User Data:

Date:9-Apr-2015 **Time:19:43:42** **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 S335**				
Charge Weight	54.0 gr.	3.499 gm	Load Density	217.2 gr./in.³	0.859 gm/cm³
Heat of Explosion, Potential	240.4 J/gr.	3710 J/gm	Energy Density of Charge	52242 J/in.³	3188 J/cm³
Propellant Solid Density	407.15 gr./in.³	1.61 gm/cm³	Used Ratio of Specific Heats cp/cv	1.224	
Burning Rate Factor Ba	0.624 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.35		Prog.-/ Degressivity Factor a0	2.299	
Factor b	1.666		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	95.5 %		Charge Fraction Burnt at Shot Start	1.63 %	
Predicted Data:					
Maximum Chamber Pressure	43604 psi.	3006 bar	Bullet Travel at Pmax	1.33 in.	33.8 mm
at Muzzle Exit:					
Bullet Velocity	2576 fps.	785.3 m/s	Pressure at Muzzle	6130 psi.	423 bar
Bullet Energy	2948 ft.lbs.	3996 Joule	Bullet Barrel Time	1.224 ms	
Propellant Burnt	98.5 %		Ballistic Efficiency	30.8 %	

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.