

TEST AND MEASUREMENT LAB TEST RESULTS

REQUESTER: F.E. MARTIN TESTER: J. SELAN DATE: 3/27/89
 REPORT NO.: 890411 WORK ORDER NO.: 481009
 WRITTEN BY: J. SELAN
 TEST TYPE: DEVELOPMENTAL

FIREARM STAT'S : MODEL: M-700 ALTERED CAL or GAUGE: 300W.M.-.308-24
 BARREL TYPE: SNIPER/SPORTER PROOFED: YES ☒ NO ☐

REASON FOR TEST :

ACCURACY IN THE M-700 ALTERED VERSION IN .243 SPORTER,
 .308 & .300 WIN. MAG. SNIPER. AND TO CHECK FOR P.O.I. SHIFT.

EQUIPMENT REQUIRED :

100 & 200 YD. RANGE.
 2 ALTERED RIFLES. (.243 WIN. SER. # C6229202) 300-300 WIN. MAG SER. # C62472.
 REM. AMMO: .300 W. MAG. 180 GR. RSP. "CORE-LOKT" R-300W2 LOT # 5170C6823
 .308 WIN. MATCH-168 GR. BT.N.P. R-308W7 LOT # 1
 .243 WIN. 80 GR. "POWER-LOKT" H.P. R-243W2 K10MD2622
 2X LYMAN ALL AMERICAN SCOPE. / MISC. CLEANING EQUIPMENT.
 DIGITIZING TABLET. H.P. 9000 COMPUTER. CAL COMP. 9000

TEST PROCEDURE :

- PROOF ALL VERSIONS.
- SHOOT 5-5 SHOT GROUPS, 100 YDS. - REMOVE BBL AND REPLACE SHOOT FOR P.O.I. SH.
- SHOOT .308 & .300 W. MAG. AT 200 YDS. (5-5 SHOT GROUPS) - AGAIN REMOVE BBL ON BOTH VERSIONS AND SHOOT LAST GROUP FOR P.O.I. - SHIFT.
- SHOOT ALL VERSIONS FROM SHOULDER.

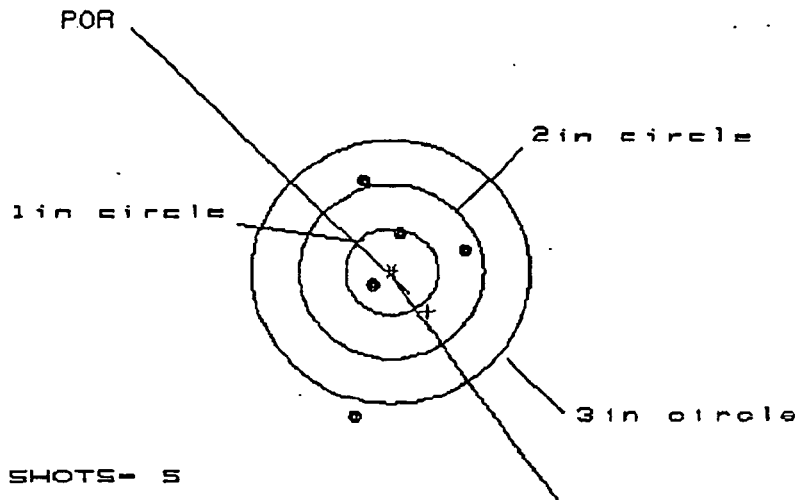
TEST RESULTS :

- ORIGINAL BOLTS. ON .243 AND .308 WIN. - BOLT SHROUDS BLEW AT PROOF. REPLACED AND REPROOFED - OK.
- .243 BBL. REMOVED VERY HARD AFTER SHOOTING - FOUR GROUPS.
- AFTER BBLs. REMOVED - ALL VERSIONS. SHOWED AN IMPACT SHIFT AND HORIZONTAL SPREAD.
- TARGETS INCLUDED - ON FOLLOWING SHEETS.

27 Mar 1989

FILE:/PATTERNING/CENTERFIRE_PATT/898411.1.1

CENTERFIRE PATTERNS # 1



OF SHOTS- 5

IN CIR

1in = 2

2in = 3

3in = 4

HS= 1.177

VS= 2.720

GS= 2.723

AVG GS= 3.18

AVG M.R= 1.249

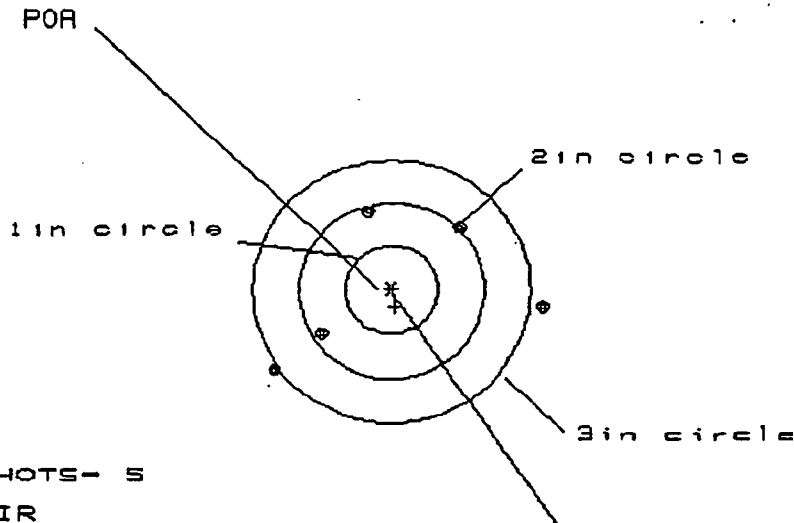
CENTROID *

PATTERN #	:	1			300 WIN. MAG. VARIANT
SHOTS (BEST OF)	:	5	4	3	<u>Ammo:</u>
MAXIMUM X	:	.788	.691	.568	180 GR. PSP "CORE-LOKT"
MINIMUM X	:	-.389	-.369	-.412	R-300W2
MAXIMUM Y	:	1.090	.683	.269	LOT- EMOC 6823
MINIMUM Y	:	-1.630	-.567	-.339	
CENTROID X	:	-.400	-.303	-.180	
CENTROID Y	:	.454	.861	.633	<u>SCOPE:</u>
POA TO CENTROID in.	:	.605	.913	.658	LYMAN ALL AMERICAN
MIN RADIUS	:	.250	.052	.310	20X
MEAN RADIUS	:	.866	.543	.472	
MAX RADIUS	:	1.675	.776	.572	
HORIZONTAL SPREAD	:	1.177	1.060	.980	BENCH REST 200 YDS.
VERTICAL SPREAD	:	2.720	1.250	.608	
EXTREME SPREAD	:	2.723	1.352	1.062	
NUMBER IN ONE INCH CIRCLE	=		2		
NUMBER IN TWO INCH CIRCLE	=		3		
NUMBER IN THREE INCH CIRCLE	=		4		

27 Mar 1989

FILE:/PATTERNING/CENTERFIRE_PATT/890411.J.1

CENTERFIRE PATTERNS # 2



OF SHOTS- 5

IN CIR

1in = 0

2in = 3

3in = 3

HS= 2.928

VS= 1.793

GS= 3.002

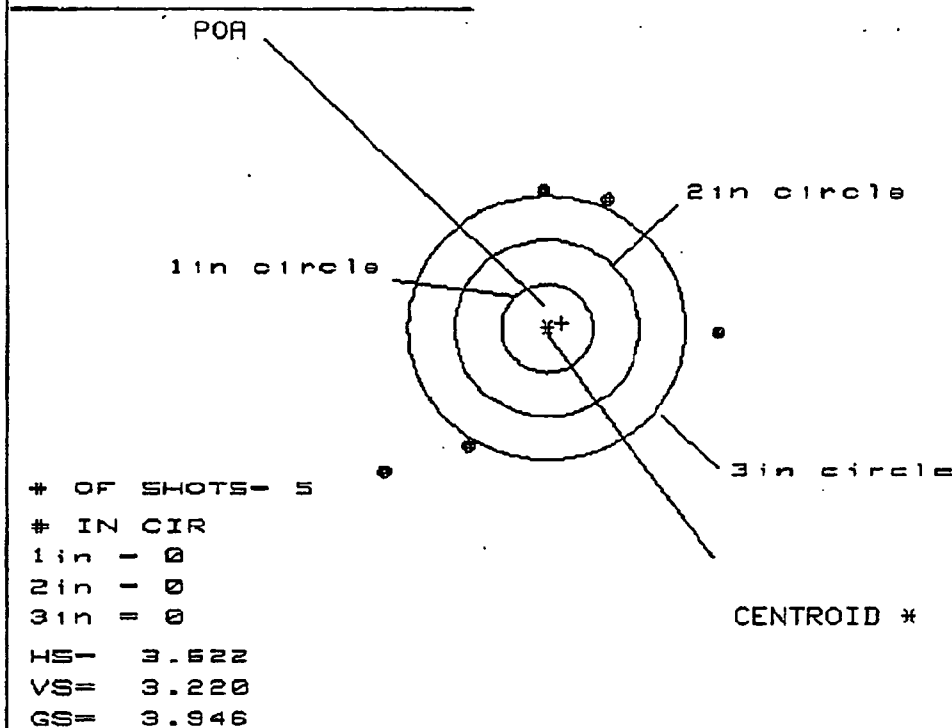
CENTROID *

PATTERN #	:	2		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	1.635	1.126	.831
MINIMUM X	:	-1.293	-.885	-.679
MAXIMUM Y	:	.916	.863	.553
MINIMUM Y	:	-.877	-.930	-.850
CENTROID X	:	-.042	-.450	-.155
CENTROID Y	:	.193	.246	.556
POA TO CENTROID in.	:	.197	.513	.577
MIN RADIUS	:	.930	.662	.574
MEAN RADIUS	:	1.214	1.025	.848
MAX RADIUS	:	1.648	1.283	1.087
HORIZONTAL SPREAD	:	2.928	2.011	1.510
VERTICAL SPREAD	:	1.793	1.793	1.403
EXTREME SPREAD	:	3.002	2.530	1.896
NUMBER IN ONE INCH CIRCLE	=		0	
NUMBER IN TWO INCH CIRCLE	=		3	
NUMBER IN THREE INCH CIRCLE	=		3	

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FILE:/PATTERNING/CENTERFIRE_PATT/890411.1.1

CENTERFIRE PATTERNS # 3

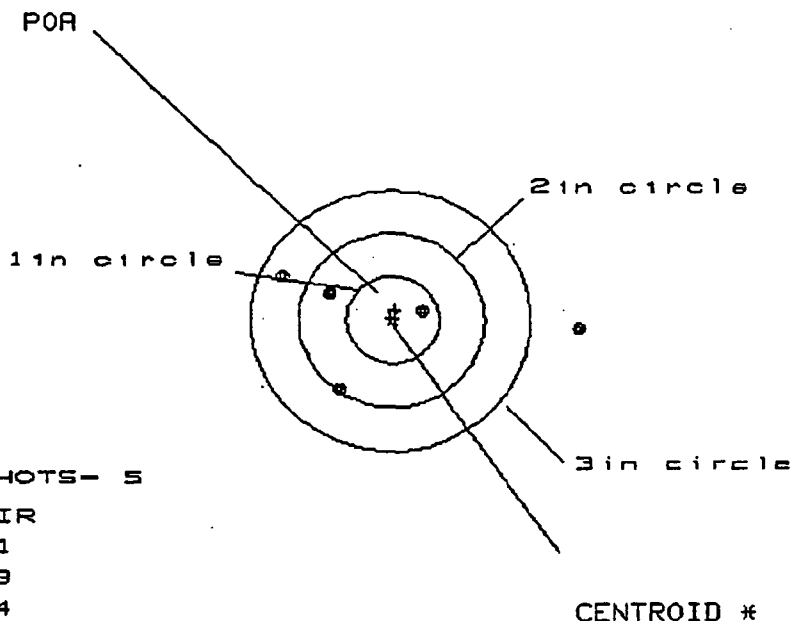


PATTERN #	:	3		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	1.902	1.472	.762
MINIMUM X	:	-1.720	-1.284	-.794
MAXIMUM Y	:	1.599	1.194	1.041
MINIMUM Y	:	-1.621	-1.759	-1.912
CENTROID X	:	-.154	.276	-.215
CENTROID Y	:	-.061	.344	.497
POA TO CENTROID in.	:	.166	.441	.542
MIN RADIUS	:	1.593	1.060	1.041
MEAN RADIUS	:	1.812	1.515	1.423
MAX RADIUS	:	2.363	2.178	2.070
HORIZONTAL SPREAD	:	3.622	2.757	1.556
VERTICAL SPREAD	:	3.220	2.953	2.953
EXTREME SPREAD	:	3.946	3.189	3.189
NUMBER IN ONE INCH CIRCLE	=	0	0	0
NUMBER IN TWO INCH CIRCLE	=	0	0	0
NUMBER IN THREE INCH CIRCLE	=	0	0	0

27 Mar 1985

FILE:/PATTERNING/CENTERFIRE_PATT/BS0411.1.1

CENTERFIRE PATTERNS # 4



OF SHOTS- 5

IN CIR

1in = 1

2in = 3

3in = 4

HS= 3.168

VS= 1.299

GS= 3.227

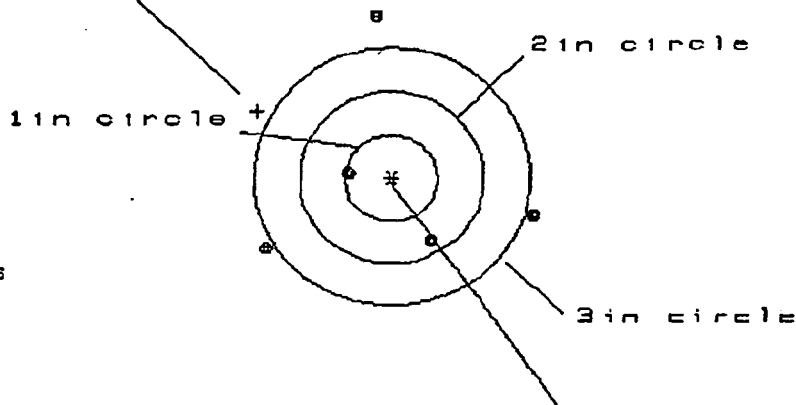
PATTERN #	:	4		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	2.016	.822	.606
MINIMUM X	:	-1.152	-.648	-.344
MAXIMUM Y	:	.486	.454	.442
MINIMUM Y	:	-.813	-.845	-.694
CENTROID X	:	-.027	-.531	-.315
CENTROID Y	:	-.109	-.077	-.228
POA TO CENTROID in.	:	.112	.536	.389
MIN RADIUS	:	.344	.318	.561
MEAN RADIUS	:	1.061	.696	.653
MAX RADIUS	:	2.020	.846	.741
HORIZONTAL SPREAD	:	3.168	1.470	.950
VERTICAL SPREAD	:	1.299	1.299	1.136
EXTREME SPREAD	:	3.227	1.512	1.282
NUMBER IN ONE INCH CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		3	
NUMBER IN THREE INCH CIRCLE	=		4	

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FILE:/PATTERNING/CENTERFIRE_PATT/890411.1.1

CENTERFIRE PATTERNS # 5

POA



OF SHOTS- 5

IN CIR

1in = 1

2in = 2

3in = 2

HS= 2.917

VS= 2.768

GS= 3.006

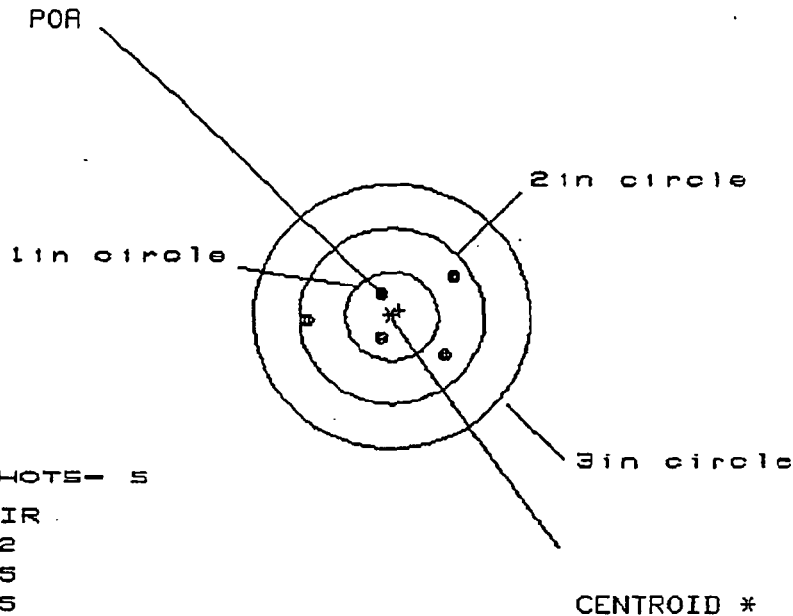
CENTROID *

PATTERN #	:	5		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	1.560	1.514	.926
MINIMUM X	:	-1.357	-1.403	-.898
MAXIMUM Y	:	1.898	.569	.585
MINIMUM Y	:	-.870	-.395	-.379
CENTROID X	:	1.468	1.514	1.009
CENTROID Y	:	-.771	-1.246	-1.262
POA TO CENTROID in.	:	1.658	1.960	1.616
MIN RADIUS	:	.496	.477	.586
MEAN RADIUS	:	1.294	1.057	.836
MAX RADIUS	:	1.907	1.515	.975
HORIZONTAL SPREAD	:	2.917	2.917	1.824
VERTICAL SPREAD	:	2.768	.964	.964
EXTREME SPREAD	:	3.006	2.951	1.832
NUMBER IN ONE INCH CIRCLE =			1	
NUMBER IN TWO INCH CIRCLE =			2	
NUMBER IN THREE INCH CIRCLE =			2	

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FILE:/PATTERNING/CENTERFIRE_PATT/890411.1

CENTERFIRE PATTERNS # 1



OF SHOTS- 5

IN CIR

1 in - 2

2 in - 5

3 in = 5

HS- 1.684

VS= .872

GS= 1.739

AVG. G.S. = 1.96

AVG. M.R. = .6794

PATTERN #

1

1

.368 WIN. SNIPER VARIANT.

SHOTS (BEST OF)

5

4

3

Ammo:

MAXIMUM X

.721

.481

.458

MATCH- 1686R. BT. H.P.

MINIMUM X

-.963

-.406

-.246

R 308W?

MAXIMUM Y

.429

.427

.358

LOT- "L"

MINIMUM Y

-.443

-.445

-.302

CENTROID X

-.076

.164

.004

CENTROID Y

-.066

-.065

-.207

SCOPE.

POR TO CENTROID in.

.101

.176

.207

LYMAN- ALL AMERICAN

MIN RADIUS

.237

.422

.219

20X.

MEAN RADIUS

.602

.515

.401

BENCH REST- 200 YDS.

MAX RADIUS

.963

.643

.549

HORIZONTAL SPREAD

1.684

.887

.704

VERTICAL SPREAD

.872

.872

.660

EXTREME SPREAD

1.739

1.058

.965

NUMBER IN ONE INCH CIRCLE =

2

NUMBER IN TWO INCH CIRCLE =

5

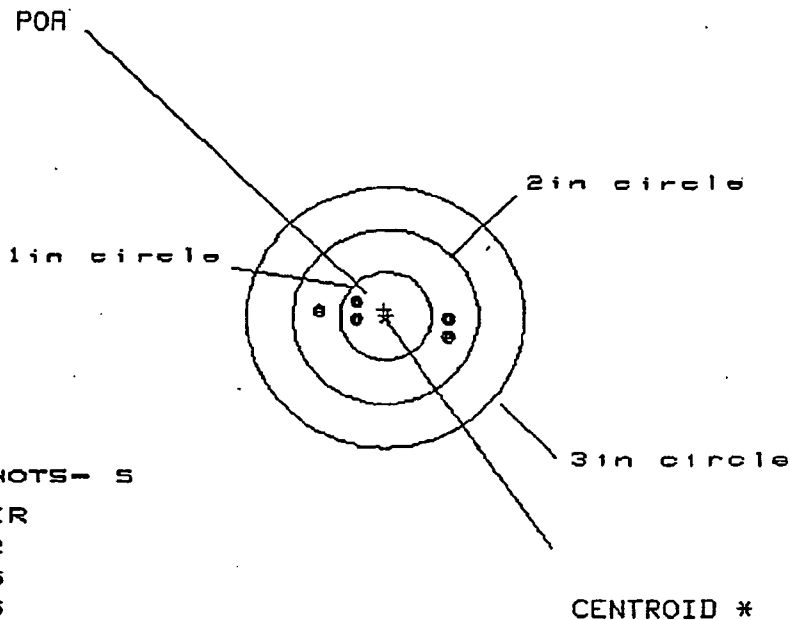
NUMBER IN THREE INCH CIRCLE =

5

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FILE:/PATTERNING/CENTERFIRE_PATT/89B411.1

CENTERFIRE PATTERNS # 2



OF SHOTS- 5

IN CIR

1in = 2

2in = 5

3in = 5

HS= 1.397

VS= .370

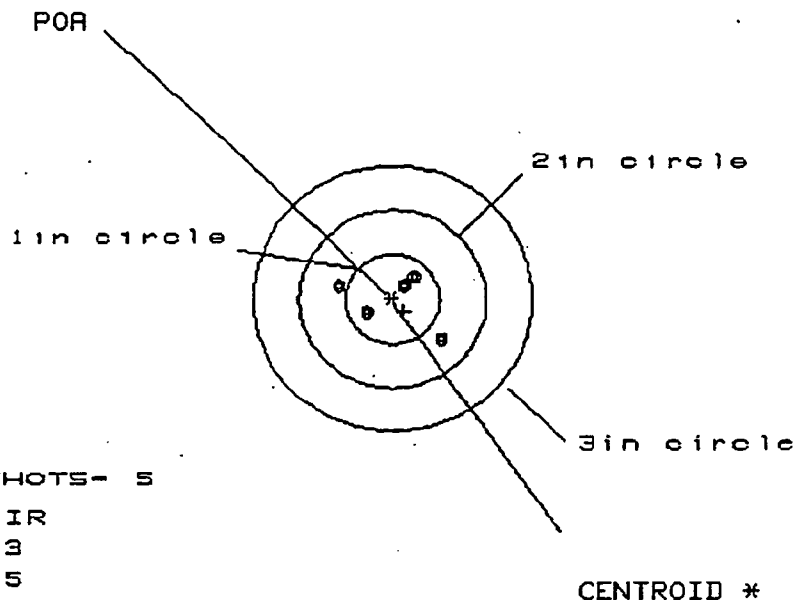
GS= 1.403

PATTERN #	:	2		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.701	.527	.665
MINIMUM X	:	-.696	-.540	-.365
MAXIMUM Y	:	.147	.171	.168
MINIMUM Y	:	-.223	-.199	-.202
CENTROID X	:	.020	.194	.018
CENTROID Y	:	-.071	-.095	-.092
POA TO CENTROID in.	:	.073	.216	.094
MIN RADIUS	:	.336	.506	.345
MEAN RADIUS	:	.562	.526	.469
MAX RADIUS	:	.702	.542	.695
HORIZONTAL SPREAD	:	1.397	1.068	1.030
VERTICAL SPREAD	:	.370	.370	.370
EXTREME SPREAD	:	1.403	1.069	1.056
NUMBER IN ONE INCH CIRCLE	=		2	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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FILE:/PATTERNING/CENTERFIRE_PATT/B30411.1

CENTERFIRE PATTERNS # 3



OF SHOTS- 5

IN CIR

1in - 3

2in - 5

3in = 5

HS- 1.105

VS= .774

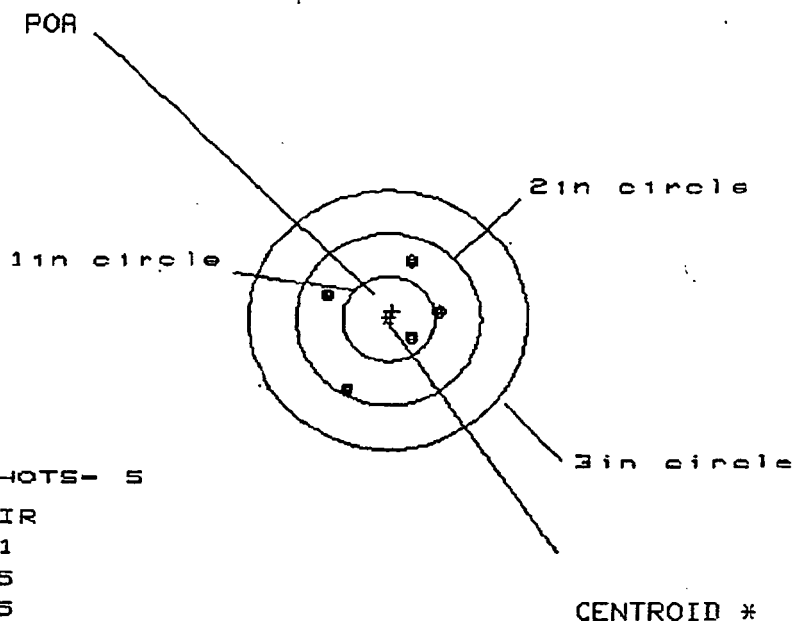
GS= 1.270

PATTERN #	:	3		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.565	.319	.186
MINIMUM X	:	-.548	-.398	-.289
MAXIMUM Y	:	.305	.188	.201
MINIMUM Y	:	-.469	-.275	-.262
CENTROID X	:	-.123	-.265	-.132
CENTROID Y	:	.141	.258	.245
POA TO CENTROID in.	:	.187	.370	.279
MIN RADIUS	:	.191	.241	.120
MEAN RADIUS	:	.435	.332	.261
MAX RADIUS	:	.735	.400	.390
HORIZONTAL SPREAD	:	1.105	.717	.475
VERTICAL SPREAD	:	.774	.463	.463
EXTREME SPREAD	:	1.270	.732	.663
NUMBER IN ONE INCH CIRCLE	=		3	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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FILE:/PATTERNING/CENTERFIRE_PATT/890411.1

CENTERFIRE PATTERNS # 4



OF SHOTS- 5

IN CIR

1in = 1

2in = 5

3in = 5

HS= 1.171

VS= 1.440

GS= 1.631

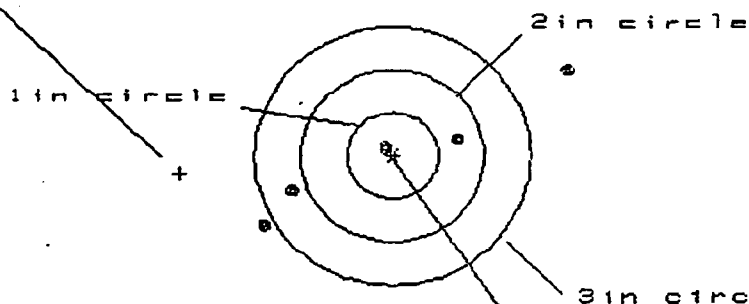
PATTERN #	:	4		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.555	.433	.486
MINIMUM X	:	-.616	-.738	-.685
MAXIMUM Y	:	.667	.473	.214
MINIMUM Y	:	-.773	-.379	-.221
CENTROID X	:	-.047	.074	.022
CENTROID Y	:	-.087	.106	-.051
POA TO CENTROID in.	:	.099	.130	.056
MIN RADIUS	:	.327	.406	.298
MEAN RADIUS	:	.637	.526	.500
MAX RADIUS	:	.914	.740	.718
HORIZONTAL SPREAD	:	1.171	1.171	1.171
VERTICAL SPREAD	:	1.440	.852	.435
EXTREME SPREAD	:	1.631	1.189	1.189
NUMBER IN ONE INCH CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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FILE:/PATTERNING/CENTERFIRE_PATT/830411.1

CENTERFIRE PATTERNS # 5

POA



OF SHOTS- 5

IN CIR

1 in = 1

2 in = 2

3 in = 3

HS= 3.339

VS= 1.765

GS= 3.777

CENTROID *

PATTERN # : 5

SHOTS (BEST OF) : 5

MAXIMUM X : 1.985

MINIMUM X : -1.434

MAXIMUM Y : .973

MINIMUM Y : -.792

CENTROID X : 2.293

CENTROID Y : .202

POA TO CENTROID in.: 2.302

MIN RADIUS : .130

MEAN RADIUS : 1.161

MAX RADIUS : 2.139

HORIZONTAL SPREAD : 3.339

VERTICAL SPREAD : 1.765

EXTREME SPREAD : 3.777

NUMBER IN ONE INCH CIRCLE = 1

NUMBER IN TWO INCH CIRCLE = 2

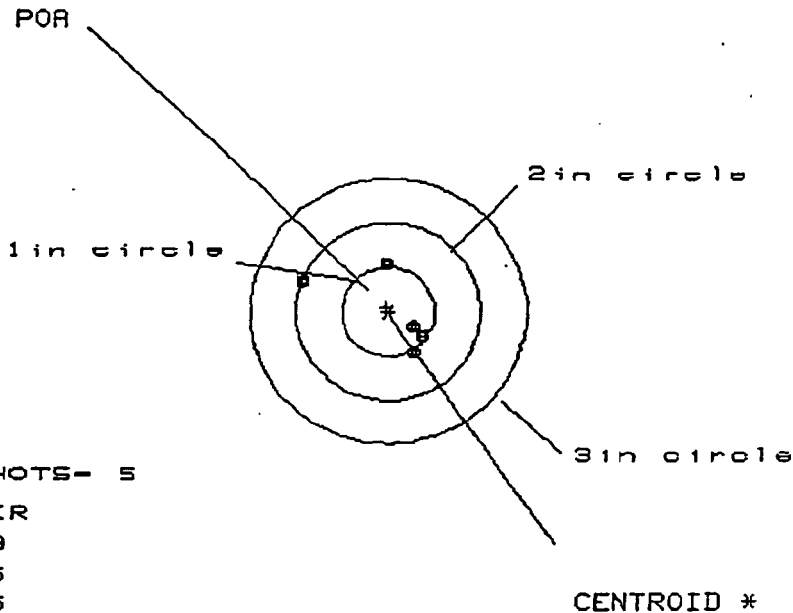
NUMBER IN THREE INCH CIRCLE = 3

BBL. REMOVED- REMOUNTED.

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FILE: PATTERNING/CENTERFIRE_PATT/890411

CENTERFIRE PATTERNS # 1



OF SHOTS- 5

IN CIR

1 in = 3

2 in = 5

3 in = 5

HS= 1.324

VS= .957

GS= 1.445

AUG. GS = 1.33

AUG. M.R. = .4986

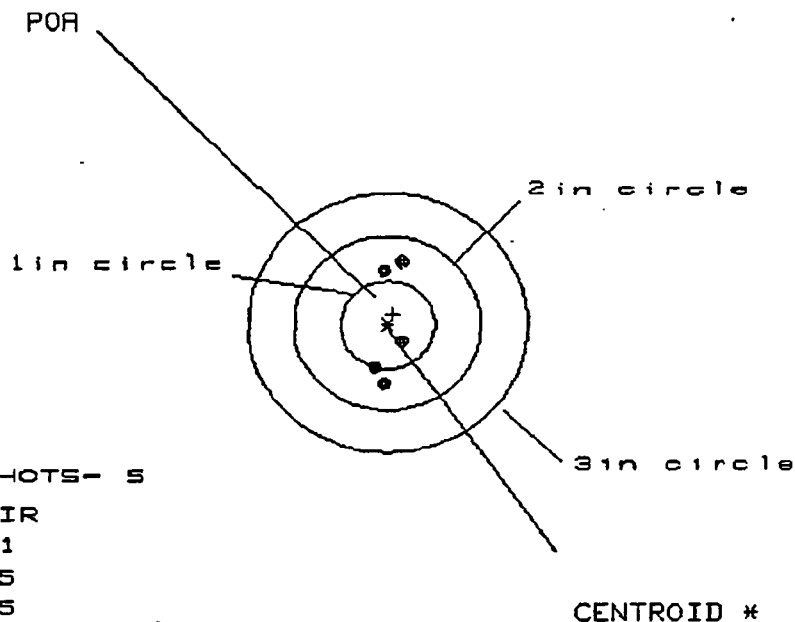
C- 6224208

PATTERN #	:	1			.243 WIN. SPORTER VARIANT
SHOTS (BEST OF)	:	5	4	3	<u>Ammo:</u>
MAXIMUM X	:	.412	.184	.198	REM. 80GR. "POWER-LOK" HP.
MINIMUM X	:	-.912	-.267	-.253	R. 243W2
MAXIMUM Y	:	.498	.588	.454	LOT- KID MD2622.
MINIMUM Y	:	-.459	-.377	-.297	
CENTROID X	:	.028	.256	.242	<u>SCOPE:</u>
CENTROID Y	:	-.048	-.130	-.004	LYMAN ALL AMERICAN
POA TO CENTROID in.	:	.056	.287	.242	20x.
MIN RADIUS	:	.292	.052	.166	BENCH REST 100YDS.
MEAN RADIUS	:	.555	.330	.348	
MAX RADIUS	:	.968	.638	.528	
HORIZONTAL SPREAD	:	1.324	.451	.451	
VERTICAL SPREAD	:	.957	.957	.751	
EXTREME SPREAD	:	1.445	1.005	.875	
NUMBER IN ONE INCH CIRCLE	=		3		
NUMBER IN TWO INCH CIRCLE	=		5		
NUMBER IN THREE INCH CIRCLE	=		5		

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FILE:/PATTERNING/CENTERFIRE_PATT/890411

CENTERFIRE PATTERNS # 2



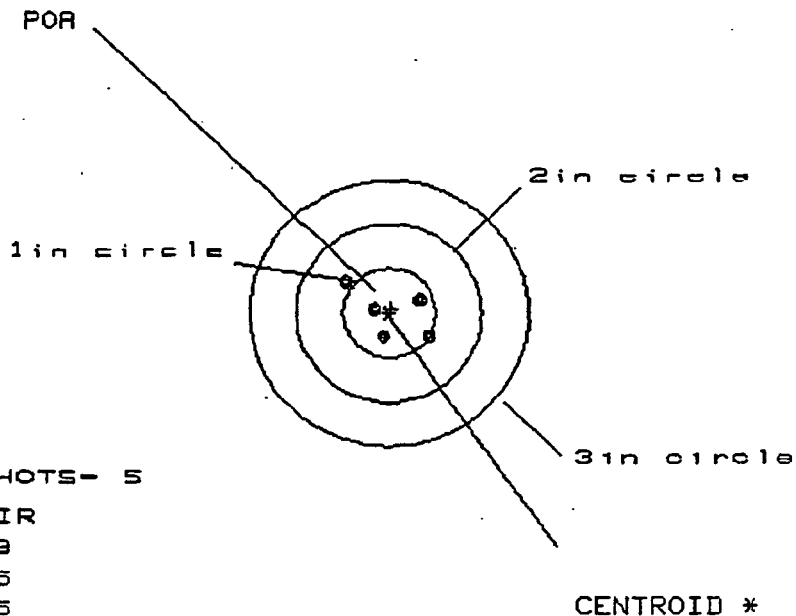
OF SHOTS- 5
IN CIR
1 in - 1
2 in - 5
3 in - 5
HS- .297
VS= 1.322
GS= 1.330

PATTERN #	:	2		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.126	.136	.134
MINIMUM X	:	-.171	-.140	-.142
MAXIMUM Y	:	.682	.831	.248
MINIMUM Y	:	-.640	-.470	-.193
CENTROID X	:	-.053	-.084	-.082
CENTROID Y	:	-.118	-.280	-.565
POA TO CENTROID in.	:	.129	.300	.571
MIN RADIUS	:	.225	.139	.153
MEAN RADIUS	:	.550	.450	.209
MAX RADIUS	:	.693	.831	.282
HORIZONTAL SPREAD	:	.297	.276	.276
VERTICAL SPREAD	:	1.322	1.301	.441
EXTREME SPREAD	:	1.330	1.301	.459
NUMBER IN ONE INCH CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

27 Mar 1989

FILE:/PATTERNING/CENTERFIRE_PATT/BS0411

CENTERFIRE PATTERNS # 3



OF SHOTS- 5

IN CIR

1in = 3

2in = 5

3in = 5

HS= .926

VS= .663

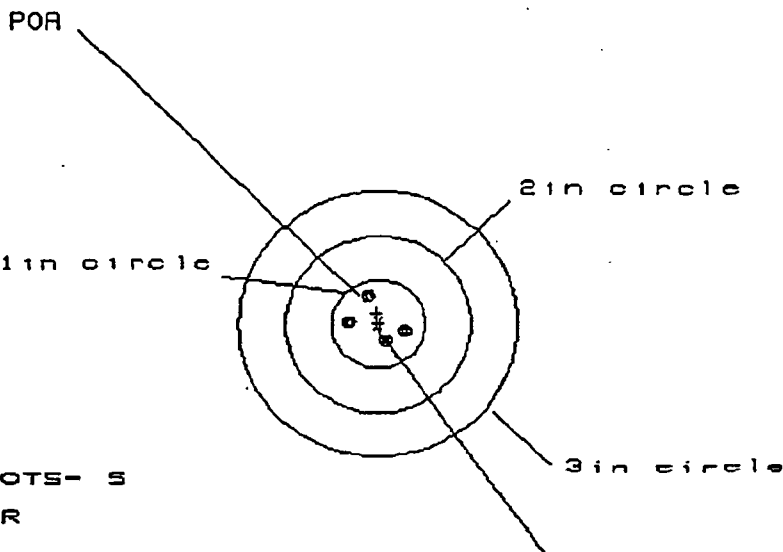
GS= 1.139

PATTERN #	:	3		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.448	.328	.290
MINIMUM X	:	-.478	-.312	-.203
MAXIMUM Y	:	.379	.221	.158
MINIMUM Y	:	-.284	-.189	-.226
CENTROID X	:	-.028	.092	-.017
CENTROID Y	:	-.049	-.144	-.081
POA TO CENTROID in.	:	.056	.171	.083
MIN RADIUS	:	.196	.256	.214
MEAN RADIUS	:	.386	.315	.262
MAX RADIUS	:	.610	.379	.331
HORIZONTAL SPREAD	:	.926	.640	.493
VERTICAL SPREAD	:	.663	.410	.384
EXTREME SPREAD	:	1.139	.716	.539
NUMBER IN ONE INCH CIRCLE	=		3	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

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FILE:/PATTERNING/CENTERFIRE PATT/890411

CENTERFIRE PATTERNS # 4



OF SHOTS- 5

IN CIR

1 in = 5

2 in = 5

3 in = 5

HS= .563

VS= .549

GS= .585

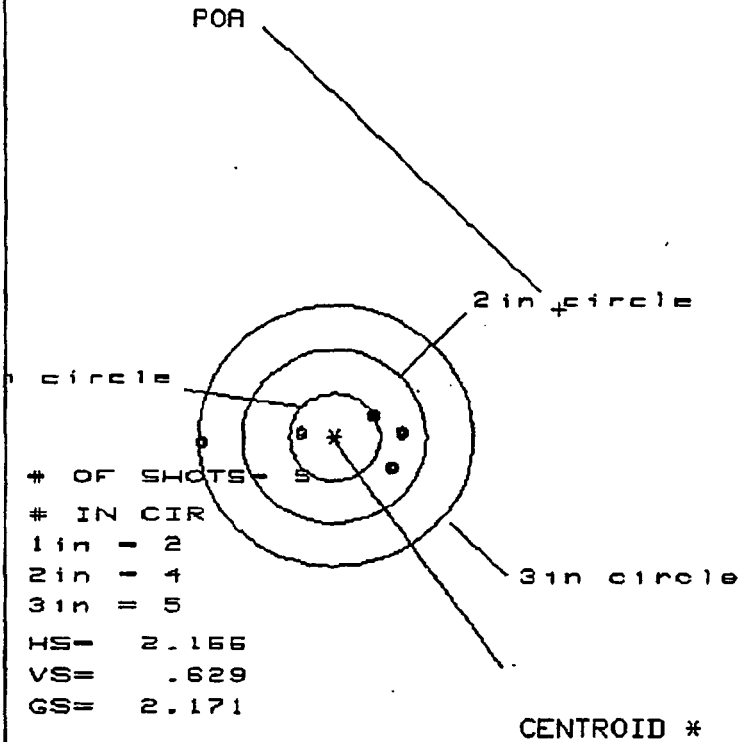
CENTROID #

PATTERN #	:	4		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.238	.220	.105
MINIMUM X	:	-.325	-.343	-.099
MAXIMUM Y	:	.373	.096	.052
MINIMUM Y	:	-.176	-.083	-.051
CENTROID X	:	.021	.040	.154
CENTROID Y	:	-.127	-.220	-.252
POA TO CENTROID in.	:	.120	.223	.295
MIN RADIUS	:	.130	.036	.052
MEAN RADIUS	:	.260	.187	.089
MAX RADIUS	:	.380	.357	.117
HORIZONTAL SPREAD	:	.563	.563	.204
VERTICAL SPREAD	:	.549	.179	.103
EXTREME SPREAD	:	.585	.568	.211
NUMBER IN ONE INCH CIRCLE	=		5	
NUMBER IN TWO INCH CIRCLE	=		5	
NUMBER IN THREE INCH CIRCLE	=		5	

27 Mar 1989

FILE:/PATTERNING/CENTERFIRE_PATT/BS0411

CENTERFIRE PATTERNS # 5



PATTERN #	:	5		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.735	.377	.393
MINIMUM X	:	-1.431	-.683	-.557
MAXIMUM Y	:	.252	.239	.262
MINIMUM Y	:	-.377	-.390	-.367
CENTROID X	:	-2.429	-2.071	-2.197
CENTROID Y	:	-1.450	-1.437	-1.460
POA TO CENTROID in.	:	2.829	2.521	2.638
MIN RADIUS	:	.338	.242	.309
MEAN RADIUS	:	.742	.447	.471
MAX RADIUS	:	1.432	.687	.567
HORIZONTAL SPREAD	:	2.166	1.060	.950
VERTICAL SPREAD	:	.629	.629	.629
EXTREME SPREAD	:	2.171	1.060	1.060
NUMBER IN ONE INCH CIRCLE	=		2	
NUMBER IN TWO INCH CIRCLE	=		4	
NUMBER IN THREE INCH CIRCLE	=		5	

BBL. REMOVED & REMOUNTED.
FOR POL. SHIFT.