User Data:

Date:8-Apr-2015 **Time:22:45:49** **File: xpert 6.5 x 55mm swe 98gr.dat**

Cartridge / Caliber	**6.5 x 55 Swedish**		**Bullet**	**.264, 98, XPERT**	
Maximum Average Pressure, allowed	55114 psi.	3800 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.265 in.	6.73 mm	Bullet Weight	98.0 gr.	6.35 gm
Case Capacity, overflow	57.0 gr. H2O	3.701 cm³	Bullet Length	1.240 in.	31.5 mm
Case Length	2.165 in.	54.99 mm	Bullet Seating Depth	0.551 in.	13.99 mm
Cartridge O.A. Length	2.854 in.	72.5 mm	Barrel/Tube Length	24.0 in.	609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.05326 in.²	0.3436 cm²
Propellant type	**Somchem S335**				
Charge Weight	37.0 gr.	2.398 gm	Load Density	189.4 gr./in.³	0.749 gm/cm³
Heat of Explosion, Potential	240.4 J/gr.	3710 J/gm	Energy Density of Charge	45523 J/in.³	2778 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	0.551 in.	13.99 mm	Capacity Displaced by Seated Bullet	0.0304 in.³	0.499 cm³
Useable Case Capacity	0.1954 in.³	3.202 cm³	Bullet Travel at Muzzle Exit	22.39 in.	568.6 mm
Loading Ratio("Density") / Filling	83.2 %		Charge Fraction Burnt at Shot Start	2.15 %	
Predicted Data:					
Maximum Chamber Pressure	43215 psi.	2980 bar	Bullet Travel at Pmax	1.98 in.	50.3 mm
at Muzzle Exit:					
Bullet Velocity	2857 fps.	870.8 m/s	Pressure at Muzzle	7752 psi.	534 bar
Bullet Energy	1776 ft.lbs.	2408 Joule	Bullet Barrel Time	1.233 ms	
Propellant Burnt	99.9 %		Ballistic Efficiency	27.1 %	

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.