User Data:

Date:9-Apr-2015 **Time:17:49:38** **File: xpert 3006 spring 130gr.dat**

Cartridge / Caliber	**.30-06 Spring. (CIP)**		**Bullet**	**.308, 130GR XPERT TARGET**	
Maximum Average Pressure, allowed	58740 psi.	4050 bar (Piezo CIP)		with flatbase	
Groove Caliber	0.308 in.	7.82 mm	Bullet Weight	130.0 gr.	8.42 gm
Case Capacity, overflow	68.2 gr. H2O	4.428 cm³	Bullet Length	1.236 in.	31.4 mm
Case Length	2.494 in.	63.35 mm	Bullet Seating Depth	0.541 in.	13.75 mm
Cartridge O.A. Length	3.189 in.	81.0 mm	Barrel/Tube Length	24.0 in.	609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.07366 in.²	0.4752 cm²
Propellant type	**Somchem S321**				
Charge Weight	49.0 gr.	3.175 gm	Load Density	213.2 gr./in.³	0.843 gm/cm³
Heat of Explosion, Potential	259.8 J/gr.	4010 J/gm	Energy Density of Charge	55405 J/in.³	3381 J/cm³
Propellant Solid Density	409.68 gr./in.³	1.62 gm/cm³	Used Ratio of Specific Heats cp/cv	1.221	
Burning Rate Factor Ba	0.56 1/s		Weighting Factor	0.55	
Burning Function Limit Z1	0.39		Prog.-/ Degressivity Factor a0	1.649	
Factor b	1.641		Bulk Density	250.4 gr./in.³	0.990 gm/cm³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0.541 in.	13.75 mm	Capacity Displaced by Seated Bullet	0.0404 in.³	0.662 cm³
Useable Case Capacity	0.2298 in.³	3.766 cm³	Bullet Travel at Muzzle Exit	22.05 in.	560.0 mm
Loading Ratio("Density") / Filling	85.2 %		Charge Fraction Burnt at Shot Start	1.60 %	
Predicted Data:					
Maximum Chamber Pressure	43884 psi.	3026 bar	Bullet Travel at Pmax	1.81 in.	45.9 mm
at Muzzle Exit:					
Bullet Velocity	2885 fps.	879.4 m/s	Pressure at Muzzle	7892 psi.	544 bar
Bullet Energy	2403 ft.lbs.	3258 Joule	Bullet Barrel Time	1.180 ms	
Propellant Burnt	97.2 %		Ballistic Efficiency	25.6 %	

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.