User Data:

Date:9-Apr-2015 **Time:19:44:24** **File: xpert 9.3 x 62 200gr.dat**

Cartridge / Caliber	**9.3 x 62**		**Bullet**	**.366, 200GR XPERT TARGET**	
Maximum Average Pressure, allowed	56565 psi.	3900 bar (Piezo CIP)		with boattail	
Groove Caliber	0.366 in.	9.3 mm	Bullet Weight	200.0 gr.	12.96 gm
Case Capacity, overflow	77.99 gr. H2O	5.064 cm³	Bullet Length	1.303 in.	33.1 mm
Case Length	2.440 in.	61.98 mm	Bullet Seating Depth	0.594 in.	15.08 mm
Cartridge O.A. Length	3.150 in.	80.0 mm	Barrel/Tube Length	23.622 in.	600.0 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.1028 in.²	0.6632 cm²
Propellant type	**Somchem S355**				
Charge Weight	58.0 gr.	3.758 gm	Load Density	233.4 gr./in.³	0.923 gm/cm³
Heat of Explosion, Potential	253.4 J/gr.	3910 J/gm	Energy Density of Charge	59125 J/in.³	3608 J/cm³
Propellant Solid Density	404.63 gr./in.³	1.6 gm/cm³	Used Ratio of Specific Heats cp/cv	1.2291	
Burning Rate Factor Ba	0.5 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.39		Prog.-/ Degressivity Factor a0	2.36	
Factor b	1.774		Bulk Density	227.6 gr./in.³	0.900 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.417 in.	10.58 mm	Capacity Displaced by Seated Bullet	0.0605 in.³	0.992 cm³
Useable Case Capacity	0.2485 in.³	4.072 cm³	Bullet Travel at Muzzle Exit	21.78 in.	553.1 mm
Loading Ratio("Density") / Filling	102.5 % = compressed		Charge Fraction Burnt at Shot Start	1.28 %	
Predicted Data:					
Maximum Chamber Pressure	41328 psi.	2849 bar	Bullet Travel at Pmax	1.47 in.	37.4 mm
at Muzzle Exit:					
Bullet Velocity	2607 fps.	794.6 m/s	Pressure at Muzzle	6838 psi.	471 bar
Bullet Energy	3018 ft.lbs.	4092 Joule	Bullet Barrel Time	1.234 ms	
Propellant Burnt	93.4 %		Ballistic Efficiency	27.8 %	

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.