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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 personnell 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:22-Oct-2010	Time:22:07:52	File: comm 17 rem 22gr cfn .dat	
Cartridge / Caliber	.17 Rem.	Bullet	.172, 22gr Impala CFN Bullet	
Maximum Average Pressure, allowed	4250 bar	61641 psi. (Piezo CIP)	with flatbase	
Groove Caliber	4.37 mm	0.172 in.	Bullet Weight	1.43 gm 22.0 gr.
Case Capacity, overflow	1.721 cm ³	26.51 gr. H2O	Bullet Length	15.1 mm 0.594 in.
Case Length	45.62 mm	1.796 in.	Bullet Seating Depth	7.5 mm 0.295 in.
Cartridge O.A. Length	53.21 mm	2.095 in.	Barrel/Tube Length	619.99 mm 24.4091 in.
Shot Start / Init Pressure	350.0 bar	5076 psi.	Cross Section Area of Bore	0.148 cm ² 0.02294 in. ²
Propellant type	Somchem S335			
Charge Weight	1.361 gm	21.0 gr.	Load Density	0.846 gm/cm ³ 213.9 gr./in. ³
Heat of Explosion, Potential	3710 J/gm	240.4 J/gr.	Energy Density of Charge	3140 J/cm ³ 51455 J/in. ³
Propellant Solid Density	1.61 gm/cm ³	407.15 gr./in. ³	Used Ratio of Specific Heats cp/cv	1.224
Burning Rate Factor Ba	0.624 1/s		Weighting Factor	0.45
Burning Function Limit Z1	0.35		Prog.-/ Degressivity Factor a0	2.299
Factor b	1.666		Bulk Density	0.900 gm/cm ³ 227.6 gr./in. ³

Calculated and Estimated Data:

Bullet Shank Seating Depth	7.5 mm	0.295 in.	Capacity Displaced by Seated Bullet	0.113 cm ³	0.0069 in. ³
Useable Case Capacity	1.608 cm ³	0.0981 in. ³	Bullet Travel at Muzzle Exit	581.87 mm	22.91 in.
Loading Ratio("Density") / Filling	94.0 %		Charge Fraction Burnt at Shot Start	2.36 %	

Predicted Data:

Maximum Chamber Pressure	3280 bar	47570 psi.	Bullet Travel at Pmax	54.5 mm	2.14 in.
at Muzzle Exit:					
Bullet Velocity	1205.4 m/s	3955 fps.	Pressure at Muzzle	576 bar	8350 psi.
Bullet Energy	1036 Joule	764 ft.lbs.	Bullet Barrel Time	0.931 ms	
Propellant Burnt	97.5 %		Ballistic Efficiency	20.5 %	

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.

