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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 personell 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:19-mai-2023	Time:22:55:46	File: *.dat
Cartridge / Caliber	.577 Sld. Snider	Bullet	.58, 400, LYM LFN MINIE 575
Maximum Average Pressure, allowed	21756 psi. 1500 bar (Piezo CIP)	with flatbase	
Groove Caliber	0,574 in. 14,58 mm	Bullet Weight	400,0 gr. 25,92 gm
Case Capacity, overflow	114,0 gr. H2O 7,402 cm ³	Bullet Length	0,930 in. 23,62 mm
Case Length	2,000 in. 50,8 mm	Bullet Seating Depth	0,460 in. 11,68 mm
Cartridge O.A. Length	2,470 in. 62,74 mm	Barrel/Tube Length	26,0 in. 660,4 mm
Shot Start / Init Pressure	1160 psi. 80,0 bar	Cross Section Area of Bore	0,25933 in. ² 1,6731 cm ²
Propellant type	Vihtavuori N32C Tin Star		
Charge Weight	19,0 gr. 1,231 gm	Load Density	57,2 gr./in. ³ 0,226 gm/cm ³
Heat of Explosion, Potential	197,0 J/gr. 3040 J/gm	Energy Density of Charge	11258 J/in. ³ 0687 J/cm ³
Propellant Solid Density	376,81 gr./in. ³ 1,49 gm/cm ³	Used Ratio of Specific Heats cp/cv	1,2354
Burning Rate Factor Ba	3,463 1/s	Weighting Factor	0,7
Burning Function Limit Z1	0,513	Prog.-/ Degressivity Factor a0	2,894
Factor b	2,259	Bulk Density	116,1 gr./in. ³ 0,459 gm/cm ³

Calculated and Estimated Data:

Bullet Shank Seating Depth	0,46 in. 11,68 mm	Capacity Displaced by Seated Bullet	0,1192 in. ³ 1,954 cm ³
Useable Case Capacity	0,3325 in. ³ 5,448 cm ³	Bullet Travel at Muzzle Exit	24,46 in. 621,28 mm
Loading Ratio("Density") / Filling	49.2 %	Charge Fraction Burnt at Shot Start	4,20 %

Predicted Data:

Maximum Chamber Pressure	14544 psi. 1003 bar	Bullet Travel at Pmax	0,62 in. 15,7 mm
at Muzzle Exit:			
Bullet Velocity	1220 fps. 372,0 m/s	Pressure at Muzzle	575 psi. 40 bar
Bullet Energy	1323 ft.lbs. 1793 Joule	Bullet Barrel Time	2,345 ms
Propellant Burnt	100,0 %	Ballistic Efficiency	47,9 %

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 reached before bullet's base passes muzzle.

