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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:9-Apr-2015	Time:17:11:49	File: xpert 7mm rem mag 108gr.dat	
Cartridge / Caliber	7 mm Rem. Mag.	Bullet	.284, 108, XPERT TARGET M	
Maximum Average Pressure, allowed	62366 psi.	4300 bar (Piezo CIP)	with flatbase	
Groove Caliber	0.284 in.	7.21 mm	Bullet Weight	108.0 gr. 7.0 gm
Case Capacity, overflow	82.0 gr. H2O	5.324 cm ³	Bullet Length	1.189 in. 30.2 mm
Case Length	2.500 in.	63.5 mm	Bullet Seating Depth	0.500 in. 12.7 mm
Cartridge O.A. Length	3.189 in.	81.0 mm	Barrel/Tube Length	24.0 in. 609.6 mm
Shot Start / Init Pressure	3336 psi.	230.01 bar	Cross Section Area of Bore	0.06261 in. ² 0.4039 cm ²
Propellant type	Somchem S365			
Charge Weight	64.0 gr.	4.147 gm	Load Density	218.2 gr./in. ³ 0.863 gm/cm ³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	52127 J/in. ³ 3181 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	0.5 in.	12.7 mm	Capacity Displaced by Seated Bullet	0.0317 in. ³	0.52 cm ³
Useable Case Capacity	0.2932 in. ³	4.804 cm ³	Bullet Travel at Muzzle Exit	22.0 in.	558.8 mm
Loading Ratio("Density") / Filling	94.3 %		Charge Fraction Burnt at Shot Start	1.39 %	

Predicted Data:

Maximum Chamber Pressure	46563 psi.	3210 bar	Bullet Travel at Pmax	3.56 in.	90.5 mm
at Muzzle Exit:					
Bullet Velocity	3290 fps.	1002.7 m/s	Pressure at Muzzle	11553 psi.	797 bar
Bullet Energy	2595 ft.lbs.	3518 Joule	Bullet Barrel Time	1.152 ms	
Propellant Burnt	99.9 %		Ballistic Efficiency	23.0 %	

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.

