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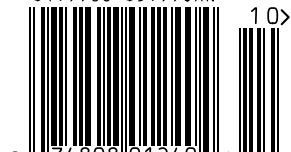
.44 Magnum

.300 Winchester
Magnum

October 2005 No. 237

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The Thompson/Center Custom Shop Encore is chambered for the .35 Remington and topped off with a T/C 2.5-7x scope. Photo by Stan Trzoniec.



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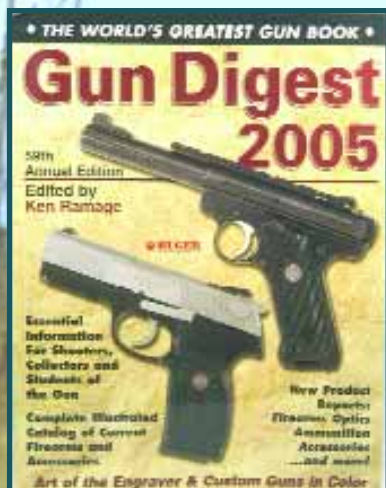
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Issue No. 237 October-November 2005

HANDLOADER

AMMUNITION RELOADING JOURNAL

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Subscription Information: 1-800-899-7810
www.riflemagazine.com

Handloader® (ISSN 0017-7393) is published bi-monthly by Mark Harris Publishing Associates, Inc., dba Wolfe Publishing Company (Mark Harris, President), 2625 Stearman Rd., Ste. A, Prescott, Arizona 86301. (Also publisher of *Rifle*® magazine.) Telephone (928) 445-7810. Periodical Postage paid at Prescott, Arizona, and additional mailing offices. Subscription prices: U.S. possessions - single issue, \$4.99; 6 issues, \$19.97; 12 issues, \$36.00; 18 issues, \$48.00. Foreign and Canada - single issue, \$5.99; 6 issues \$26.00; 12 issues, \$48.00; 18 issues, \$69.00. Please allow 6-8 weeks for first issue. Advertising rates furnished on request. All rights reserved.

Change of address: Please give six weeks notice. Send both the old and new address, plus mailing label if possible, to Circulation Dept., *Handloader*® Magazine, 2625 Stearman Rd., Ste. A, Prescott, Arizona 86301. POSTMASTER: Send address changes to *Handloader*®, 2625 Stearman Rd., Ste. A, Prescott, Arizona 86301.

Wolfe Publishing Company

2625 Stearman Rd., Ste. A

Prescott, AZ 86301

Tel: (928) 445-7810 Fax: (928) 778-5124

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IMR's TRAIL BOSS

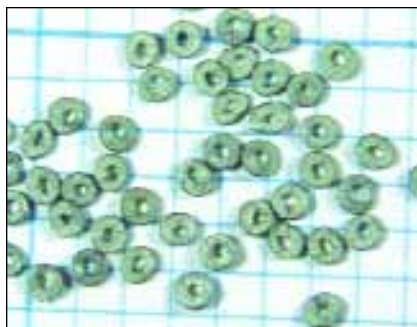
R.H. VanDenburg, Jr.



I suppose it was inevitable. With the popularity of cowboy action shooting, someone was bound to try to develop and market a smokeless powder expressly for this segment of the shooting public. And someone has. Hodgdon Powder Company introduced Trail Boss, albeit under its IMR banner, a powder that is “designed expressly for lead bullets at low velocities,” according to its press release.

The powder makes two claims. First, it functions well at the relatively low pressures we’ve come to expect in this sport. Second, its bulk density virtually precludes double charging, that is, dropping two powder charges in a case without overflowing the case or being impossible to not notice. Additionally, it is suitable for a wide range of cartridges and bullet weights – both handgun and rifle – within the admittedly narrow confines of cowboy action shooting.

I had to smile when I first opened a Trail Boss canister. The powder is extruded and flake cut with a single perforation and very closely resembles the Laflin & Rand Sharpshooter and Lightning powders of old. Laflin & Rand was a prominent nineteenth-century powder manufacturer. It was absorbed by DuPont in 1902, and L&R powders were eventually offered under the Her-



cules label in 1914, after the breakup of the DuPont explosives empire and the formation of Hercules, Atlas, etc.

I was fortunate to have some Sharpshooter and Lightning powders on hand, and I use them from time to time. Both were double-base powders introduced in 1897 and 1899, respectively, and were manufactured until 1950 or so. Trail Boss and the two older powders all have a nominal diameter of .075 inch but differ slightly in thickness. Officially, Trail Boss has a diameter of 1.92mm (.075 inch), a

Favorite Trail Boss Loads

	bullet (grains)	charge (grains)	velocity (fps)
.38 Special	148	4.0	697
.357 Magnum	150	4.0	783
.44 Russian	245	3.5	657
.44 Special	253	5.0	721
.44 Magnum	253	7.0	853
.45 S&W	247	4.8	655
.45 Colt	200	6.5	821
I	247	5.8	715
.45-70	300	16.5	1,337

Notes: All handgun barrels were 4% or 4 1/4 inches, except .44 Magnum, which was 7 1/2 inches.
Be Alert – Publisher cannot accept responsibility for errors in published load data.

thickness of .58mm (.023 inch), a perforation of .76mm (.030 inch) and a wall thickness of .0225 inch. In all of these powders, the perforation is clearly visible, making the flakes appear as tiny washers unlike, for example, PB in which the single perforation is obscured by coatings. To my eye, Trail Boss is a light gray in color whereas Sharpshooter was a medium gray and Lightning was a dark gray. Trail Boss is further distinguished from the earlier powders by being a single-base

powder with no nitroglycerin. Bulk density of Trail Boss is .328 gr/cc, a seemingly ridiculous figure when compared to the .700 to .900+ figures we see in modern, slow-burning rifle powders – but ideal for its application. The very modest density is further evidenced by only 9 ounces of powder being packaged in Hodgdon’s traditional one-pound canister. Trail Boss’s burning rate, while not definitive, is considered to be similar to Hodgdon’s International Clays. Finally, Trail Boss is manufactured by ADI in Australia, a source of many Hodgdon powders but a first for IMR. All other IMR powders are manufactured in Canada. Packaging for all is done in the United States.

In my tests I used Trail Boss with one or more bullets in the .38 Special and .357 Magnum, the .44 Russian, .44 Special and .44 Magnum and the .45 S&W Schofield and .45 Colt in handguns. I also tried the powder in the .45-70. I began with load data provided by IMR in sheet form that has been subsequently incorporated in the latest release of the IMR reloading pamphlet. There is data for a number of other cartridges. Throughout, I

PROPELLANT PROFILES



stayed in the area of the maximum loads presented and generally stayed away from the lightest bullet weights for which data is available. This was a personal preference developed through prior experience in cowboy action load testing. On the one hand, the very lightest bullets, especially at relatively low velocities, rarely shoot to point of aim due to their light recoil, but on the other, they seem to make a mockery of the tradition of the arms and times cowboy action shooting attempts to preserve. Not a position taken by everyone, mind you, and there is generally a variety of bullet weights and velocities from which to choose.

Throughout my tests I found the barrel lengths of my guns were invariably shorter than those used in developing the data. I tried to match the listed primers that were always of standard strength – either small or large – with the exception of the .357 Magnum, where IMR recommends Small Pistol Magnum primers. I spoke to Dave Campbell at Hodgdon about this, and he acknowledged that pressures were inordinately low in this cartridge, and the Magnum primers brought them up to something more reasonable. An examination of each gun after testing proved the powder to be very clean burning with a slightly sooty residue found on cylinder fronts, which I attribute to the generally low pressures. Velocities, where comparisons could be made, were surprisingly close to published figures. While I weighed all powder charges in the shooting tests I ran, I also made a series of metering tests. Here, Trail Boss meters very accurately, surprisingly so for its density. That density, or lack of it, can cause some problems. Depending on the desired weight, some pistol measures may not adjust enough to deliver Trail Boss charges. Changing to a rifle cylinder or rotor may be required

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30 Cal (.308 Dia) 165gr.....	003-30459	..27.05
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4831s

Powders are always interesting: their origins, their histories, what they are noted for, how successful they have been. In this brief look at 4831-type powders, we have five manufacturers of four powders sold in the U.S. by three companies (now two), but all are tied to a single source.

We have to go back to World War II. Our major explosives company, DuPont, was manufacturing a lot of powder for our military for use in small arms and artillery ammunition. After the war the government began to reduce its stockpiles, in particular its powders. In 1946 the government sold large quantities of its .30-06 rifle powder, called 4895, to Bruce Hodgdon. In 1949 Hodgdon bought another surplus powder, somewhat slower burning, used by the military in 20mm cannon ammunition. It, too, had been initially manufactured by DuPont and was called 4831. It was frequently referred to as “4350 Data Powder,” and handloaders were encouraged to use DuPont 4350 load data. Astute handloaders came to realize this powder was slightly slower burning than 4350 and a bit more of it could be used to advantage in small-expansion-ratio cartridges and some others, especially with heavier bullets. Jack O’Conner, while leading the charge on behalf of the .270 Winchester, effectively did the same for 4831 with his favorite, and oft publicized, load of 62.0 grains under a 130-grain bullet for 3,140 fps. No longer listed in most manuals, the *Hornady Handbook of Cartridge Reloading*, sixth edition, does, with its 130-grain bullets. Hodgdon’s current maximum is 60.0 grains, and it is a compressed load.

or using a more traditional measure. Either way, it’s simple enough to sort out.

While the accompanying table reflects my favorite Trail Boss

Some Favorite 4831 Loads

	bullet (grains)	charge (grains)	velocity (fps)	type
.243 Winchester	95	42.0	2,901	IMR-4831
.25-06 Remington	100	56.5	3,321	AAC-3100
.270 Winchester	130	59.0	3,144	H-4831
	140	58.0	3,057	H-4831sc
.300 Winchester Magnum	180	73.0	3,172	IMR-4831

Be Alert – Publisher cannot accept responsibility for errors in published load data.



By 1972 the surplus stocks of Hodgdon’s 4831 were running low. Not only did Hodgdon need to find a new source for this very popular powder, but DuPont, sensing a void with the declining supply, decided to market its own 4831 to the handloading, or canister, trade. Its first shipments were made in May 1973. Hodgdon, meanwhile, had settled on Nobel of Scotland as its new source. We now had two 4831s: DuPont’s IMR-4831 and Hodgdon’s H-4831. Moreover, even though they began as the same powder, they now had distinctly different burning rates with the DuPont powder being slightly faster. There is still some dispute over why this happened, but no dispute that it did.

Things weren’t to stay that way for long, for in 1977 the Sunday Powder Company of Lake Villa, Illinois, the forerunner of the Accurate Powder Company, began

loads to date, I worked with several others as well. In both the .38 Special and .357 Magnum, I tried a 148-grain wadcutter and a 150-grain semiwadcutter. The former may not be acceptable in

to offer another powder of similar burning rate. This one was labeled “Magnum Rifle Powder MR-3100.” According to Bob Hagel, on these pages in *Handloader* No. 92, he was told that “MR-3100 is IMR 4831,” but there was no mention of where Sunday/Accurate got it. In a recent conversation with Johan Loubser, who has been with Accurate for a long time, the original MR-3100 came from IMI in Israel. He thought they manufactured it, but it is possible they purchased it from another source. Regardless, it was, and is, closer to IMR-4831 in burning rate than is H-4831. Early MR-3100 sold to handloaders had no lot numbers, as it all came from a single lot.

In 1987 DuPont divested itself of its smokeless powder division with the formation of the IMR Powder Company. Powders were manufactured in Canada with

some cowboy action shooting but was very accurate in the .38 Special cases. In the .357 Magnum, better results were obtained with the 150-grain semiwadcutter.

packaging and sales efforts continuing in the U.S. When the IMR MR-3100 supply began to dry up in 1989, Accurate made arrangements to obtain the powder from the Czech Republic complete, this time, with lot numbers. In 1991 Hodgdon changed suppliers again with H-4831 now being manufactured by ADI in Australia. ADI had been busy developing new technology for the manufacture of powders with the goal of maintaining pressures regardless of temperature extremes. Hodgdon was able to take advantage of this development and in 1992 introduced "new" H-4198 and H-4350 with a shorter grain but without fanfare. In 1994, however, the company introduced H-4831sc with the same burning rate of H-4831 but with the new "short cut" grain structure. Wisely, Hodgdon kept its "old" H-4831 as well but began to market what it refers to as its Extreme series of powders that are insensitive to temperature changes. At last count there are 11 powders in the series.

While all these "4831-type" powders had the same origin, they are now quite distinct with only H-4831 and H-4831sc being interchangeable. Indeed, Hodgdon does not distinguish between the two in its published load data. And to wrap up the story, Hodgdon has recently purchased the IMR Powder Company and Western Powder of Miles City, Montana, has purchased the Accurate Powder Company. All lines continue in production.

Many current reloading manuals list data for one or more of these powders with a given cartridge and bullet weight. A careful review will highlight the subtle but important differences.

In the .44 Russian, I used a 245-grain semiwadcutter, as the traditional bullet weight for the cartridge was 246 grains. In the .44 Special, although the same bullet as found in the .44 Russian

was traditional, I used an NEI cast Keith bullet that weighed 253 grains. Both were fired in a custom, old model Ruger Blackhawk .44 Special. Accuracy was slightly better with the full-length Special case. In the .44 Magnum, in a Ruger Super Blackhawk, both a 235-grain semiwadcutter and the above 253-grain Keith bullet performed very well.

In the .45 S&W Schofield, I used a 247-grain roundnose flatpoint (RNFP) from Meister Bullets. In the .45 Colt, I bowed to cowboy action light bullet fans a bit and tried a 200-grain RNFP that shoots close to point of aim and the more traditional 247-grain RNFP. Both of the Colt rounds outperformed the shorter .45 S&W in the same Colt Single Action Army.

While neither the .44 Russian nor the .45 S&W performed as well in the same gun as the longer .44 Special or .45 Colt, respectively, no five-shot group from any cartridge ever exceeded the 3½ inch 10-ring of the standard 25-yard bullseye target. In fact, no group with the exception of the above .44 Russian and .45 S&W ever exceeded 2½ inches. All targets were shot at 25 yards. I have no doubt further work will improve the performance of these two as well, as would shooting them in guns chambered for these cartridges.

I also tried Trail Boss in the .45-70 with 300- and 405-grain cast bullets. According to IMR, this published data is to be considered safe in trapdoor rifles. I was very impressed with the 300-grain load that produced trapdoor-like velocities in my Marlin 1895 Cowboy with its 26-inch barrel. Accuracy was excellent.

A brand-new offering, Trail Boss is likely to get a few folks thinking. Not only cowboy action shooters, but plinkers, general handgun fans and maybe even bullseye shooters. There is much more to be explored, and its old-time look doesn't hurt a bit.

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Handloading the **.300 Winchester** Parker-Hale Model 1200

Steve Gash

Interesting foreign firearms periodically make it to our shores, and the British Parker-Hale Model 1200 Super bolt-action rifle is one of them. The 1200 Supers were introduced in 1968 and were made on a commercial K-98 Mauser action. According to Ludwig Olson in his *Mauser Bolt Rifles* (1995), the Model 1200 Supers' receivers and bolts were made in Spain and the remaining parts by Parker-Hale in Birmingham, England.

***Custom
Hunting Loads***



Left, Steve used an Oehler M-35P chronograph. Above, the Parker-Hale Model 1200 Super M was built on a Mauser Model 98 action with a "California" look: skip-line checkering, rollover cheekpiece, rosewood 45-degree forend tip and grip cap.

The Caldwell Lead Sled and two bags of shot tamed recoil.

r Magnum



The rifles featured adjustable triggers, hinged floorplates, hooded ramp fronts, folding middle sights, and the receivers were drilled and tapped for scopes. At various times, single set triggers were listed as an extra-cost option, but I have not seen one.

The stock had a decidedly “California” look with a monte carlo comb, rollover cheekpiece, distinctive “contrasting color” forend tip set at 45 degrees and a grip cap. The right side of the grip had a highly functional palm swell, named for Louis Wundhammer, the German-born gunsmith who developed it. If not too large, this “bulge,” as Roy Dunlap called it, positions the shooter’s hand uniformly, especially for offhand shooting.

The line included sporters, magnums and varmint models. Sporters were offered over the years in various calibers, including the .22-250 and .25-06 Remingtons, the .243, .270 and .308 Winchesters, and of course, the .30-06. Some metric cartridges were also chambered: the 7x57mm and 8x57mm Mausers, 6.5x55 Swedish Mauser and 7x64mm Brenneke. These models were listed with 22- or 24-inch barrels, depending on caliber.

The rifle was also offered in two, 24-inch barrel magnum calibers called the “1200 M Super Magnum.” This line was first chambered in 1968 with the popular 7mm Remington Magnum. In 1969 the first of two .30-caliber magnums, the .308 Norma Magnum, was released, but this chambering was dropped in 1971 in favor of the more readily available .300 Winchester Magnum.



The forend tip and grip gap appeared to be made of rosewood and were set off by white-line spacers. Other stock embellishments included non-detachable sling swivels and a recoil pad marked “PH England.” The skip-line checkering might be considered ostentatious by some, but it was well done, attractive and functional. The stock had a fairly glossy finish, and the metal was a lustrous blue, except for the action that was left white. The bottom of the bolt handle was flat.

The varmint version was gussied up with a glass-bedded, free-floating stock and what was described as a “24-inch, 4-pound target barrel” that came equipped with “target scope base blocks.” Varmint calibers were the .22-250 and 6mm Remingtons and .243 Winchester. Top of the line was the “Presentation” model that was the same as the standard 1200 Super but featured a French walnut stock, fully scroll engraved action, trigger guard, floorplate and a barrel without open sights.

Parker-Hale

The source of these rifles passed from firm to firm over the years. In 1968 they were imported into the United States by a firm called Service Armament of Ridgefield, New Jersey. The next year, JANA International Com-

The test rifle was imported by JANA International.

pany in Denver took over importation, and it continued to do so until 1981, when JANA ceased operations. In 1982 Kassnar Imports of Harrisburg, Pennsylvania, was the importer. The line appears to have been dropped from the American marketplace in 1990.

The test rifle was imported by JANA International and came to me in a circuitous route that once again led it through Denver. My pal Bob French, proprietor of French's Gun Shop in the mile-high city, now and then comes up with unique guns that just beg to be investigated. Knowing my proclivity for the unusual, he casually mentioned that he had a



The cheekpiece was nicely done and slopes away from the shooter's face.

Parker-Hale 1200 M Super .300 Winchester Magnum. After a short haggle period, arrangements were made for the old rifle to journey east to begin another chapter in its history. I envisioned it as a "project" rifle. Oh, it was that, all right.

The rifle came with Weaver bases and unidentified rings that held an older "no name" 3-9x scope from Japan that was quickly replaced with a new Sightron SII SS 3.5-10x44 Side Focus scope, one of the brightest and best I have ever tested. Click adjustments are ¼ minute, pre-

cise, clearly marked and can be heard as well as felt. I "shot the square" with it, and the adjustments were repeatable and moved the point of impact as expected. Traditional focusing is done by turning the ocular lens and securing it with a lock ring, and the "side focus" feature is the parallax adjustment. This does a terrific job of eliminating reticle wobble as the shooter moves laterally behind the scope. It's a snap to adjust.

The scope also has acres of eye relief – of some importance on a hard kicker. The Sightron catalog

Below, the Model 98 receiver and bolt were made in Spain, and the remainder of the rifle was made and assembled in Birmingham, England. Right, the brilliant optics and precise adjustments of the Sightron 3.5-10x44 SII SS scope aided accuracy.



Table I Parker-Hale Model 1200 Super M .300 Winchester Magnum Load Data

bullet (grains)	powder	charge (grains)	velocity (fps)	coefficient of variation (percent)	group (inches)	muzzle energy (ft-lbs)	comments
165 Hornady InterBond	H-1000	79.0	2,747	0.33	1.97	2,765	mild
	Hunter	71.0	2,948	0.51	1.26	3,185	highest velocity recorded
	IMR-4350	69.0	2,813	0.71	3.32	2,900	
	IMR-4831	70.0	2,852	1.19	2.95	2,981	
	IMR-7828	76.0	2,906	0.55	0.91	3,095	best 165-gr. IB load
	VV-N560	73.0	2,854	0.18	1.92	2,985	very loud report
	RL-19	72.0	2,796	0.25	0.98	2,865	mild
	RL-22	76.0	2,934	1.09	1.73	3,155	
	RL-25	77.0	2,772	0.65	0.59	2,816	good load
				average accuracy:	1.74		
180 Hornady InterBond	H-1000	77.0	2,604	0.50	1.32	2,711	
	IMR-7828	75.0	2,846	1.09	1.46	3,238	
	Magnum	81.0	2,862	0.63	0.89	3,275	
	Norma MRP	74.5	2,863	0.73	1.26	3,277	
		75.0	2,874	0.28	1.10	3,302	great load
	VV-N560	74.0	2,816	0.14	1.17	3,170	
	RL-25	77.0	2,763	0.65	1.31	3,052	
	W-785	72.0	2,755	2.11	0.94	3,034	
				average accuracy:	1.18		
180 Nosler AccuBond	H-1000	78.0	2,623	0.88	2.54	2,751	
	IMR-7828	75.0	2,828	0.71	2.56	3,197	
	Magnum	81.0	2,782	0.68	3.48	3,094	
	Norma MRP	75.0	2,848	0.74	2.54	3,243	
	VV-N560	74.0	2,740	0.77	2.17	3,001	
				average accuracy:	2.66		
180 Nosler Partition	IMR-7828	74.0	2,750	0.47	1.69	3,023	mild
	Norma MRP	74.0	2,821	0.67	1.42	3,182	2005 elk load
		74.5	2,814	0.78	1.53	3,166	
		75.0	2,859	0.49	1.61	3,268	
	VV-N560	73.0	2,728	0.62	0.65	2,975	
				average accuracy:	1.38		
180 Speer Hot-Cor SP	H-1000	77.0	2,603	1.34	0.35	2,709	
	H-4831	69.0	2,546	0.98	1.46	2,591	
	IMR-7828	75.0	2,745	0.84	1.14	3,012	
		76.0	2,821	0.92	0.83	3,182	
	Magnum	80.0	2,764	0.18	1.57	3,054	
		82.0	2,850	0.67	0.98	3,247	good load
	VV-N160	72.0	2,747	2.48	1.87	3,017	
	RL-22	74.0	2,700	1.07	1.03	2,914	
	RL-25	77.0	2,738	0.51	1.08	2,997	
				average accuracy:	1.15		
200 Nosler AccuBond	IMR-7828	72.0	2,679	0.75	3.46	3,188	
	Magnum	76.0	2,604	0.38	4.80	3,012	
	Norma MRP	71.0	2,657	0.68	6.88	3,136	
	RL-25	75.0	2,613	0.46	5.24	3,033	
	Retumbo	81.0	2,635	0.72	7.19	3,084	heavily compressed
					average accuracy:	5.51	
200 Speer Hot-Cor SP	H-1000	75.0	2,532	0.79	1.18	2,848	
		76.0	2,593	1.31	1.48	2,987	
	H-4831	64.8	2,426	0.87	1.30	2,614	
	IMR-7828	71.0	2,538	1.18	1.61	2,861	
		73.0	2,667	1.46	1.28	3,160	
	Magnum	72.0	2,456	1.26	0.45	2,679	
		75.5	2,602	0.50	1.14	3,007	
		76.5	2,646	0.42	1.48	3,110	
	RL-22	70.0	2,566	0.23	2.15	2,925	
	RL-25	71.0	2,452	0.77	0.98	2,671	
		74.5	2,604	0.61	0.85	3,012	great load
	Retumbo	80.0	2,616	0.84	0.83	3,040	great load
		82.0	2,726	0.48	1.40	3,301	
					average accuracy:	1.24	
				average of all handloads tested:	1.84		

factory load (three, five-shot groups):

180 Winchester Power-Point	2,879	0.66	1.16	3,314
	average accuracy of all loads tested: 1.82			

Notes: A Parker-Hale Model 1200 Super M with a 24-inch barrel, Timney Deluxe Featherweight trigger and a Sightron SII SS 3.5-10x44 scope (set at 8x) was used for all testing. Heaviest charges shown are considered maximum for this older rifle. Accuracy is for three, three-shot groups (unless otherwise noted) at 100 yards from a benchrest. Velocities were measured with an Oehler M-35P chronograph with the front screen 12 feet from the rifle's muzzle. Range temperatures were 58° to 78° F. Overall loaded length for all handloads was 3.37 inches, .010 inch shorter than magazine length. Winchester cases and Federal 215 primers were used for all handloads.

Parker-Hale

lists eye relief as 4.7 to 3.7 inches, and Alan Orr of Sightron assured me the SII SS scope can take any punishment delivered by a shoulder-fired rifle. So equipped, the outfit tips the scales at 8 pounds, 6 ounces.

First up was a thorough cleaning. The rifle had obviously been well cared for, as the bore was bright and shiny, and there was no visible erosion at the throat. Powder fouling was quickly taken care of by Montana X-Treme Bore Solvent from Western Powders. Copper was removed with a couple of doses of

In the Parker-Hale, the 180-grain Hot-Cors were the most accurate bullet tested.



The four-groove barrel picked up some copper fouling that was easily removed with Montana X-Treme solvents.

Montana X-Treme 50 BMG copper remover (see sidebar).

Inletting on the Model 1200 did not show evidence of after-market whittling. The stock screws were not “buggered” but were a bit loose after goodness knows how many years of storage and inattention. I set about to fix the “inattention” part.

As received, the trigger pull was



Above left, the trigger housing broke apart when the stock was removed. Right, a Timney Featherweight Deluxe trigger was a fine replacement.

somewhat heavy, with considerable creep, and the sear did not always catch the cocking piece. Say, did we not read that the Model 1200 Super Ms came with a “fully adjustable trigger”? Off came the stock, and I came face to face with used-gun reality.

First of all, the M-1200’s trigger housing is cast of what can only graciously be called “cheap pot metal” that had developed conspicuous cracks in various places. As soon as I touched the adjustment screws, the housing broke into three pieces, and screws, pins and detent balls scattered everywhere. Apparently the stock was holding everything together, and when free of the wood, the metal simply let go.

The Parker-Hale trigger housing

has the familiar pin that attaches it to the receiver but lacks the screw at the front. Instead, the housing extends toward the back, where the rear guard screw holds the trigger fast to the receiver.

The nice folks at Timney Mfg., Inc. assured me their Mauser trigger would fit the Parker-Hale, and indeed it did. Since the original trigger also had a side safety, I ordered a Timney “Featherweight Deluxe,” which has a side safety. Installation was a snap, and with only minor adjustments, the trigger registered a crisp 3 pounds, 2 ounces on the Lyman Digital Trigger Pull Gauge.

Another problem was a very mushy striker spring; envision a slow “ker-plunk,” and you get the idea. Also the magazine spring

Table II **Bullet Length and Accuracy**

bullet (grains)	bullet length (inches)	average velocity (fps)	optimum twist (inches)	average accuracy (inches)
180 Speer Hot-Cor	1.162	2,724	19.29	1.15
180 Nosler Partition	1.263	2,794	16.19	1.38
200 Speer Hot-Cor	1.268	2,571	16.30	1.24
165 Hornady InterBond	1.313	2,847	14.33	1.74
180 Hornady InterBond	1.376	2,798	13.36	1.18
180 Nosler AccuBond	1.389	2,764	13.00	2.66
200 Nosler AccuBond	1.494	2,637	11.39	5.51

Notes: Data is sorted by bullet length. “Optimum” twist was calculated by the Harris formula shown in Figure 1. Velocities and accuracy figures are for the handloads tested in the Parker-Hale M-1200.

Parker-Hale

The lineup of bullets tested include (from left): 180- and 200-grain Speer Hot-Cors, 180- and 165-grain Hornady InterBonds and 200- and 180-grain Nosler AccuBonds.



had lost its zip and wouldn't stay put in its recess in the floorplate. A 28-pound Wolff "Blitzschnell" striker spring and a new magazine spring from Brownells easily fixed both problems.

The Parker-Hale's caliber was an attraction for me. The .300 Winchester needs little introduc-

tion to serious riflemen. It is a powerful big game round and is accurate enough to have seen serious work on the target line, as

well. Introduced in 1963 in Winchester's Model 70, the round made quite a splash. The listed velocity of early 180-grain factory loads was 3,070 fps, but John T. Amber, writing in the 1964 *Gun Digest*, clocked them at 3,193 fps. The 2005 edition of Winchester's ammunition catalog shows a velocity for 180-grain Power-Points at 2,960 fps.

To set a baseline, I fired several groups with Winchester Super-X Power-Point 180-grain factory

Figure 1.

$$p = \left[\frac{20.52}{(l/d)^{2.25}} \right] \times \sqrt{\frac{G}{\left(1 - \frac{w}{5705}\right) S}}$$

p = twist (in.) G = weight of bullet (gr.)
 l = length (in.) w = muzzle velocity (fps)
 d = diameter (in.) S = stability factor

Formula for determining the proper barrel twist.

Table III

Nosler 180-grain AccuBond

caliber	rifle	barrel length (inches)	twist (inches)	powder	charge (grains)	velocity (fps)	accuracy (inches)
.30-06	Ruger Model 77RL	20	10%	RL-19	55.0	2,378	.94
	Remington Model 700	21½	9%	RL-19	55.0	2,386	1.69
.300 H&H Magnum	Remington Model 700	24	9%	IMR-4831	68.0	2,849	1.10
.300 Winchester Magnum	Parker-Hale Model 1200	24	11½	H-1000	78.0	2,623	2.54
				IMR-7828	75.0	2,828	2.56
				Magnum	81.0	2,782	3.48
				MRP	75.0	2,848	2.54
				VV-N560	74.0	2,740	2.17

Nosler 200-grain AccuBond

caliber	rifle	barrel length (inches)	twist (inches)	powder	charge (grains)	velocity (fps)	accuracy (inches)
.30-06	Ruger Model 77RL	20	10%	RL-22	56.0	2,350	2.84
	Remington Model 700	21½	9%	RL-22	56.0	2,375	2.56
.300 H&H Magnum	Remington Model 700	24	9%	IMR-4831	65.5	2,712	2.48
.300 Winchester Magnum	Parker-Hale Model 1200	24	11½	IMR-7828	65.5	2,679	3.46
				Magnum	76.0	2,604	4.80
				MRP	71.0	2,656	6.88
				RL-25	75.0	2,613	5.24
				Retumbo	81.0	2,635	7.19

Notes: Twists were measured for each rifle with a tight patch on a cleaning rod. Velocities are the averages for the handloads tested.

Be Alert - Publisher cannot accept responsibility for errors in published load data.

loads. The velocity of this load is listed at 2,960 fps, and it registered 2,879 fps from the Model 1200. Groups averaged a very respectable 1.16 inches for three, five-shot groups at 100 yards.

A set of Hornady New Dimension dies was used in a Redding T-7 turret press to prepare test loads. A Wilson adjustable cartridge case gauge was used to set the sizing die to just touch the case shoulder enough to allow for easy chambering but not enough to increase the chances of incipient case separation by oversizing belted magnum rounds. Nevertheless, case life of the Winchester cases I used was dismal. After only one or two loadings, the necks and/or shoulders often split. This was true for cases from factory loads too. Federal 215 Magnum primers were used for all handloads. With 180- and 200-grain bullets, the Model 1200 delivers about all one could want in the way of power and accuracy. As expected, the slow-burning powders were best, including some of the newer numbers from Hodgdon, Alliant, Vihtavuori and Ramshot (Western Powders).

The magazine length of the Model 1200 is 3.38 inches; consequently, all handloads were seated to an overall loaded length of 3.37 inches to ensure easy feeding through the magazine. The throat is pretty long, however, and this seating gave the bullets a running start at the rifling. I essentially matched the velocity of the Winchester factory loads with numerous 180-grain bullets. Top velocity was 2,874 fps with 75.0 grains of 1986-vintage Norma MRP and the new Hornady 180-grain InterBond bullet.

The results of the range tests produced good news and bad (see Table I). First, the good news. I have for years used Speer Hot-Cor bullets for mule deer and elk – the 180-grain version in the .300 H&H Magnum and the

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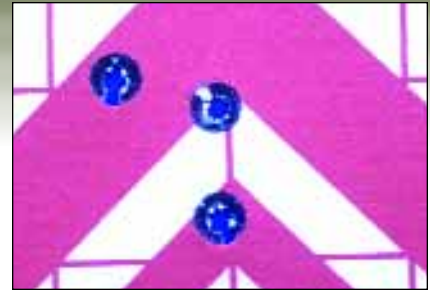
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Parker-Hale

Specifications

Caliber: .300 Winchester Magnum
Action type: Model 98 Mauser
bolt-action repeater
Magazine capacity: 4
Trigger: 5 to 6 pounds (as received);
3 pounds with Timney trigger
(as tested)
Sights: bead front, folding rear, tapped
for scope mounts
Barrel: 24 inches, one-in-11½-inch twist
Finish: metal, polished blue; stock, glossy;
skip-line checkering
Overall length: 44½ inches
Weight: 7 pounds, 4 ounces (as received);
8 pounds, 6 ounces with
Sightron 3.5-10x44 SII SS scope
(as tested)
Manufacturer: Made by
Parker-Hale, Ltd.
Birmingham, England
Importer: JANA Imports
Denver, Colorado
Retail Price: \$149.95 (in 1968)
\$699.95 (in 1990)



Above, Ramshot Powder's Hunter was accurate with the 165-grain Hornady InterBond, as was Magnum with the Hornady 180-grain InterBond and the 200-grain Speer Hot-Cor. Right, best accuracy was obtained with 75.5 grains of Magnum and the 200-grain Speer Hot-Cor.

200 grainer in Weatherby's version, and both worked to perfection. In the Parker-Hale, the 180-grain Hot-Cors were the most accurate bullet tested, with a group average of only 1.15 inches. With 82.0 grains of Ramshot Powder's Magnum, velocity was 2,850 fps and groups averaged .98 inch. Also good was 76.0 grains of IMR-7828 for 2,821 fps, averaging .83 inch. Close behind in accuracy was Hornady's new

180-grain InterLock bullet with a group average of only 1.18 inches. Again, Magnum turned in groups under an inch.

The always deadly Nosler 180-grain Partition topped out at 2,859 fps with 75 grains of MRP but, at 1.61 inches, was less accurate than the more sedate load of 73.0 grains of Vihtavuori N560 High Energy powder at 2,728 fps that grouped under an inch. Overall, the winner of the 2005

MONTANA X-TREME CLEANING PRODUCTS

At the 2005 Western Powders' writers seminar and prairie dog shoot in Miles City, Montana, company President Doug Phair announced that his firm had recently acquired the Montana X-Treme line of cleaning products. When asked why, he replied, "Because they're the best." Sure, I thought; you sell them. Shortly thereafter, a CARE package of Montana X-Treme products arrived, and after using them, I concluded that Doug's statement was not brag. The Montana X-Treme line is a coordinated assemblage of products that addresses virtually all aspects of gun cleaning and storage.

The Bore Solvent is a general all-around cleaner that removes powder and primer residue. It made quick work of fouling between groups. It contains ammonia and attacks jacket fouling, as well.

The solvent called 50 BMG is a super copper killer. Try this test: clean a rifle to your satisfaction with your normal copper remover, then use 50 BMG. I guarantee there will be "blue goop" on the first patch through the barrel. The aroma of some of these products is pretty stout, however, so use in a well-ventilated area.

The Copper Cream is a non-drip liquid that is said to remove copper, lead, plastic wad residue and moly fouling. I tried it for copper removal, and it did just fine. It is also recommended for barrel break-in.

The SASS crowd is not overlooked, either. X-Treme's Cowboy Blend is especially formulated to remove lead and powder fouling, and it is said to be great for .22 rimfires. I used it to clean a leaded-up .44 Magnum, and Cowboy Blend whittled the lead out

in a jiffy, with just patches, and was actually faster than using brushes.

There are a couple of specialty oils available too. The Bore Conditioner Accuracy Oil is a highly refined lubricant that contains no PTFE, silicones or synthetic stuff that can leave residue in barrels.

Montana X-Treme cleaning solvents made short work of powder and jacket fouling.



elk load sweepstakes was the 180-grain Partition with 74.0 grains of MRP at 2,821 fps and 1.42-inch groups.

The 200-grain Hot-Cors topped 2,600 fps with five of the loads tested and was the third most accurate bullet tested at 1.24 inches. The best combination of velocity and accuracy was with 82.0 grains of Hodgdon's Retumbo at a bone-crunching 2,726 fps with groups of 1.40 inches and 3,301 foot-pounds (ft-lbs) of energy. This powder charge is rather heavily compressed and is a stiff load, but it is 3 grains under the maximum charge shown in Hodgdon's 2004 *Annual Manual*.

Attentive readers will note that the quest for a suitable deer and/or elk load could stop right here. The group average for the 35 loads examined so far is a mere 1.22 inches – not bad for an older, been goodness-knows-where rifle. Now for the bad news, sort of.

As I was finishing up this report, Nosler and Hornady forwarded samples of their new bonded core bullets for testing. Given the great results I had experienced so far, I was looking forward to trying these sleek bul-

(Continued on page 86)

Use it after a thorough cleaning with the other Montana X-Treme products. The other oil is plain ol' Gun Oil, and I like it a lot. It is a high- and low-temperature lubricant that contains no Teflon and helps prevent copper and lead fouling and rust. It can be used for barrel break-in.

The Bore Cleaning and Polishing Compound sounds suspiciously like a bore-lap to me. It is described as a semi-abrasive compound that aggressively removes old fouling and contains an oil, so no further lubrication is required.

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Last of the lube-goops is its Gun Grease and is one of my favorites. This great stuff comes in a neat syringe that allows you to put a tiny dab on bolt lugs and other camming surfaces. It is rated effective from -50 to 600 degrees Fahrenheit.

Other interesting items in the X-Treme line are its nylon bore-cleaning brushes. These are the stiffest and toughest brushes I have ever used. They make short work of normal fouling and can be slathered with one of the ammonia-containing copper removers without fear of ruining

the brush, as would be the case with bronze brushes. Last, but not least, are the non-synthetic cleaning patches. I've used the .22- and .30-caliber variety, and they worked like a charm.

As far as I'm concerned, gun cleaning is a chore, and anything that will hasten the task is a blessing. The X-Treme gun cleaning products certainly qualify.

Montana X-Treme products are available at various dealers, or from Western Powders, Inc., PO Box 158, Miles City MT 59301; 1-800-497-1007. •

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It follows that for plain good looks Conetrol mounts simply have no peer. To contend otherwise is to contend the assortment of lugs, knobs, bosses, studs, bumps and levers common to other mount designs would be there even if they served no purpose.

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- ▶ **Solid four-point attachment to factory-drilled gun receivers customary on bridge as well as two-piece bases.** (Others use a three-screw setup as standard and claim a franchise on strength, yet the failure of a single screw would put them out of commission. Try that test hypothetically on a conetrol bridge mount!)

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Parker-Hale

(Continued from page 73)

lets with their high ballistic coefficients.

By chance, the first of the new bullets I tried was the 180-grain Hornady InterBond. Except for one load, it shot well, averaging 1.18 inches. I turned to the 180-grain Nosler AccuBond. No group was under 2 inches, and one was over 3. I figured this rifle just didn't like this bullet and tried the 165-grain Hornady InterBond. With a few exceptions, its accuracy was very good, with the four best loads averaging .94 inch. Next up was the 180-grain AccuBond. Five loads averaged 2.66 inches — not really acceptable, considering the results with other bullets of similar weight.

The 200-grain AccuBond followed. The "groups" looked like scatter diagrams — nothing under 3 inches and some were 6 or 7 inches. Aghast, I checked the stock and scope mount screws, and all were tight. I tried these loads again, with the same results. About this time I noticed that both of the AccuBonds were rather long, especially the 200-grain bullet. I began to suspect rifling twist, even though no bullet tipping or yaw was noted on the targets.

The listed twist for .300 Winchester Magnums is one turn in 10 inches for every rifle I could find except one — the Husvarna that reportedly had a 12-inch twist. I could find no such data for the Parker-Hale, so I measured its twist with the ever-popular tight-patch method. It turned out to be one turn in 11½ inches. A bit off the charts, but I still thought this should stabilize about any .30-caliber hunting bullet.

One of the great things about this business is that there are lots of knowledgeable folks out there who are glad to share information. I called Dave Brown, ballistics technician at Sierra Bullets,

and asked how they determine the proper twist for a given bullet. Dave stated that the old Greenhill formula is too crude, and that Sierra uses a more precise (and complicated) formula that was derived empirically many years ago by C.E. Harris and published in the *American Rifleman* (see Figure 1).

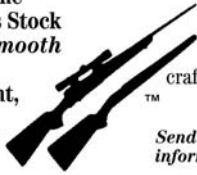
I entered the formula into a spreadsheet and calculated the optimum twist required to stabilize each of the bullets tested at the average velocities of my handloads. The results, along with average accuracy of each bullet, are shown in Table II. The data is sorted by bullet length, shortest to longest, and a couple of interesting things pop out. First, note that the best accuracy was with the shortest bullet (180-grain Speer Hot-Cor), and with the Parker-Hale, as bullets got longer, accuracy generally went south. Second, while the twist predicted to stabilize the 180-grain bullets would seem to be okay at around 13 inches, the 11.39 inches needed to stabilize the 200-grain AccuBond is right on the ragged edge for the Parker-Hale's 11½-inch twist.

Soldiering on, I dug into the safe and pulled out a couple of other .30-caliber rifles of known accuracy: a Ruger Model 77RL .30-06 and a Remington Model 700 Classic .300 H&H Magnum, and I borrowed a Model 700 .30-06 Mountain rifle from shooting pal Jeff Hewitt. All supposedly have nominal 10-inch twists, but the Ruger's spin measured 10¼ inches, and both Remingtons were 9¾ inches. By way of reference, the group average for the Ruger .30-06 with 180-grain Speers is 1.37 inches and .83 inch with 165-grain Hornadys. The

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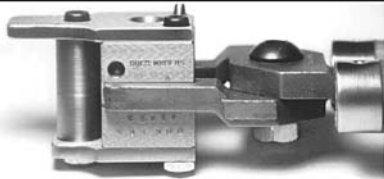
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Model 700 '06 averaged about an inch with 165-grain Hornady boat-tails. With the .300 H&H the 180-grain Speers averaged 1.15 inches, and 200-grain Speers averaged 1.24 inches.

I tried representative loads in all three rifles with the two AccuBonds, and the results of this exercise are shown in Table III. All of the additional test rifles shot the 180-grain AccuBonds reasonably well, especially the Ruger '06 and the .300 H&H. With the 200-grain AccuBond, they shot groups about half the size of those from the Parker-Hale but about twice the size of their proven accuracy with other bullets.

I was now convinced the Model 1200's twist was just too slow for these long-for-their-weight bullets, and that twist played a big-

ger role in rifle accuracy than I had previously surmised. Last year, I got great accuracy with the 8mm, 1.389-inch, 200-grain AccuBond in a Remington Model 700 Classic 8x57mm Mauser. At 2,540 fps with my handload, the Harris formula predicts an optimum twist of 14.70 inches. The Remington's twist measures 9½ inches, and the group average for all loads with this bullet was 1.01 inches.

I discussed this situation with J.R. Nosler. He noted that the 200-grain, .30-caliber AccuBond is the longest bullet Nosler makes, and that shooters should indeed check their rifle's twist. Nosler ballisticians Mike Lake says the "recommended" twist for this bullet is 10 inches, and that 9½ inches is "optimum." To my knowledge, no .30-caliber production rifles are offered with a twist faster than 10 inches. No matter how accurate a bullet is, it still has to spin fast enough to stabilize.

So, just what, if anything, does all this prove? No bullet shoots well in every rifle; that's why we handload and test and retest. It also illustrates that just because a certain bullet doesn't perform up to snuff, we can't assume it's only because of the bullet. It may be some other overlooked factor – like rifling twist. It also shows that the twists listed for at least some factory rifles are a bit off the factory listing, and that the Parker-Hale's twist is a lot slower than assumed.

In retrospect, however, I'm satisfied with the performance of the old Parker-Hale. Yes, it was a "project," but it demonstrated the old adage that in function there is beauty. Plenty of loads – with old and new bullets – turned in performances perfectly suitable for a variety of big game. Plans are for it to accompany me on the annual elk hunt this fall. Perhaps it has hunted elk before. I'm confident this trip won't be its last.



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Winchester, Federal, Remington, Norma – until recently, those were the basic choices available to handloaders who wanted to build their own loads using virgin, unfired brass. Now there's a new player on the board. Long known for the highly respected hunting bullets it manufactures, Nosler is hardly a new name in the shooting industry. Not long ago, Nosler decided to shake things up and change the rules.

The company's announcement of a new, high-grade bolt rifle bearing the Nosler name, along with its own line of premium factory-loaded ammunition, caught everyone I knew by surprise. Going head-to-head with the big four ammunition makers was a daring move. Most of those manufacturers have long offered Nosler bullets in selected factory loads. Some industry pundits suggested Nosler was biting the hand(s) that had long fed it.

Nosler's latest move is offering premium, unfired cases to reloaders. I have a number of these cases (as well as a few boxes of loaded Nosler ammunition), and I must say I'm impressed. While I haven't yet determined how many times these cases can be fired and reloaded before being ready for the discard pile, these cases appear to be of very high quality.

The company says NoslerCustom brass is all weight sorted and inspected by hand. Flash holes are individually deburred and checked for alignment, while case mouths are chamfered and deburred. Care in manufacturing is evident.

I'm not sure who's producing these cases for Nosler. Consider-



ing the limited quantity being made, this particular piece of manufacturing is obviously outsourced to some other company. I might have guessed Norma as the likely source if not for Nosler's proud "Made in the USA" disclaimer. Nosler is understandably tight-lipped on the subject.

I expect handloaders to welcome this additional brand of quality virgin cases. Naturally, "quality" means "premium prices."

Two local retailers I contacted had no NoslerCustom brass in stock, but checking the NoslerCustom website showed a 50-round pack of .243 WCF brass selling for a nickel under \$40. That's 80¢ a pop. The same quantity of .22-250 Remington cases went for \$34.95, while 50 .223 Remington cases were listed at \$29.95.

Incidentally, those were the only three choices currently available in Nosler's online catalog. Other cases scheduled to appear in the lineup soon include 7mm Remington Magnum, .270 Winchester, .308 WCF, .30-06 and .300 Winchester Magnum brass. More to follow later.

For additional information, contact Nosler, Inc., Dept. HL, 107 Southwest Columbia, Bend OR 97709; telephone toll-free: 1-800-285-3701; or visit online at: www.noslercustom.com.

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A few days before deer season began, I loaded my first 40 rounds – only to discover the manual had somehow flipped from the .308 Winchester page to a page of .30-30 data. Inadvertently loading those 40 rounds to .30-30 velocities forced me to add



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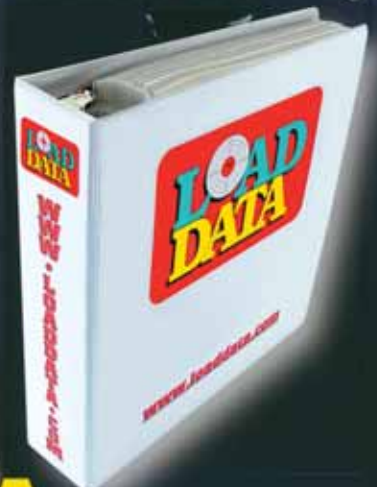
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