacing. Despite being easily adapted to standard length Mauser actions the 10.75 x 63 was superseded in the 1920s by the very similar 10.75 x 68.

The newer case actually had little extra powder capacity as its projectile was deeply seated so the cartridge would fit a 8 x 57 military magazine. The other important change was an increase in rim diameter from 12 mm (.473") to 12.4 mm (.488"). The 68 mm round overcame any difficulties which may have arisen from the rebated rim 10.75 x 63.

After experimenting with rebated rim cases like the .284 Winchester I can readily understand the reluctance of dangerous game hunters to use a cartridge which may not always have fed correctly. I have never seen any account of failure-to-feed problems in relation to the .425 Westley Richards.



10.75 x 68 *.404* *.416 Rigby*

The .425 was another of the rebated rim rounds used successfully on all types of big game.

Cartridges with a rim size similar to the 8x57 could be fed into the magazine from stripper clips just like military rounds. Naturally the ease and speed of reloading must have appealed to some hunters. Informed opinion would suggest that provided the magazine was constructed correctly and the feed rails were properly ground, the RR cases would work perfectly.

Any real problems seemed to result from poorly made rifles. If the round does not sit high enough to be picked up by the bolt, either it is pushed back into the magazine or the bolt catches the rear of the case in front of the rim and jams the rifle completely. Faced with either of the possibilities as an elephant reaches hand to trunk combat range it is not hard to see why RR cases lost popularity.

Although it gained a reasonable acceptance in Africa the 10.75 x 68 still had a few drawbacks of its own. Rifles in this calibre were usually made by fitting a relatively lightweight barrel to an ex-military Mauser 98 action and German style toothpick stock. The end result was a quick handling and relatively cheap rifle capable of taking big game under most conditions.

Some accounts of the 10.75 would suggest bullet construction may not have been totally adequate for all situations. Actually a number of bullet styles were made by RWS and DWM. Although only the 347 gr VM (full metal jacket) is produced now the range of projectiles once included various soft point types. Having seen sectioned samples of the current RWS 347 and 401 grain projectiles, I doubt there would be any complaints about the strength of to-day's steel jackets.

The other point which adversely affected the 10.75 was recoil. A combination of heavy projectile and light rifle meant very

heavy recoil. Just as well these early rifles were not fitted with scopes or many of the owners may have suffered from an early dose of "Weatherby eyebrow".

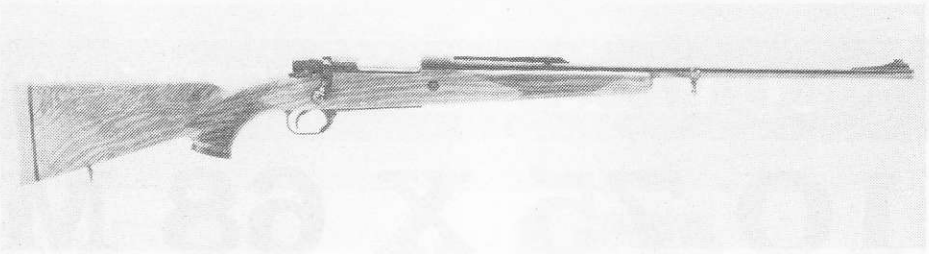
At present I know of no arms manufacturer still making rifles in 10.75. The last advertisement for such a rifle appeared on the back of an Australian magazine about 15 to 20 years ago. Apparently BRNO had been supplying these rifles to a rapidly shrinking market. Other similar rifles were occasionally imported from the Belgium makers F.N. Browning and Dumoulin, however, the 10.75 was not a calibre stocked by the average gunstore.

Obviously apart from buffalo hunting this cartridge has little application in Australia except for target work. Now that some interest is being shown in big game rifle target shooting perhaps thought should be given to suitable cartridges. So far these events seem to be "come as you are" parties where the rifle you happen to have is the rifle you use.

I do not propose that people should start down that very expensive benchrest route and handmake custom bullets for their .458's but subtle changes like a reduction in recoil by the use of a smaller factory cartridge may be an advantage. These matches require competitors to use factory loads or their handloaded equivalent. In rifles of equal weight and style a 10.75 x 68 pushing a 347 grain projectile is going to kick less than a .404 and its standard 401 gr. load.

Having used Ron Webb's .404 I know just how accurate the big cannons are, provided they are built from quality components. The idea of building a 10.75 has been on the back burner since I read an account of this cartridge in a "Guns" magazine about 15 years ago.

Until more recent times when Eurocut began importing projectiles, cases and loaded cartridges for metric rounds including the .404 and 10.75 x 68, the idea remained dormant. Once these became available the thought of a 10.75 became irresistible. To build such a rifle, the first requirement was a barrel.



Having used mainly P.H. parts it was hardly surprising to find the 10.75 x 68 test rifle closely resembled a new M81 African factory rifle. M81s now are chambered for .375 H & H, 9.3 x 62, 300 H & H and .300 Win. Mag.

About this time I was testing a Parker-Hale M85 target rifle so I asked managing director Roger Hale if he could supply a barrel. He said the entire run of .404 blanks had been chambered so they could not be recut for the smaller 10.75. By way of compensation he offered a M81 stock and action for the project. Another source of suitable barrels is Oregon barrel maker C.P. Donnelly. A blank approximately the same profile as the Parker Hale barrel was ordered.

Next came the chamber reamer. Fortunately Clymer sent a drawing of the reamer for approval. Before returning this drawing with payment I made certain changes.

Firstly the dimensions of the pilot were amended as button rifled barrels usually have larger bore diameters than cut rifled barrels. As most 10.75s made in the past using Clymer reamers had deeper grooves and therefore a smaller bore diameter, it was important to make the pilot of the reamer larger so it would fit correctly.

After measuring the R.W.S. brass I concluded the neck and base diameter could be a little tighter so these were altered before the drawing was returned. Not surprisingly all this luxury has its price and the total cost of reamer freight, duty and sales tax was $185. I wonder how far the project would have proceeded if I had known the eventual cost when I started.

The Donnelly blank was threaded and chambered by Tom Williams before being fitted to the PH action. Quite often big game rifles have an extra recoil lug sweated to the underside of the barrel. Parker-Hale stocks for their M81 African series are well reinforced around the action recoil lug area so I decided not to fit a second lug. Some big game rifles are bedded along the entire barrel channel. Since the barrel had no extra recoil lug it was left free floating and only bedded around the receiver and reinforce. Open sights are still widely used on big game rifles so a PH quarter rib rear sight and ramp front were also fitted.

Action modifications for the slim 10.75 are relatively few. The bolt face must be opened out by about .5 mm (.020") to accommodate the slightly larger rim. While a standard .30-06 length magazine will accommodate the 10.75, the feed rails may have to be widened slightly to allow the cartridges to slide up into the chamber.

Scopes for big calibres need not be any larger than 6X in fixed power types and 2X-7X in variables. I chose a 2X-7X Redfield and was advised Parker Hale alloy two piece mounts would hold this scope securely. Despite having some doubts I sim-

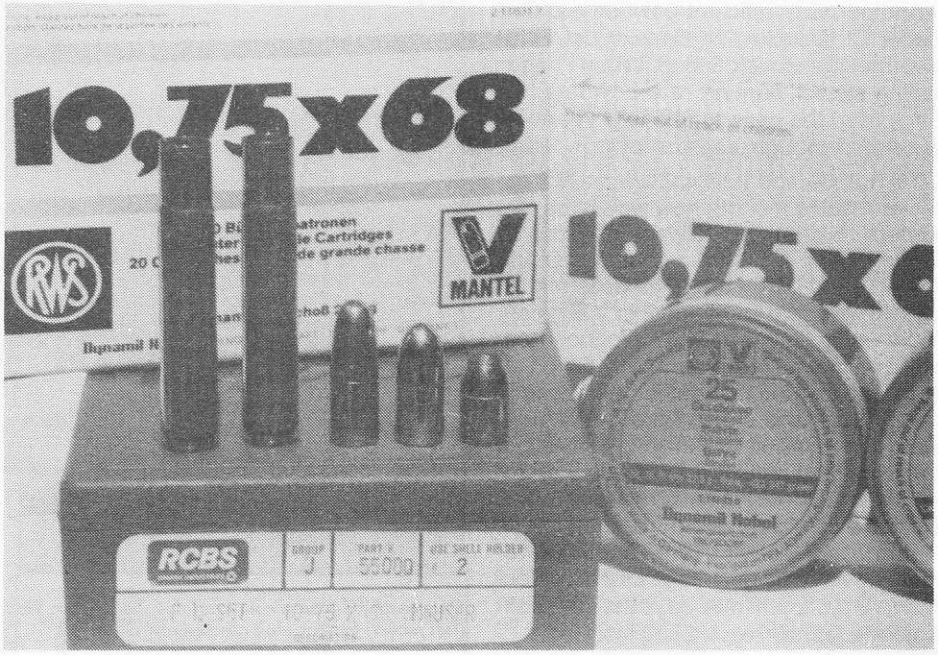
ply wrapped one layer of tape around the scope where it would contact the rings and tightened up the screws. After a great many full powder loads neither mounts nor scope have moved.

Apart from choosing a good quality scope capable of handling stiff recoil the other vital ingredient is a reasonably long eye relief. Even though the Redfield has a generous eye relief, the distance between scope and eyebrow decreases very rapidly during recoil so take care when bench resting large calibre rifles.

Reloading components for both 10.75 mm cartridges are available from major retailers. The 347 grain full metal jacket factory rounds are heavily loaded. While the factory claims only 2230 fps as the muzzle velocity, they actually reached 2341 fps when fired from the M81. RWS primers plus 347 and 401 grain projectiles were used to reload the fired brass.

Naturally I needed a die set for the 10.75 so I contacted RCBS. The green box arrived to reveal two very nicely finished dies. Resizing these big cases requires only minimal effort thanks to the high polish interior finish of the full length size die. The shell holder for the 10.75 is a Number 2.

A 10.75 might have considerable powder capacity like many magnum cartridges but it does not use slow burning propellants common to the magnum cases. Whereas bottle neck type cases need slower burners so pressures do not peak too soon, a straight case needs faster burning powders to generate proper working pressures.



RCBS Group J dies were used to re-load the 10.75 x 68. Their high polish made life easy for the operator.

"Cartridges of the World" listed 59 gr. of IMR.3031 as a suitable starting point for the 347 grainers. These chugged along at about 2000 fps. with very mild pressures. Eventually I raised the 3031 load to 63 grains for a top velocity just over 2200 fps.

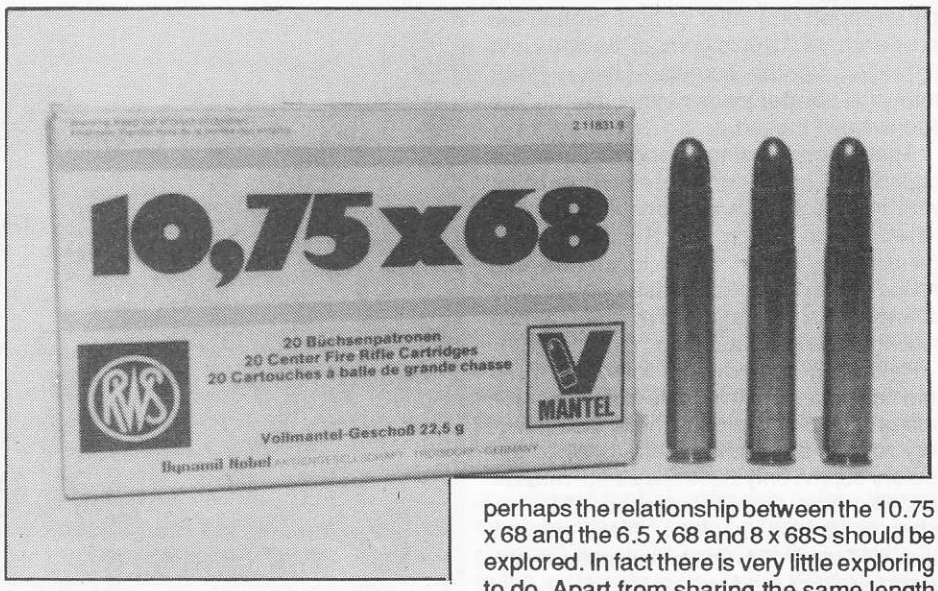
The local equivalent of 3031 is AR.2206. The Mulwex powder achieved a similar result with the same charge.

Although AR.2208 and IMR.4064 are said to be very similar, the Australian product produced almost 200 fps more velocity with just one extra grain of powder. Actually 4064 was at somewhat of a disadvantage due to its coarser granules. These would not allow it to pack compactly as 2208.

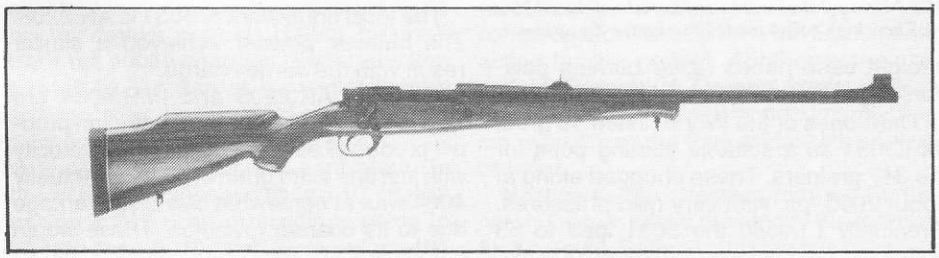
Another very efficient powder was Reloader 12. It clocked 2360 fps or just 11 fps less than the top 2208 load. When I began testing slower burning rate powders, the loads filled the case to capacity yet never generated enough pressure for top speeds.

If AR.2209 and IMR.4350 were not capable of doing the job, how would the fast burners perform? Mulwala Explosives Factory rates AR.2207 as being a shade slower than IMR.4198. The test results actually tended to verify this assertion. While up to 60 gr. of 2207 produced acceptable pressures only about 58 gr. of 4198 was needed for near identical velocities. Both powders drove the 347 grainer along at over 2400 fps. Perhaps this is not the velocity a varmint hunter would prefer but it is still excellent for a relatively small big game cartridge.

Before the .404 was given a mild power boost by RWS its original published velocity was 2125 fps. These days the 401 grain projectile should reach 2330 fps.



Only one RWS load is now available. The 347 gr. VM (full jacket) factory load clocked over 2300 fps.



P-H's M1100 African Magnum is currently being produced in .375 H & H, .458 WM and .404. Loaded back the .404 is a near equivalent of the 10.75 x 68.

Obviously if the 10.75 could be made to clock 2400 fps with a 347 gr. projectile a more modest 2125 fps from the heavier bullet should not be unreasonable. Once again 3031 was used as a starting point. Both 3031 and 2206 registered over 2000 fps so the 2100 fps goal appeared to be a distinct possibility. Only one powder - 4064 - did not break the 2000 fps barrier. Other powders including Re 12, H335, 2208, 4198 and 2207 all exceeded 2100 fps.

Of the better powders; 2207 just edged out H335 to push the tough 401 grain projectile along at a top speed of 2152 fps. This would make a properly loaded 10.75 the ballistic equivalent of well respected cartridges like the .450-.400 3". Needless to say these same loads would not be very pleasant to use in a Mauser Type A sporter, but the power is there if needed.

While the Model 81 delivers a fairly strong push at the shooters end it is still quite accurate. Either bullet weight will shoot three shot 91m (100 yd.) groups of just over 2.5 cm. (1") with monotonous regularity. There have been a number of sub-MOA groups when the human control system has occasionally gained the ascendancy over the recoil. Make no mistake, these big cannons will shoot very neat little groups if the operator does his part.

So far I have concentrated on RWS ammunition and components, however, there are others. Small quantities of eastern European made ammunition are occasionally imported. There are also bullets made by smaller manufacturers. Woodleigh and Barnes make 400 gr. projectiles mainly for use in .404s. What the 10.75 needs is a 300 grain semi-pointed soft point for smaller game. Such a bullet would reduce recoil while still furnishing more than sufficient power.

The alternative is to use a die to reduce the diameter of .444 Marlin projectiles from 10.9 mm (.430") to 10.75 mm (.423"). Of the many .44 projectiles the two most promising candidates are the Hornady 240 and 265 gr. soft points. At present a suitable die is being made so further information on this subject should be available in the near future.

Anyone interested in building a 10.75 needs only a worn out Parker Hale or similar rifle and a new barrel. Be sure to use a reasonably heavy barrel blank and a straight stock to help tame the recoil. At the same time there is no reason to fear the kick of a 10.75. Many small bore magnums seem to rattle my teeth more than the big metric. If you aren't into building custom rifles it is possible to buy the new Parker-Hale M81 "African" in .404. Rifles in .404 are easily loaded back to 10.75 ballistics.

Before leaving the subject of the 10.75, perhaps the relationship between the 10.75 x 68 and the 6.5 x 68 and 8 x 68S should be explored. In fact there is very little exploring to do. Apart from sharing the same length dimension the older 10.75 in no way appears to be the basis for the other two cases. Whereas the solid head diameter of a 10.75 case is 12.5 mm (.492") both later cases are 13.2 mm (.522") at the same point.

The 10.75 x 68 may never make the top ten seller list in Australia but it does make a change from testing the average .243 sporter. Furthermore you can be sure to draw quite a crowd when your neighbours at nearby benches see the torpedo shaped 10.75 rounds. Although the 10.75 x 68 may be considered obsolete it continues to gather all manner of game. Custom rifle builders would find it both interesting and impressive. All it needs is the chance to perform.

CHRONOGRAPHED LOADS FOR PARKER HALE M81 CUSTOM RIFLE CAL. 10.75 X 68 MAUSER

Projectile	Powder charge	Powder type	Instrumental velocity
347gr RWS	58gr	IMR 4198	2411 fps
"	60gr	AR 2207	2404 fps
"	63gr	IMR 3031	2213 fps
"	63gr	AR 2206	2208 fps
"	64gr	H 335	2344 fps
"	66gr	IMR 4064	2191 fps
"	67gr	AR 2208	2371 fps
"	74gr	Re 12	2360 fps
"	77gr	W-W 748	2269 fps
"	74gr	AR 2209	2191 fps
"	74gr	IMR 4350	2111 fps
"	Factory load		2341 fps
401gr RWS	56gr	IMR 4198	2140 fps
"	58gr	AR 2207	2152 fps
"	61gr	IMR 3031	2048 fps
"	62gr	AR 2206	2079 fps
"	61gr	H 335	2142 fps
"	63gr	IMR 4064	1972 fps
"	63gr	AR 2208	2137 fps
"	69gr	Re 12	2110 fps
"	74gr	W-W 748	2088 fps
"	70gr	AR 2209	2039 fps
"	70gr	IMR 4350	2044 fps