

Heym's



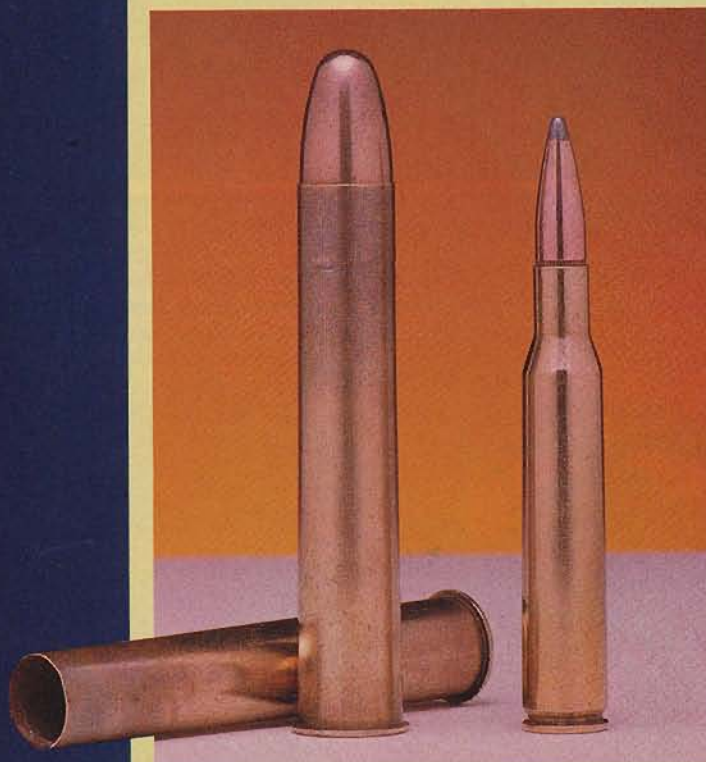
L

et me get this off my chest right here at the outset: When the editor asked me to review the 14-thousand dollar Heym Model 88 double rifle in .500 Nitro Express that is the subject of this article, I had serious reservations. First and foremost was that I didn't feel qualified to review such a rifle for

GUNS readers because, frankly, I've never owned one nor have I ever used one in the field. It's not that I haven't wanted to own a double rifle but, hell, I've wanted to own a Ferrari all my life and I don't have one of them, either.

Sure, as one of the perks of this gun writing business I could have asked any number of sources for the loan of a double to take over to Africa, but that doesn't appeal to me. Working a newly-introduced rifle into a field test on a one-specie North American hunt is one thing, but when I go to Africa after stuff that can gore, stomp, chew and impale, I want to hunt with one of my guns; a rifle I've put together myself; a rifle I've glass-bedded, fine-tuned, handloaded for and shot to where it's a part of me.

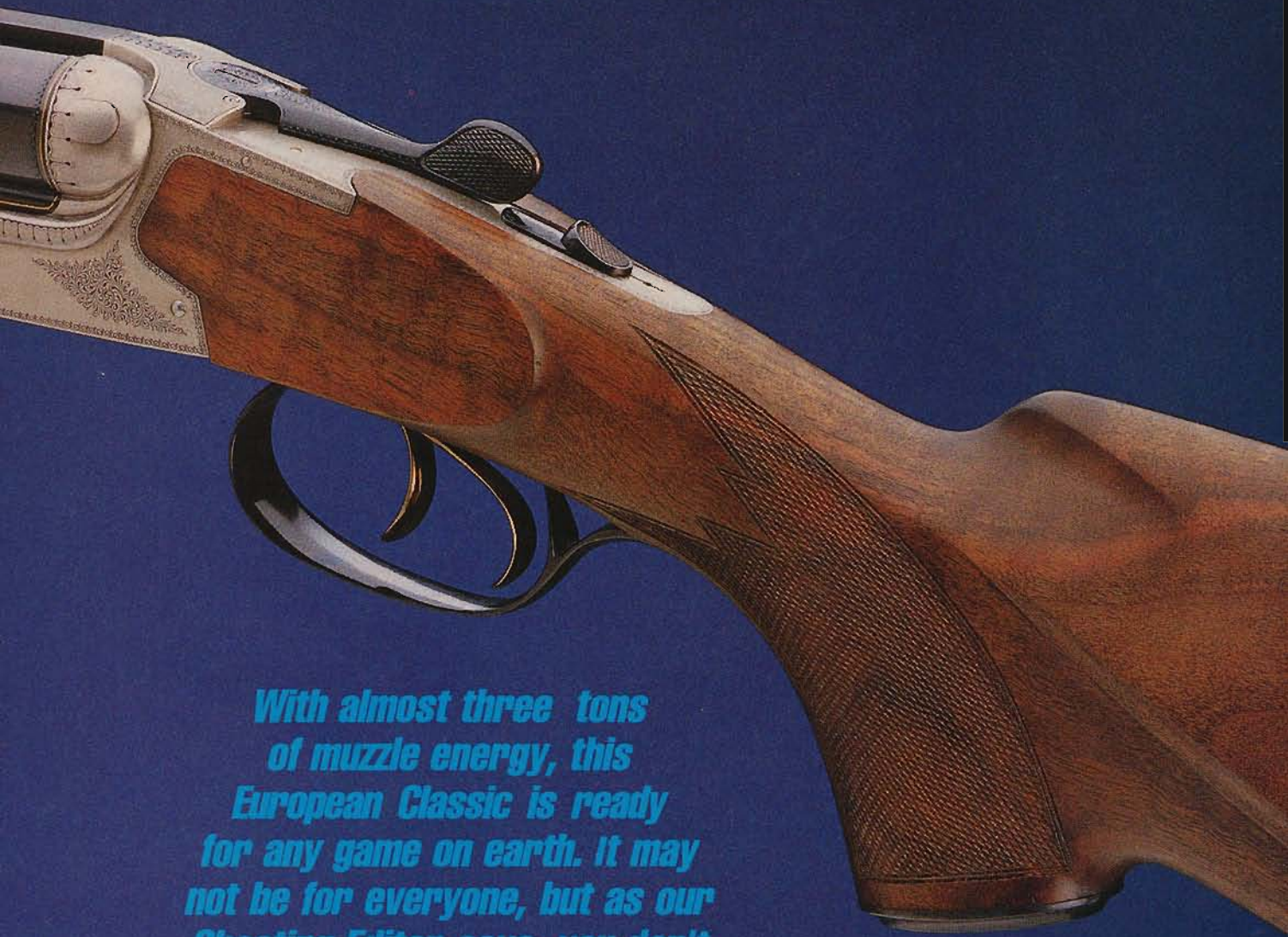
And Africa, along with perhaps Australia and Alaska, are the only places where anything approximating dangerous game is found. To use a big bore double rifle on any-



The huge .500 Nitro Express case dwarfs the .270 on the right. The case holds 80 grains of 4320 to give a 570 grain bullet 2150 fps and 5850 ft/lbs. of energy to duplicate the factory load.

.500 NITRO EXPRESS

DOUBLE RIFLE



With almost three tons of muzzle energy, this European Classic is ready for any game on earth. It may not be for everyone, but as our Shooting Editor says, you don't need a Ferarri, either!

By Jon Sundra • Photos by Mustafa Bilal





Considering the size and power of its cartridge, the dimensions of the Heym M-88 receiver are surprisingly small and light. At \$14,000, the Heym is not for everyone, but Sundra found it very easy to fall for the handling qualities of this traditional European firearm.

thing less for the purpose of a "field test" to me is ludicrous—to say nothing of straining your readers' limits of credibility. I just can see it in print now: "The .550 Gastro double really did the deed on the forkhorn. Didn't even need the second barrel." Yuuukk!

As much time and effort as I put into my rifles, they're real dogs when it comes to intrinsic value. And as I stated in last month's article on my definition of a "custom rifle", there's not a personal hunting rifle of mine that can't be replaced or duplicated for six hundred bucks, plus whatever the scope and mounts cost.

Air travel-wise I have been fortunate in that I've never had a single rifle fail to arrive, eventually, at the same place I did in time for me to use on my hunt. And all of them reached my home afterwards—eventually. But I have traveled with and met in the course of some 115 hunting trips to many parts of the globe, dozens of people who have had their gun(s) lost in transit. Some of them turned up after a while and some didn't.

Who knows, maybe the reason my rifles have never disappeared is because they look so ratty no one thought they were worth the effort and risk. In any event, the thought of having to worry about a rifle that's worth more than I am, dead or alive, is something I don't need when I'm traveling.

As much as I look at rifles through pragmatic eyes, that doesn't mean I don't appreciate guns as a medium of artistic expression — as object d'art, if you will. I just can't afford 'em! And I suspect most of you out there feel as I do.

And last but not least, the classic double rifle, whether British or middle European in origin, is generally chambered for cartridges that are, well—foreign to the vast majority of GUNS readers. You've gotta' admit, a .450 No. 2 or a .470 Nitro Express is hardly on an I Love Lucy familiarity level for the average Whitetail hunter.

Having dispensed with that catharsis, let's now take a look at what 14 grand can buy in the way of a double rifle.

The Model 88 is the designation for all double rifles made by the renown firm of Friedrich Wilhelm Heym of Munsterstadt, West Germany. When I say "all" I mean they take the same basic receiver and fashion it into either a box or side lock, plus side-by-side combinations of rifle/shotgun — say a .500 Nitro on one side and a 3" Mag 20 gauge on the other. For an extra 5,600

bucks you can have an interchangeable barrel set in another caliber.

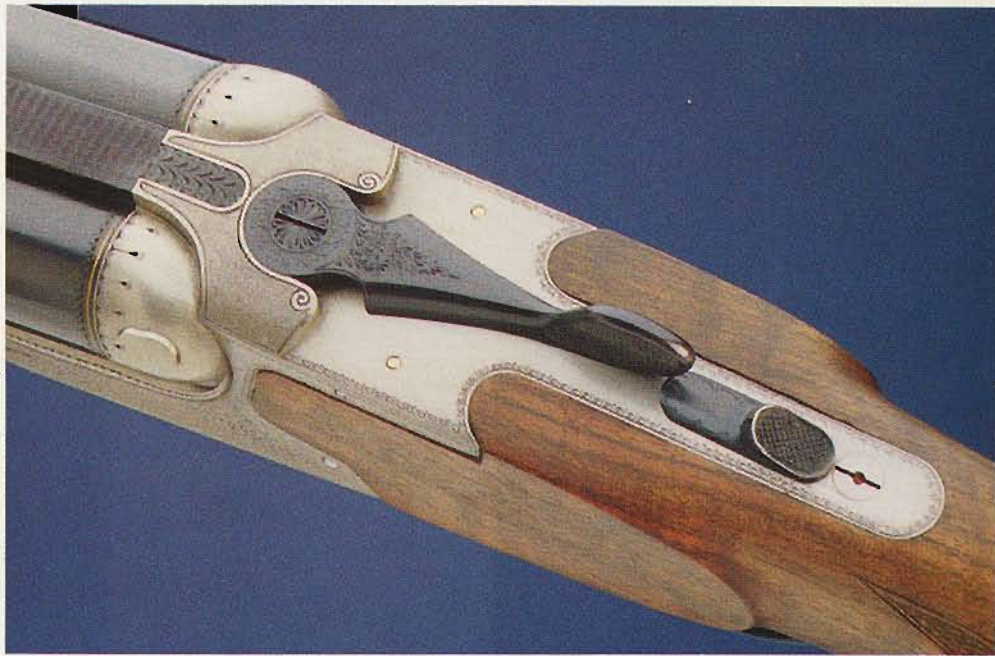
Our test rifle supplied by the importer, Heym America, Inc. of Ft. Wayne, Indiana, was the 88B Safari Grade, a box lock that's offered in three other calibers in addition to the .500: .375 H&H, .458 Winchester Magnum and .470 Nitro. I'll bet that the .416 Remington will soon be added to that line-up.

Like so many British big bore cartridges the .500 Nitro Express evolved from an earlier black powder version. There were two, in fact, that surfaced in the early 1880's, one based on a 3 $\frac{1}{4}$ inch case, the other a 3-inch. When the transition to smokeless — in this instance Cordite — was made in the mid-'90s, the 3 $\frac{1}{4}$ inch case was found unnecessary. As originally loaded by the Kynoch firm, 80 grains of Cordite propelled a 570 grain bullet at 2150 fps for 5,850 foot pounds of muzzle energy. According to Barnes' Cartridges of the World, a load of 80 grains of IMR-4320 will duplicate the factory specs.

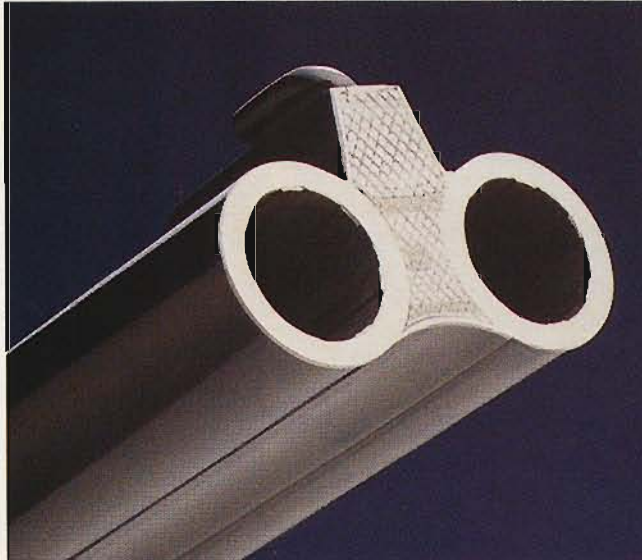
Upon opening the box and pulling out the 88B it was hard for me to accept that this gun was, in effect, the "bare bones" grade. I mean, if you want a Heym double in one of the four calibers mentioned, you have to buy the Safari Grade and it starts at \$13,600. Our test gun was exactly that: the basic 88B Safari Grade priced accordingly.

Over the course of my 49 years I don't believe I've seen five rifles that have smitten me like this Heym, and none of them were doubles. This is the kind of gun I simply can not envision anyone not wanting to own desperately.

Yes, the gun carries pure artistic embellishment that raises its cost beyond what a "basic" version would cost, but there's not that much embellishment and what there is, is tasteful and subdued. Indeed, I'd venture a guess that perhaps \$1,600 of the gun's



Top: The sliding tang safety is smooth and silent. On either side of the operating lever are cocking indicator pins that protrude about 1/16" when cocked.



Left: Sundra found both barrels capable of 3/4 inch groups at 50 yards with PMC El Dorado ammunition. In spite of the 70 ft/lbs. of recoil, the M-88 was not that unpleasant to shoot.

Below: The Heym's 11-1/2 inch rib has a standard wide-notch blade for quick shots plus three folding leaf sights for 50, 100 and 150 yard ranges.



\$13,600 price tag would cover the arabesque engraving, the border work, stippling and screw head decoration. The balance is for just a masterfully built, totally functional hunting arm.

Maybe that's why I was so taken with this gun, for aside from the modest amount of tasteful engraving, it is all business. Every facet of this gun's being — its mechanisms, its physical configuration — were conceived for only one purpose: to deliver two devastating shots as fast and as efficiently as possible.

The overall physical appearance of the 88 is very contemporary; indeed, surprisingly American. If



Cartridge loops are not just for style, they are quite functional where a double rifle is concerned. Here our Shooting Editor plucks a couple of spares from Past Corporation's Safari shirt.

you were to take the typical, straight-comb classic style stock of, say, a David Miller or a Dakota rifle, bend it a little downwards at the wrist to lower the comb for exclusive iron-sight use, you'd have the buttstock of this Heym Safari Grade. Even the shape of the cheekpiece is strictly USA.

Not a single feature on this gun belies its Teutonic origin. How the powers that be at Heym USA got the folks at the factory to produce such a Yankee version of what is essentially an Anglo European gun is beyond me.

If you've never held and shouldered a double rifle, it has a totally different feel. There's a balance and a sense of concentrated weight about it that's unique. Of course, the fact that even with 24-inch barrels this 10-pound gun has an overall length of only 41¹/₄ inches, might explain in clinical terms why it feels the way it does. But you have to heft one of these guns for yourself to understand how it differs from all other types.

The buttstock on our gun had 3/8" cast-off to it to facili-

tate sight alignment. Though a tad on the corpulent side, I am of that mythical "average" build — 5-10, size 16 neck, 33 sleeve — and the Heym fit me like it had been custom made. The slight cast off, the cheekpiece and the right comb height combined to put those express sights in perfect alignment for me. Repeated shoulderings of the gun with my eyes closed had the 1/8" diameter silver front bead right in the V-notch.

The pull length was also just right for me — 13³/₄" to the rear trigger, 14⁵/₈" to the front. The front trigger, of course, is hinged and moves about a quarter inch forward against a mild spring tension so that it doesn't bash your trigger finger when the left barrel is fired.

An 11¹/₂ inch express-style half-rib is home for a sight arrangement that features three fold-down leaves for 50, 100 and 150-yard shooting, and one fixed. The fixed 50-yard sight is of thick steel as it should be to take day-to-day abuse without having to worry about it being bent or moved out of alignment. The fixed blade has the traditional shallow V in conjunction with a vertical white line for fast acquisition.

When there's the luxury of time and you want to draw a finer bead, you can flip up the shadow leaf that offers a more sharply defined U-shaped notch for the same 50-yard distance. The 100 and 150-yard leaves are also U-notches.

Considering the size and power of a cartridge like the .500 Nitro, the 88B's receiver is remarkably small and light. Obviously, it must also be remarkably strong. Lock up is provided by a combination of two massive underlugs engaging notches beneath the barrel flats, and a Greener-type lateral crossbolt engaging a hole in the rib extension on the monoblock. Selective auto ejectors are standard, and atop the receiver on either side of the top lever are two tiny cocking indicator pins. When each barrel is fired these pins fall flush; otherwise they protrude about 1/16".

The tang-type thumb safety glides forward as if on ball bearings and it does so silently. Opening the 88 took some real effort both in terms of moving the top lever and breaking the gun open. I mean, this gun was tight! And firing 20 rounds of full bore loads through it didn't loosen anything up, either.

Ah, yes, shooting the .500 — not the most pleasant of tasks, especially that portion of it that has to be done from the bench to establish some sort of accuracy level. I do have a good excuse, however, for keeping that part of my

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Stress Factors on Double Rifles

A look at how different gunmakers handle the forces generated when a powerful double rifle is fired.

By Don Zutz

testing to a minimum: each time I pulled the trigger it was \$7.50! Yep, 150 bucks per box of 20 rounds. That's not because I had to import ammo from overseas, either. Two American firms are now loading Boxer-primed ammunition for the .500 Nitro; one is Art Alphin's A-Square Company (Rt. 4, Simmons Rd., Madison, Ind. 47250, Tel. 812-273-3633), the other is PMC's Eldorado Custom Shop, PO Box 308, Boulder City, Nev. 89005, Tel. 702-294-0025). Even Federal Cartridge has gotten into the British big bore scene this year by loading for the .416 Rigby and .470 Nitro Express, but not the .500.

So believe me when I say it was purely for economic reasons that I limited my bench testing to five "groups" of two shots each (I've also got this lot in Florida...)

Anyway, I established that this particular Heym Model 88B in .500 Nitro Express firing PMC Eldorado ammunition would put both shots within 3/4-inch of POI (point of aim) at 50 yards. That was using the better-defined 50-yard leaf, not the V-notch.

The gun was a lot more pleasant, almost fun, to shoot offhand. It's 70 foot-pounds of recoil isn't all that bad when you're in a position where your body has more "give" to it. The same holds true for the sitting position, the steadiest from which you're likely to be using this kind of gun on the real thing.

As for the usual performance criteria used when evaluating guns, what can I say that you can't assume for yourself. I mean, for 14 thousand dollars the damn thing had better performed flawlessly! One doesn't buy this sort of gun for the job it does, but for how it does the job. A Ford Escort will get you to the super market just as surely as the Ferrari Testa Rossa; it's in the going that's different!

This Heym 88B is the one rifle I would consider doing unspeakable things to own. It is such an exquisite expression of a purely functioned firearm that I just hope Mustafa Bilal's photography can do justice to it, for my own meager powers of expression can't.

Heym, incidentally, offers a remarkably diverse line of rifles and shotguns, most of which are expensive but are at least down here in the atmosphere. There's the nifty SR-20 bolt action rifle starting at \$2,300 that's made in five different versions in calibers ranging from .243 Winchester to .458 Winchester Magnum. They also produce drillings, side-by-sides and over/under shotguns, and single-shot rifles based on the Ruger No. 1 action. A dollar to Heym USA (1426 E. Tillman Road, Ft. Wayne, Ind. 46816), will get you a catalog and price list.



The pressure of firing places various physical stresses on a double rifle, be it a side-by-side or an over-under, and the gun's bolting mechanisms are designed to mitigate against these firing forces and their potential to kick open and/or damage the gun.

In the early days, when gunmakers didn't have the same tough steels that we enjoy today, the firing stresses could do everything from producing early looseness through excess wear on individual parts to cracking at the angle of the frame. Today, we aren't as likely to get cracking at the angle of the frame because of refined steels, but firing forces can still batter metal parts and bearing surfaces.

Exactly what forces exist to stress a double rifle when fired? There is a trio of them: (1) axial force, (2) radial force, and (3) bending force.

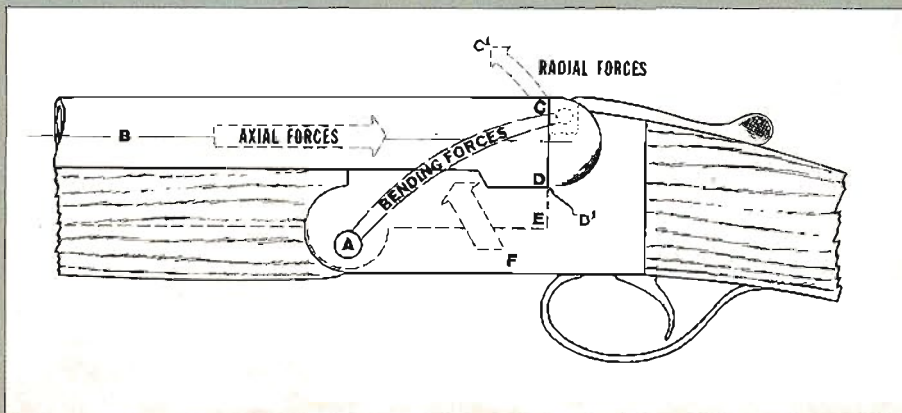
Axial force runs parallel to the bore's center line (axis) and applies itself perpendicular to the face of the standing breech. It is, in effect, the result of the action-reaction principle, and in the accompanying illustration is designated as B-CD. If axial forces weren't controlled by mechanical bolting, they would cause a separation of

the barrel face from the standing breech on each shot. In most respects, axial forces are the least damaging to a firearm, and they are normally held in check easily.

The second force is one called the radial force, and its impact is noted on the illustration as C-C1. The radial force operates around the pivot point of a drop-barrel double, be it a knuckle pin or bifurcated lumps; and if allowed to go unchecked, the radial force would rotate the barrel assembly to pop open the gun on firing.

To understand radial forces a bit better, I must at this point inject the fact that, under firing pressure, sporting arms tend to experience barrel vibrations of an individual magnitude; and the barrel vibrations of a hand-held or otherwise supported arm begin with a downward flip of the muzzle, which in turn elevates the breech end of the tubes. If it weren't for this vibrational pattern of the barrel, the radial factor wouldn't be a problem.

Since barrel vibration is a physical reality, however (even in long-range howitzers and naval guns), its existence must be emphasized for it also



plays a role in the third force, namely, the so-called "bending" force, which is the one that places stress on the action body.

The bending force is shown as line A-C on the diagram, and it illustrates the leverage the barrels exert upon the angle of the frame (D-D1) to threaten frame cracking. Regarding the bending force's leverage, point F on the diagram represents the fulcrum point. (Point E merely represents the depth to which the barrel assembly settles into the frame, as drawn by hidden lines.)

To visualize the bending force's impact on a double's action body, we must combine our knowledge of the gun's L-shaped frame and the barrels' vibrational pattern, which begins with the above-noted downward plunge. This puts pressure on the frame like a first-class lever, as if somebody were using a crow bar to pry down the action bar and place optimum pressure at the point where the action bar meets the standing breech to form basically a 90 degree angle.

The harder a barrel is allowed to vibrate, the more energy is placed on the angle of the frame. Conversely, the more bolts stifle the vibrational pattern, the more pressure is removed from the angle.

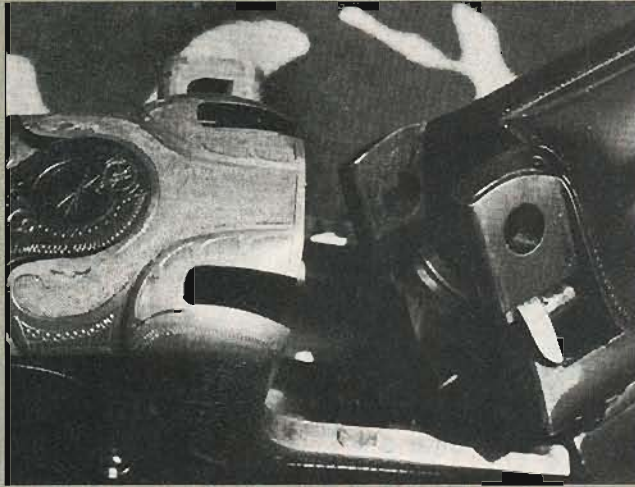
The simplest thing in defending against cracking at the angle of the frame is a radius at this point. Practically all modern gunmakers employ the radius to varying degrees. Thereafter, however, gunmakers have devised interesting mechanical concepts for controlling firing forces to minimize stresses on double guns.

One of the most famous devices for managing radial and bending forces was W.W. Greener's crossbolt. This is a rounded bolt which worked through the shoulders of a double gun's standing breech to engage a matching hole in the barrel extension. When properly fitted, the Greener crossbolt coupled the barrels to the top of the frame, thus damping radical dynamic action and controlling the impact of barrel whip against the frame.

The Greener crossbolt concept was carried in the over-under rifle and combination guns or drillings by a German gunsmith named Gustav Kersten, who utilized barrel extensions on each side of the upper barrel to receive a crossbolt. This Kersten bolt is still popular with some German and Austrian gunmakers, notably Merkel but also the various Ferlach

stackbarrels.

Another attempt at controlling the barrels' juncture with the standing breech is the "doll's head" device, which was also used by the famous American makers, Parker and Lefever. The doll's head is a little bulge of some sort that fits into a matching cavity in the double's receiver top between the shoulders of the breeches. By nesting deeply, the doll's head keeps the barrels from rotating and



To control the barrels of a Merkel over/under under firing forces, Gustav Kersten used a variation of the Greener crossbolt mechanism, employing a pair of extensions on the upper tube.

from jumping ahead under axial forces.

The doll's head was initially used by Westley Richards, at which time it was round. But Dan Lefever found a weakness in a round doll's head, learning that it tended to wedge forward and, in his words, "splay the slough" in which the barrel extension lay. Therefore, Lefever redesigned the doll's head, giving it a squared frontal area to abutt the cavity without splaying the groove. Parker used a rectangular doll's head for the same reason.

The British applied much thought and tinkering to double-barreled sporting arms, both shotguns and rifles, and Westley Richards came up with another thought that has since influenced gunmakers. Richards observed that less stress was placed upon action bodies when the foremost and rearmost bolts were placed farther apart, thus reducing to some extent the amount of leverage placed on the angle of the frame.

This has caused many gunmakers to employ lengthy action bars on side-by-side doubles, including the famous American Winchester Model 21 side-by-side. It has also caused many European crafters of double rifles to extend the action bar farther, even though some quarters believe that

compact actions are more aesthetic.

A high percentage of all doubles today operate with some kind of underlug to hold the barrels down snugly against the water table, alias the action flat. To supply extra hold-down strength at this point beneath the tubes, Purdey introduced the now-standard double underbites which involved a pair of lug engagement points beneath the barrels rather than just one. The Purdey concept is now widely copied, and the under-rated Belgian side-by-side rifles employ Purdey double underlugs almost universally. In fact, so do the higher grades of Merkel and Ferlach double rifles, often combining the double underlugs with more obvious Kersten bolt.

One can carry the bolting of a double rifle too far, of course. It is easy to make one bolt bear perfectly, and a good gunsmithing assembler can normally make a pair of bolts bear solidly. But when the bolts become more numerous, such as treble bolting or the multiplicity once employed on the fine old Griefelt guns of over-under persuasion, it becomes doubtful that each individual bolt can be made to bear by itself while also harmonizing with the others. It would seem that a perfectly fitted pair of bolts would do the job, and that the remainder were an excess despite hand fitting.

Massive lugs working through the action bar and lower receiver in Purdey double-underbite fashion seem to be both adequate and popular at this time, considering the high quality of our modern steels.

Essentially, the knuckle pin or bifurcated lump acts as the retardant against axial pressures, while the other bolting restrains the barrels in their vibrations. For maximum security, accuracy, and the prevention of gun damage due to firing stresses, however, all bolts should be finely fitted to effect a solid luck-up with the least amount of vibration as possible.

Thus, when you order that custom double rig or buy a used one, take a careful look at the condition of the bolting system and its design. Will it control the forces unleashed by firing those heavy charges and eliminate the potential for gun damage, stock splitting, and early looseness? An understanding of the firing forces as discussed above will help you assess each gun's condition and design better than if you simply admired the glossy finish and big-caliber holes in the muzzles!

