



## **LAND AND GROOVE TABULATION**

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The width of the land-and-groove impressions on all evidence and test bullets is routinely measured in this laboratory. A calibrated measuring eyepiece is usually employed and the measurement performed immediately after examination while the bullets are still mounted on the comparison microscope.

In order to provide a quick check on the two measurements taken (namely bullet groove width and land width) and also for purposes of determining the number of lands or grooves or the caliber, a tabulation has been made of the approximate sum of the bullet land width plus groove width (see Table II). This table was computed based on the assumption that:

$$N(g + l) = p d$$

where **N** = the number of lands or grooves

**l** = land width

**g** = groove width

**p** = 3.1415

**d** = the bore diameter

The value for **d** was determined as the average of several reported bore diameters\*. The number of values averaged with the standard deviation of the average are listed in Table I.

TABLE I  
 AVERAGE BORE DIAMETERS

Caliber	Number Averaged	Average Bore Diameter (inches)	Standard Deviation	Average Bore Diameter (mm)
.22	100	0.21536	0.00307	5.470
.25	27	0.24545	0.00254	6.234
6.35 mm	100	0.24511	0.00227	6.226
.30	58	0.30049	0.00247	7.632
.32	100	0.30489	0.00723	7.744
9 mm	100	0.34871	0.00206	8.857
.38	200	0.35286	0.00797	8.963
.41	21	0.39000	0.00864	9.906
.44	38	0.42147	0.00648	10.705
.45	100	0.44415	0.00203	11.281

Table II can serve as a check on measured land and groove widths as well as for the determination of the number of lands and grooves when the caliber is known or vice versa. Like the similar tabulation in Appendix IV of Mathews\*, Table II is simply a guide which has proven useful in this laboratory.

TABLE II  
 APPROXIMATE SUM OF LAND & GROOVE

CALIBER	Number of Lands or Grooves														
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
.22	.338	.226	.169	.135	.113	.097	.085	.075	.068	.062	.056	.052	.048	.045	.042
.25** (6.35 mm)	.385	.257	.193	.154	.128	.110	.096	.086	.077	.070	.064	.059	.055	.051	.048
.30	.472	.315	.236	.189	.157	.135	.118	.105	.094	.086	.079	.073	.067	.063	.059
.32	.479	.319	.239	.192	.160	.137	.120	.106	.096	.087	.080	.074	.068	.064	.060
.38** (9 mm)	.551	.367	.276	.220	.184	.157	.138	.122	.110	.100	.092	.085	.079	.073	.069
.41	.613	.408	.306	.245	.204	.175	.153	.136	.123	.111	.102	.094	.088	.082	.077
.44	.662	.441	.331	.265	.221	.189	.166	.147	.132	.120	.110	.102	.095	.088	.083
.45	.698	.465	.349	.279	.233	.199	.174	.155	.140	.127	.116	.107	.100	.093	.087

\*\*mean of average bore diameters used for computation

\*J. Howard Mathews, Firearms Identification Volumes I S III, Charles C. Thomas, Publisher.

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