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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:17:15:59	File: xpert 7mm weath mag 108gr.dat	
Cartridge / Caliber	7 mm Weath. Mag.	Bullet	.284, 108, XPERT TARGET M	
Maximum Average Pressure, allowed	63817 psi.	4400 bar (Piezo CIP)	with flatbase	
Groove Caliber	0.284 in.	7.21 mm	Bullet Weight	108.0 gr. 7.0 gm
Case Capacity, overflow	87.0 gr. H2O	5.649 cm ³	Bullet Length	1.189 in. 30.2 mm
Case Length	2.549 in.	64.74 mm	Bullet Seating Depth	0.509 in. 12.94 mm
Cartridge O.A. Length	3.228 in.	82.0 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	67.0 gr.	4.342 gm	Load Density	214.5 gr./in. ³ 0.848 gm/cm ³
Heat of Explosion, Potential	238.8 J/gr.	3685 J/gm	Energy Density of Charge	51226 J/in. ³ 3126 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	0.509 in.	12.94 mm	Capacity Displaced by Seated Bullet	0.0323 in. ³ 0.53 cm ³
Useable Case Capacity	0.3124 in. ³	5.119 cm ³	Bullet Travel at Muzzle Exit	21.96 in. 557.8 mm
Loading Ratio("Density") / Filling	92.7 %		Charge Fraction Burnt at Shot Start	1.45 %

Predicted Data:

Maximum Chamber Pressure	48093 psi.	3316 bar	Bullet Travel at Pmax	3.73 in. 94.7 mm
at Muzzle Exit:				
Bullet Velocity	3332 fps.	1015.7 m/s	Pressure at Muzzle	11956 psi. 824 bar
Bullet Energy	2663 ft.lbs.	3610 Joule	Bullet Barrel Time	1.147 ms
Propellant Burnt	99.9 %		Ballistic Efficiency	22.6 %

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.

