416 barrett + hornady 450gr bthp (41691) + RS80

WARNING: Since we have no control over equipment or data which may be used with this program, no responsibility is implied or assumed for results obtained through its use. Input data and results may be incorrect or wrong. Therefore the use of this data for loading ammunition can cause serious injury to personnell and material. The computer-results had to be checked against data available in current loading manuals.
LOT-TO-LOT VARIATIONS OF POWDERS, PRIMER SUBSTITUTION AND COMPONENT CHANGE OFTEN RAISE PRESSURES TO UNSAFE LEVELS. THE USER MUST ASSUME THE ENTIRE RISK OF USING THIS DATA FOR LOADING PURPOSES.
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User Data:

Date:26-abr-2018 **Time:15:54:29** **File: *.dat**

Comment	**miancave**				
Cartridge / Caliber	**.416 Barrett**		**Bullet**	**.416, 450, Hornady BTHP 416**	
Maximum Average Pressure, allowed	4000 bar	58015 psi. (Piezo Wildcat)		with boattail	
Groove Caliber	10,57 mm	0,416 in.	Bullet Weight	29,16 gm	450,0 gr.
Case Capacity, overflow	14,804 cm³	228,0 gr. H2O	Bullet Length	47,45 mm	1,868 in.
Case Length	82,8 mm	3,260 in.	Bullet Seating Depth	14,3 mm	0,563 in.
Cartridge O.A. Length	115,95 mm	4,565 in.	Barrel/Tube Length	812,8 mm	32,0 in.
Shot Start / Init Pressure	250,0 bar	3626 psi.	Cross Section Area of Bore	0,8638 cm²	0,13389 in.²
Propellant type	**ReloadSwiss RS 80**				
Charge Weight	12,247 gm	189,0 gr.	Load Density	0,896 gm/cm³	226,6 gr./in.³
Heat of Explosion, Potential	3840 J/gm	248,8 J/gr.	Energy Density of Charge	3439 J/cm³	56355 J/in.³
Propellant Solid Density	1,6 gm/cm³	404,63 gr./in.³	Used Ratio of Specific Heats cp/cv	1,2317	
Burning Rate Factor Ba	0,262 1/s		Weighting Factor	0,55	
Burning Function Limit Z1	0,55		Prog.-/ Degressivity Factor a0	3,285	
Factor b	2,497		Bulk Density	0,998 gm/cm³	252,4 gr./in.³

Calculated and Estimated Data:

Bullet Shank Seating Depth	6,68 mm	0,263 in.	Capacity Displaced by Seated Bullet	1,13 cm³	0,069 in.³
Useable Case Capacity	13,674 cm³	0,8344 in.³	Bullet Travel at Muzzle Exit	744,3 mm	29,3 in.
Loading Ratio("Density") / Filling	89.7 %		Charge Fraction Burnt at Shot Start	1,38 %	
Predicted Data:					
Maximum Chamber Pressure	3976 bar	57665 psi.	Bullet Travel at Pmax	110,1 mm	4,33 in.
at Muzzle Exit:					
Bullet Velocity	904,7 m/s	2968 fps.	Pressure at Muzzle	866 bar	12556 psi.
Bullet Energy	11935 Joule	8803 ft.lbs.	Bullet Barrel Time	1,667 ms	
Propellant Burnt	100,0 %		Ballistic Efficiency	25,4 %	

WARNING: Near Maximum Average Pressure - unknown tolerances may cause dangerous pressures !
Real maximum (peak) of pressure is reached while bullet moves within barrel.
End of combustion reached before bullet's base passes muzzle.