

Make mine a Double
by Alex Beer.

Double Rifles. To some, these words bring images of African safaris, hunting big and dangerous game, maybe even of dropping a charging buffalo, lion or bull elephant with only inches to spare. Perhaps images of rifles with superb handling and classic lines, of express sights, large bores, and big cartridges with lots of recoil and heaps of stopping power. Then, to others, the words may give images of skilled gun makers and proud workmanship in old time workshops, of the precise hand fitting of metal to metal and of fine engraving. Images of figured, well-fitted stocks, of felt lined oak and leather gun cases and the soft sheen of rust blued barrels and oil-finished timber.



My Double.

Whenever double rifles come up in conversation I tend to consider all of these aspects and more. I get a real kick out of double rifles (no pun intended). My first double was a Haliday, a box-lock ejector in 470 nitro. That was some twenty- something years ago. Since then, I have been fortunate enough to own, use and work on quite a few more. Now, a respectable quality double is my first choice in hunting rifles.

As I said, first there was the Haliday in .470 nitro, a nice old rifle, and then there was a Boswell in .500 nitro 3" that weighed in at 11 pounds, and a Cogswell & Harrison in .475 nitro 3 1/4". Now, this one was not what you would call sleek. A friend nicknamed it "the pig" because it was deep, broad and heavy at 11 1/2 pounds, but it balanced and handled very well, and boy, did it shoot. With a Federal 215 primer, 90 grains of IMR 4350 and a 480-grain Woodleigh soft nose projectile, when I did my part, it would put four shots, two out of each barrel, into 2 inch's at 100 yards, consistently. Then came a Holland & Holland in 500 black powder, and then another Holland & Holland, this one in 12 gauge black powder Paradox. All these rifles shot well, some better than others, but none shot as well as "the pig" in 475. I learned a lot about re-loading for and the regulating of big double rifles in those years, and I enjoyed it all.

Sometimes we all seem do thing we wish we hadn't. For some reason or another, I sold my doubles. Not all at once though, you know, sell one buy another, that sort of thing. But they all ended up going, probably to finance more firearms or hunting trips or something like that.

For whatever reasons, I ended up with no double rifles at all, and I found that I missed having them. What could I do? I really wanted another one, I couldn't find one, I couldn't afford one at the time and I couldn't make one, so what was I going to do?

"Now hang on a moment," I thought, "who said I couldn't make one?" I'd been a gunsmith for a few years, repairing firearms and making un-available parts etc. I'd re-stocked quite a number of rifles, custom built a few single shot and magazine rifles, made sights and quarter ribs, all that sort of thing, and all well made well fitted, top quality work too. So were there any reasons why I couldn't build a double rifle from scratch? No, there were not! "All right" I said to myself, "let's do it!!"

Okay then, what caliber? I think double rifles should be in rimmed cartridge, so that cuts the choices down a bit. I didn't really need 5000 ft/lbs of energy for what I hunt, which is Fallow deer, Sambar deer, wild pigs and maybe one day I'll get back to the Northern Territory to chase buffalo again. But I still wanted a cartridge with a fair bit of power, because I happen to like the big calibers too! So, what cartridge? My type of hunting is in the thick cover, the thicker and rougher the better. I love it. Just one of many reasons to own and use a double rifle, they are just perfect for this sort of hunting, and a bit of power doesn't go astray either.

So what I wanted was a reasonably light, well handling double rifle in a caliber with a good bullet weight at a moderate velocity, and around say, 3000 ft/lbs of muzzle energy. Fallow can take a good hit and run a bit, sambar are known to be very tough to put down and pigs can, and will, get downright mean if wounded. 3000 ft/lbs isn't needed for these (it is and more at times for buffalo) but I reckon hit things hard in thick cover. A 375 H&H Magnum I thought, but the rimmed version is not available in factory ammo, and at the time I wanted a factory available shell. A 7x57 Rimmed maybe? A great cartridge but too small. Next choice??

A short time later I was in a then well known, but sadly now closed gun store (thanks to more new gun laws) and was bouncing my ideas off the owner who was also a keen double rifle man. "I think I can help," he said. He went out the back to his workshop and returned with a matched pair of lightweight barrels in 9.3mm (.366 cal). "I bought these in from Walther in Germany, for a gentleman who wanted to fit them to an under/over Browning 20 bore, but then he found a Winchester Grand European in 9.3x74R, so I don't need these anymore, are you interested?"

I gave it some quick thought, 9.3x74R, rimmed shell, 285-grain projectile at about 2300fps, a bit over 3000ft/lbs, a low-pressure cartridge and no real problem getting ammo. Absolutely perfect. I asked the obvious, "How much?" "One hundred dollars each!" he answered. I couldn't get my money out fast enough.

I would have loved to get “chopper lump” barrel blanks, but I didn’t know where to start looking. I went for mono-block construction instead, it is still a very strong way of joining barrels and actions together, although not as traditional as the chopper lump system.

So now I had my barrels but didn’t have a clue of the dimensions I needed, so I sat down and started drawing. I drew up a basic Anson & Deeley style, box-lock non-ejector action for the sake of simplicity. Many hours and a few foul ups later, I had come up with a workable plan of nice lines and proportions. Thin card templates were made to check the movements and clearances of the action limbs in the available space of the action. It all seemed to work on paper, so far so good.

Now, I thought, what sort of metal would I need? I took this question to a friend who owns and runs a successful precision machining business who also knows his steels. I told him what was happening and what I wanted to do. He recommended a Bohler product called M200, it’s very tough, has a tensile strength of 80 tons, can be case hardened yet can be readily worked with good tools.

So three blocks of M200 in the appropriate sizes were ordered and paid for. One 2” x 2” x 4” long, for the mono-block, one 2” x 2” x 10” long, for the action body, and one 1” x 2” x 8” long, for the for-end iron. The off cuts would give me all the material for the other parts I needed to make, i.e. hammers, sears, cocking levers etc. The steel arrived in due course, now work could begin.

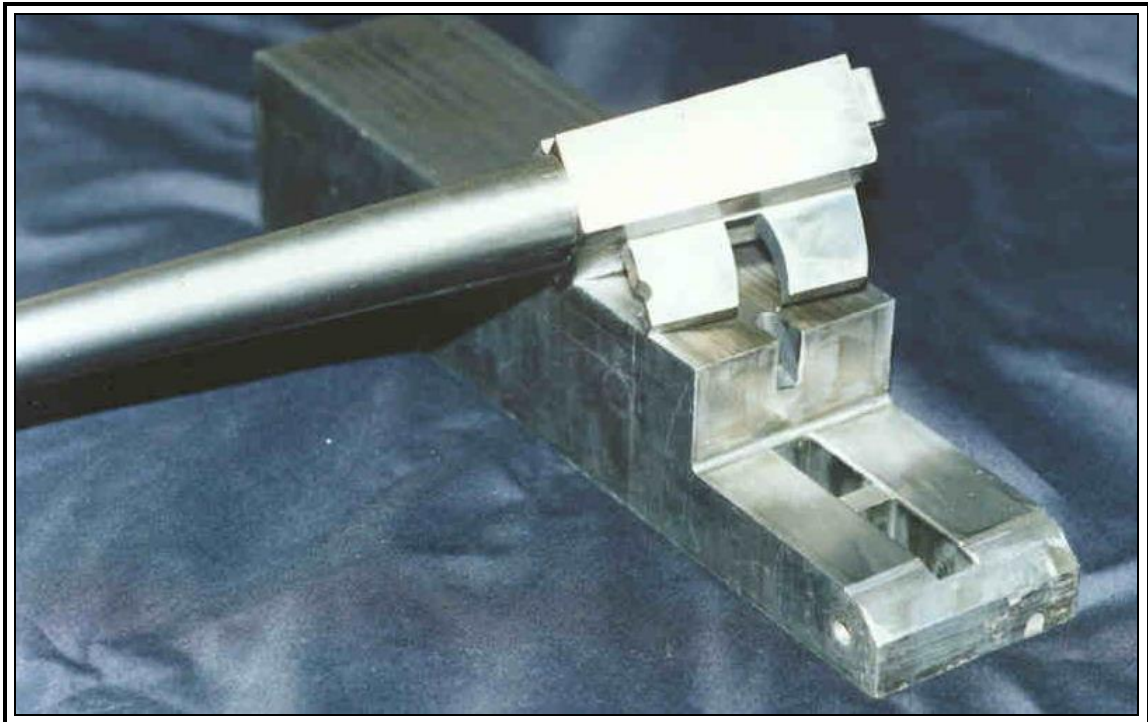


The raw materials, with a six inch rule as a scale.

At the start of the project (which sparked quite a bit of interest) my good mate Dave christened this rifle “The mouse gun”. He considered anything under his beloved 450 Rigby double to be small. I knew it would take many hours to do, but that didn’t worry me, I was now really keen to build up a double rifle.

The first thing to be made was the mono-block. The lumps were formed with a hacksaw and files, and then the holes for the barrels were bored. A hole for the extractor leg was then bored. The action body came next, and many hours of drilling, sawing, filing, smoking, scraping, polishing and fitting later, I had the mono-block, barrel lump slots, top extension, action flats and standing breech face all fitted together to the thickness of a layer of smoke. I was well pleased. Now I had to work out how to cut out the slot for the sliding under bolt.

Not having access to the sophisticated machinery available to modern gunmakers today, I had to do it the only way I knew how, the same way it was done a hundred years ago, drill and file it out, square and true. Time consuming? Yes, but done this way, I know things will fit correctly and work well. This was to be the normal thing on this project, hacksaw, file, drill, polish, smoke etc, all time consuming but worth it. Smooth functioning and properly fitted parts were all requirements of the end product.



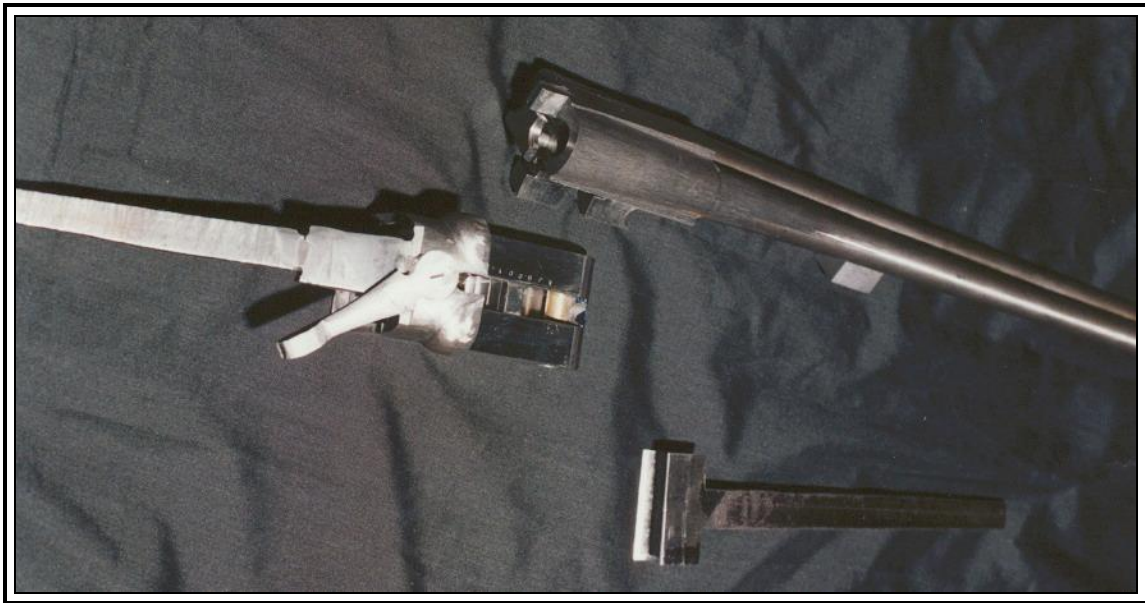
Fitted mono-block.

The barrels were chambered about 10 thou' short (to be finish headspaced later) then came the fitting of the barrels to the mono-block. These were set to converge at about 20 yards. This was where I had worked out a good place to start regulating would be (this proved to be pretty right too!). The for-end hook was made and fitted, and then the top rib with rear quarter ramp and for-sight ramp was made. The bottom rib and short rib came next, along with the muzzle wedges.

All this was wired together and then soldered. Now I had a pair of barrels that was starting to look like something. So I added the express sights, a wide “V” rear, and a front gold bead. Work now went back to the action body. I made up a cutting tool and used it to cut the fore-end knuckle radius joint on the action, the fore-end iron was then made up to correctly match the action and fit the fore-end hook. The extractor toe was then made and fitted.

Extractors were made next and fitted to the barrels and to the extractor toe, and timed to move the cartridge cases well clear of the chambers yet not hit the standing breech. I designed the extractor toe to pull the extractors in as the barrels are closed, not pushed in by the breech face. This works very smoothly and does not leave rub marks on the breech face.

The top lever and top lever spring were next. These were made and fitted to the action and made to work the sliding under bolt. The bites in the barrel lumps were then cut in and polish fitted to the under bolt so the barrels would now lock down in place.



Solid progress.

The rear lump also acts as a locating cam to hold the barrels back onto the standing breech when the barrels are closed. So, with the barrels closed and locked down, the hole for the hinge-pin was reamed. A hinge-pin was then made to fit and screwed into place. Cover screws were made to fill the hinge-pin holes in the sides of the action.

Next came the slots in the under side of the action to accommodate the action limbs. These were cut in the same way the slot for the under bolt was cut, drilled and filed, square and true. Disc strikers and firing pins were made and fitted, and then the chambers were deepened to set the headspace.

I then gave all the parts a serial number and did all the necessary legal paperwork. It was then a registered rifle, even if it was incomplete.

Hammers and cocking levers were next, along with sears, axle pins and mainsprings. These were made and fitted into their respective places, polished, then all adjusted to work in time with each other.



Action limbs and things.

Both a trigger plate and action bottom plate were then made along with screws to suit. Triggers and trigger blades were filed out of more solid steel (like all the other parts) and fitted to the trigger plate, then came the trigger axle pin. A sliding safety mechanism was made and installed. This safety catch locks the sears themselves, not just the trigger blades as some do. The safety catch button was then made and checkered for positive non-slip operation.

Next I made up the trigger guard and the assembly screws and fitted them accordingly. Now we had most of the metalwork made, fitted and functioning, I got stuck into turning the over-size block of steel that was the action body, into the something with those nice lines and proportions that I had drawn up a number of months ago. So, after heaps more filing and polishing, I had this smooth sleek little action with a pair of barrels and a fore-end iron, which all fitted and functioned beautifully and looked wonderful!

It was now time to start on the stock and fore-end. A number of years ago I had the good fortune to find half-a-dozen reasonable English walnut stock blanks at a bargain price. Each of these was now checked over and the most suitable one, so far as grain structure, grain direction, and color was chosen. A centerline was drawn and the shape was roughly cut out. The action and top tang was slowly and carefully inletted to the head of the stock. Inletting cannot ever be rushed.

The trigger plate was then inletted into place and the necessary cut outs for the safety mechanism to work in were made. Assembly screw holes were drilled and the screws fitted.

The stock was then shaped. Stock length was set, along with cast off, toe out and pitch. Then came grip angle and length. A comb nose was formed, and then the drop at comb and drop at heel was worked out. A neat, smallish cheek-piece and a brown 0.8-inch Pachmayr Old English De-celebrator recoil pad were next.

The fore-end was inletted to the fore-end iron and to the barrels, and then shaped into the classic splinter shape. A fore-end catch was made and fitted, then inletted into the fore-end wood. Now this is looking like a rifle.



Nearly there.

Now I could start to regulate it. I had decided on R.W.S factory ammo with 285-grain soft nose projectiles, good brass and a good bullet for most of my hunting. A target was set up at 30 yards and a couple of those long shells dropped into the chambers. A deep breath and fingers crossed. Okay, here we go. Boom, boom, right barrel then the left. You little beauty, both on the paper and only about 2 inches crossfire with the left barrel one inch high. Load up and try again. Each bullet cut the same hole as before.

Back to my workshop, wrap the barrels with wire, fit wedges to hold the ribs in place and heat the barrels to soften the solder to move the muzzle wedge in a bit to correct the crossfire problem. Back to the range and try again. Better this time but not right yet. To cut a long story short, I needed five more trips to and fro, to the range, back to the workshop, back to the range etc, to get it regulated, but the last group at 100 yards was four shots (two out of each barrel) into 2-5/8". I was mighty pleased. The sights were then filed in so the point of impact was right where I wanted it to be, 2" above the foresight at 100 yards.

Time to put the finishing touches to this lovely little thing. The wedge was dressed off to the muzzles and the barrels were polished and rust blued. The stock and fore-end were sanded super smooth, hand rubbed oil finished (quite a few hours of rubbing) and then checkered at 24 lines per inch.

Then I carefully assembled all the finished parts, and, at last, here was my rifle. I gave it a light oil, placed it gently on my workbench, sat down and smiled. Who said I couldn't make one?

How many hours? Approximately 700. A lot of thought and a lot of learning were done during this time. Frustrating? Yes, at times, but definitely all worth it in the end. Since its completion, my double has been with me on many hunts and bush trips. It's had a few kills too, and those bullets do hit hard.

I think I achieved most of the things I set out to do, the rifle balances and handles very well, it shoots well, it's reasonably light, the cartridge has got plenty of power, and the rifle is an absolute joy to hunt with. When I do my part, nothing taken so far has needed that second shot, but it's always there, just in case.

Make mine a double, anytime!

Rifle Details:

Top lever, boxlock, non-ejector in 9.3x74 Rimmed. Double triggers, 23 ½" rust blued barrels, gold bead for-sight, one standing wide "V" express rear sight with silver centerline, sighted to 100 yards, QD sling eyes, splinter fore-end, plainly figured oil finished English walnut stock, checkered at 24 lines per inch, with small cheek piece, finished to 14 ¼" length of pull with brown Pachmayr recoil pad, Weight 7 lb 10 oz. In a fitted hand made canvas and leather covered wooden case which I had to make to finish it all properly.

Cartridge Details;

9.3x74Rimmed.

285-grain soft nose or solid .366 diameter projectile at 2280 fps.

3290 ft/lbs muzzle energy.



The finished article.