

Ranch Dog's Load Notes

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With the lack of load data for all but the Lyman bullets, most cast bullet handloaders use published data to guess an appropriate load. Ranch Dog use QuickLOAD© to generate his loads. QuickLOAD© is still a guess, but a very good calculated guess, with results that have been proven through my extensive velocity and pressure testing. I use QuickLOAD© to generate my LoadNotes pages so that I have access to the information at my reloading bench and online. My LoadNotes are for my own use. If you are viewing these pages, considered this an advertisement of the possibilities that QuickLOAD© can offer. I suggest that you purchase a copy of the software and learn to use it first hand as it will only make you more knowledgeable in what is taking place in the chamber at the shot.

Primers use

The primers used with the cartridge are indicated on the individual LoadData sheets.

Case Fill Capacity %

Max case fill capacity is limited to 105%. A charge at 100% is not under compression, a charge at 101% is. It has been my experience that it is difficult to maintain a uniform cartridge overall length with a lubed cast bullet at compressions above that. Additionally, my pressure trace experience has seen unpredictable results at high compression percentages.

A minimum case fill capacity is also considered to prevent the powder from becoming a "shaped charge" resting on the bottom of a chambered charge. For rifles, the minimum varies based on the targeted pressure and is reflected the chart below. Pistols use a minimum of 55% to prevent double charging a case.

Rifle Cartridge Min Case Fill Capacities (%)				
Pressure	25.0	30.0	35.0	Max
Min Case Fill %	55	60	65	70

Burnt %

The column titled "Burnt %" is a calculation of just how much of the specific charge is consumed during combustion. It can be used to compare the efficiency of one powder against another.

Alloy, Treatment , and Chamber Pressures

RD loads to NMP (Nominal Maximum Pressure) which is approximately 85% of Pmax. Pressure just like velocity experiences deviations from an average, both extreme spread (ES) and standard Deviation (SD). Using NMP as the target insures that these deviations are contained within Pmax.

In order to insure the survivability of a cast bullet, chamber pressures will be limited to the values specified in the chart below. The defined Pmax are based on the survivability of the alloy and it's treatment. The use of NMP as the "pressure target" insures the alloy/treatment survives all pressure deviations (SD & ES).

95% Wheel Weight/5% Tin Based Alloy

Casting treatment	Gas Check	Plain Base	FPS	Pmax	NMP
Air cooled		X	1700	25.0	21.9
Water Quenched		X	1900	30.0	26.3
Air cooled	X		2250	35.0	30.6
Water Quenched	X		2500	48.0	42.0

Colors correspond to the column colors on the new load data charts.

RD respects the SAAMI maximum pressure. Where SAAMI does not list a maximum, I use the CIP limit. In certain instances, I have adjusted the Pmax/NMP values for specific cartridges, these cartridges are listed below along with my comments for the basis of the adjustment.

Cartridge	SAAMI	CIP	RD Pmax	RD NMP	Notes:
300 Savage	47.0	52.9	48.0	42.0	Quite a difference between SAAMI/CIP. Use RD Standard from alloy chart.
30-06 Springfield	60.0		48.0	42.0	Cast bullets will not survive the SAAMI Pmax.
308 Win	60.0		48.0	42.0	Cast bullets will not survive the CIP Pmax.
32 ACP	20.5	23.2	18.8	16.6	732B, case life at unsupported chamber extremely short PSI reduced.
32 ACP	20.5	23.2	17.7	15.5	PT132, case life at unsupported chamber extremely short, PSI reduced
32-20 Win		30.5	38.2	33.4	For use in the modern Marlin 1894CL only!
35 Remington	33.5	39.9			Use CIP. For use in Marlin 336 rifles only!
356 Winchester		60.2	48.0	42.0	Cast bullets will not survive the CIP Pmax.
375 Winchester		63.8	48.0	42.0	Cast bullets will not survive the CIP Pmax.
38-55 Winchester		34.8	48.0	42.0	For use in Marlin 336CB or JES rebore/chambered Marlin 336 only!
45 Colt	14.0	16.0	40.1	35.1	For use in modern Marlin 1894 & Rossi 92 only!
45-70 Govt.	28.0	31.9	48.0	42.0	For use in current manufacture Marlin 1895 rifles (since 1972)!
45-70 Govt.	28.0	31.9	40.0	35.0	Rossi RG4570. 336 clone, not 1895