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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:22:36:21	File: xpert 25-284 win 80gr.dat	
Cartridge / Caliber	.25-284 Win	Bullet	.257, 80, XPERT	
Maximum Average Pressure, allowed	63817 psi.	4400 bar (Wildcat)	with flatbase	
Groove Caliber	0.257 in.	6.53 mm	Bullet Weight	80.0 gr. 5.18 gm
Case Capacity, overflow	63.99 gr. H2O	4.155 cm ³	Bullet Length	1.063 in. 27.0 mm
Case Length	2.170 in.	55.12 mm	Bullet Seating Depth	0.477 in. 12.12 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	0.05118 in. ² 0.3302 cm ²
Propellant type	Somchem S365			
Charge Weight	53.0 gr.	3.434 gm	Load Density	231.6 gr./in. ³ 0.916 gm/cm ³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	55306 J/in. ³ 3375 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	0.477 in.	12.12 mm	Capacity Displaced by Seated Bullet	0.0248 in. ³	0.406 cm ³
Useable Case Capacity	0.2288 in. ³	3.749 cm ³	Bullet Travel at Muzzle Exit	22.31 in.	566.6 mm
Loading Ratio("Density") / Filling	100.1 % = compressed		Charge Fraction Burnt at Shot Start	1.32 %	

Predicted Data:

Maximum Chamber Pressure	49426 psi.	3408 bar	Bullet Travel at Pmax	3.03 in.	76.9 mm
at Muzzle Exit:					
Bullet Velocity	3484 fps.	1061.8 m/s	Pressure at Muzzle	11198 psi.	772 bar
Bullet Energy	2156 ft.lbs.	2923 Joule	Bullet Barrel Time	1.077 ms	
Propellant Burnt	99.7 %		Ballistic Efficiency	23.1 %	

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 occurs after the bullet's base passes muzzle.

