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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 personnel 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:8-Apr-2015	Time:23:16:26	File: xpert 270 wsm 105gr.dat	
Cartridge / Caliber	.270 WSM	Bullet	.277, 105 gr, XPERT	
Maximum Average Pressure, allowed	64542 psi.	4450 bar (Piezo CIP)	with flatbase	
Groove Caliber	0.277 in.	7.04 mm	Bullet Weight	105.0 gr. 6.8 gm
Case Capacity, overflow	79.5 gr. H2O	5.162 cm ³	Bullet Length	1.189 in. 30.2 mm
Case Length	2.090 in.	53.09 mm	Bullet Seating Depth	0.523 in. 13.29 mm
Cartridge O.A. Length	2.756 in.	70.0 mm	Barrel/Tube Length	24.0 in. 609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.0596 in. ² 0.3845 cm ²
Propellant type	Somchem S365			
Charge Weight	62.0 gr.	4.018 gm	Load Density	218.8 gr./in. ³ 0.865 gm/cm ³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	52242 J/in. ³ 3188 J/cm ³
Propellant Solid Density	404.63 gr./in. ³	1.6 gm/cm ³	Used Ratio of Specific Heats cp/cv	1.239
Burning Rate Factor Ba	0.44 1/s		Weighting Factor	0.5
Burning Function Limit Z1	0.605		Prog.-/ Degressivity Factor a0	1.715
Factor b	2.271		Bulk Density	231.4 gr./in. ³ 0.915 gm/cm ³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.523 in.	13.29 mm	Capacity Displaced by Seated Bullet	0.0316 in. ³	0.518 cm ³
Useable Case Capacity	0.2834 in. ³	4.644 cm ³	Bullet Travel at Muzzle Exit	22.43 in.	569.8 mm
Loading Ratio("Density") / Filling	94.6 %		Charge Fraction Burnt at Shot Start	1.51 %	

Predicted Data:

Maximum Chamber Pressure	49392 psi.	3405 bar	Bullet Travel at Pmax	3.55 in.	90.2 mm
at Muzzle Exit:					
Bullet Velocity	3333 fps.	1015.8 m/s	Pressure at Muzzle	11418 psi.	787 bar
Bullet Energy	2590 ft.lbs.	3511 Joule	Bullet Barrel Time	1.147 ms	
Propellant Burnt	100.0 %		Ballistic Efficiency	23.7 %	

Check Loading Manuals for Safe Minimum Charge Weight to Avoid Hazardous Ignition Conditions like Secondary Explosion Effects !
 Real maximum (peak) of pressure is reached while bullet moves within barrel.
 End of combustion reached before bullet's base passes muzzle.

