

Figure 1: Schematic representation of the experimental design. The diagram shows a flow from 'Random assignment' to 'Experimental group' and 'Control group'. The experimental group is further divided into 'Experimental group 1' and 'Experimental group 2'. The control group is divided into 'Control group 1' and 'Control group 2'. The experimental groups receive 'Intervention' and 'Control' respectively. The control groups receive 'Control' and 'Intervention' respectively. The groups are then compared for 'Outcome'.

Action

Barrel Length

Capacity

Order No. 5715

*Includes 1 in chamber.

Remington

Serial Number: C6594608

Model: 700



RE00038543

M-24 INSPECTION CHECKLIST
CONTRACT #: DAAE-20-97-C-242

R & E NUMBER 38543

SERIAL NUMBER C 6594608

LOG-IN DATE 1-2-02

INSPECT AND VERIFY:			
OPERATION #	OPERATION NAME	DATE	INITIAL
550	DIS-ASSEMBLE GUN	1-2-02	RJR
560 A	RE-BARREL AT CUSTOM SHOP	1-3-02	BWT
B	DRILL AND TAP	1-5-02	BWT
C	POLISH		
575	ASSEMBLE	1-4-02	AC
600	PROOF	1-4-02	AC
605	CHECK HEADSPACE		
610	DIS-ASSEMBLE GUN	1-4-02	AC
612	MAGNAFLUX		AL
615	ROLLMARK CALIBER	1/7/02	AB
618	ROTO-BLAST	1/7	KO
620	APPLY COATINGS	1/7	HP
625 A	FINAL ASSEMBLY	1-9-02	RJR
B	TRIGGER PULL TEST		
C	SAFETY "ON" FORCE		
D	SAFETY "OFF" FORCE		
E	FIRING PIN INDENT		
640	TARGET	1-10-02	AC
655	FINAL INSPECT	1-11-02	
660	PACK	1-11-02	BA
		SHIP DATE	
		QAR INSPECTION DATE	

SNIPER WEAPON SYSTEM - UNIQUE STATISTICAL INFORMATION

FIREARM SERIAL NUMBER / DATASET NAME: C6594608.___0
FILE DATE AND TIME: 01/10/2002 02:56

THE FOLLOWING DATA IS ALL REPORTED IN UNITS OF INCHES

The Average X Centroid of the Five Target Set:	-0.027
The Average Y Centroid of the Five Target Set:	0.100
The Average Point of Impact of the Five Target Set:	0.103
The Average Mean Radius of the Five Target Set:	0.508
The Distance from POA to Centroid Target #1:	0.075
The Distance from Centroid Target #2 to Centroid Target #1:	0.200
The Distance from Centroid Target #3 to Centroid Target #1:	0.185
The Distance from Centroid Target #4 to Centroid Target #1:	0.052
The Distance from Centroid Target #5 to Centroid Target #1:	0.065

SERIAL NUMBER: C6594608. __0

TARGET NUMBER: 1

FILE DATE: 01/10/2002

FILE TIME: 02:56

POINT#	X	Y
1:	0.357	0.654
2:	-0.059	0.450
3:	0.361	0.414
4:	-0.824	-0.038
5:	-0.154	-0.586
6:	-0.211	-0.343
7:	-0.073	-0.043
8:	0.280	-0.314
9:	0.141	0.034
10:	-0.253	0.386

X CENTROID: -0.044

Y CENTROID: 0.061

POA TO CENTROID: 0.075

HORZ SPREAD: 1.185

VERT SPREAD: 1.240

GROUP SPREAD: 1.369

MIN RADIUS: 0.108

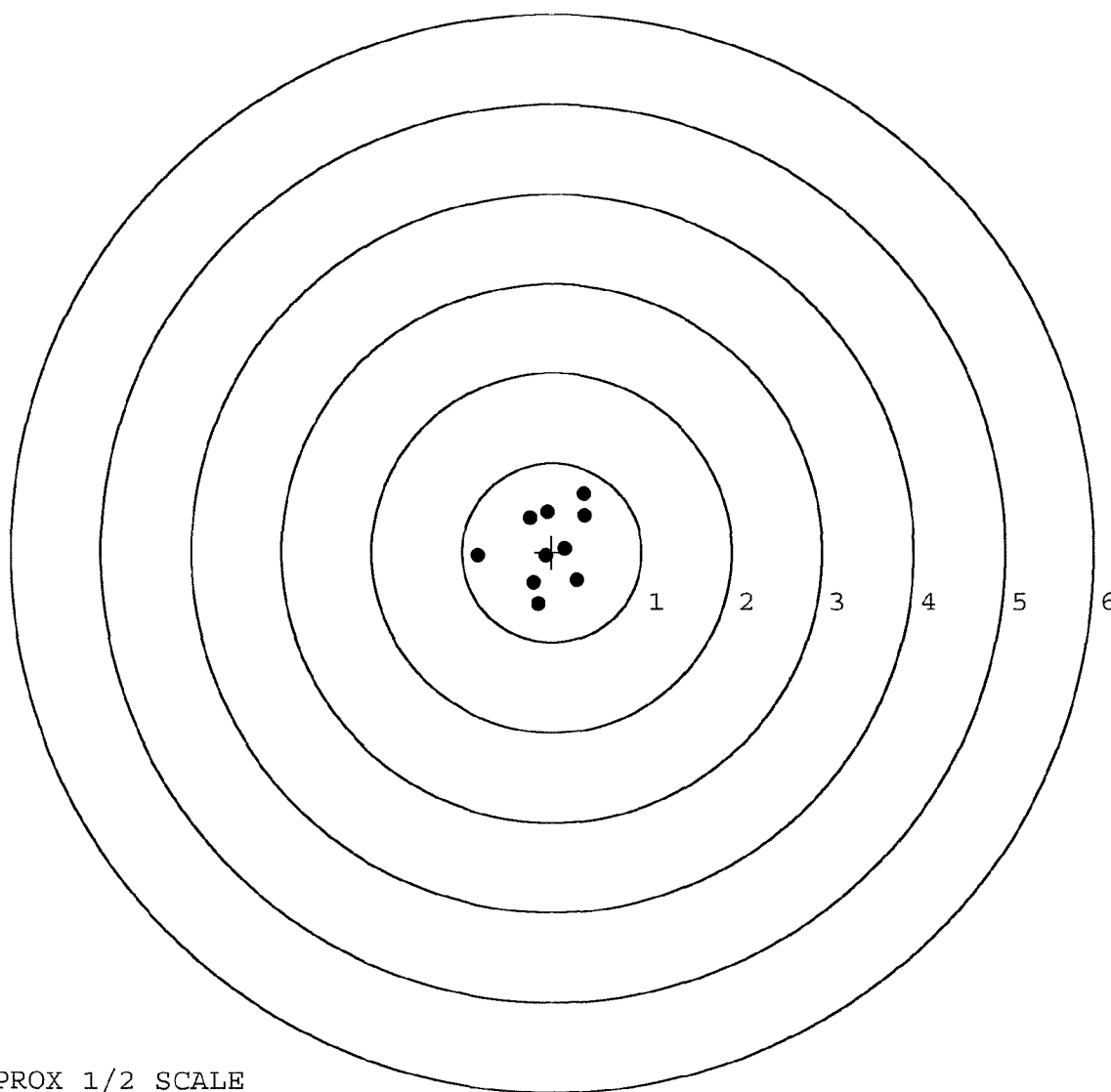
MAX RADIUS: 0.787

MEAN RADIUS: 0.470

IN 1 IN DIAMETER: 6

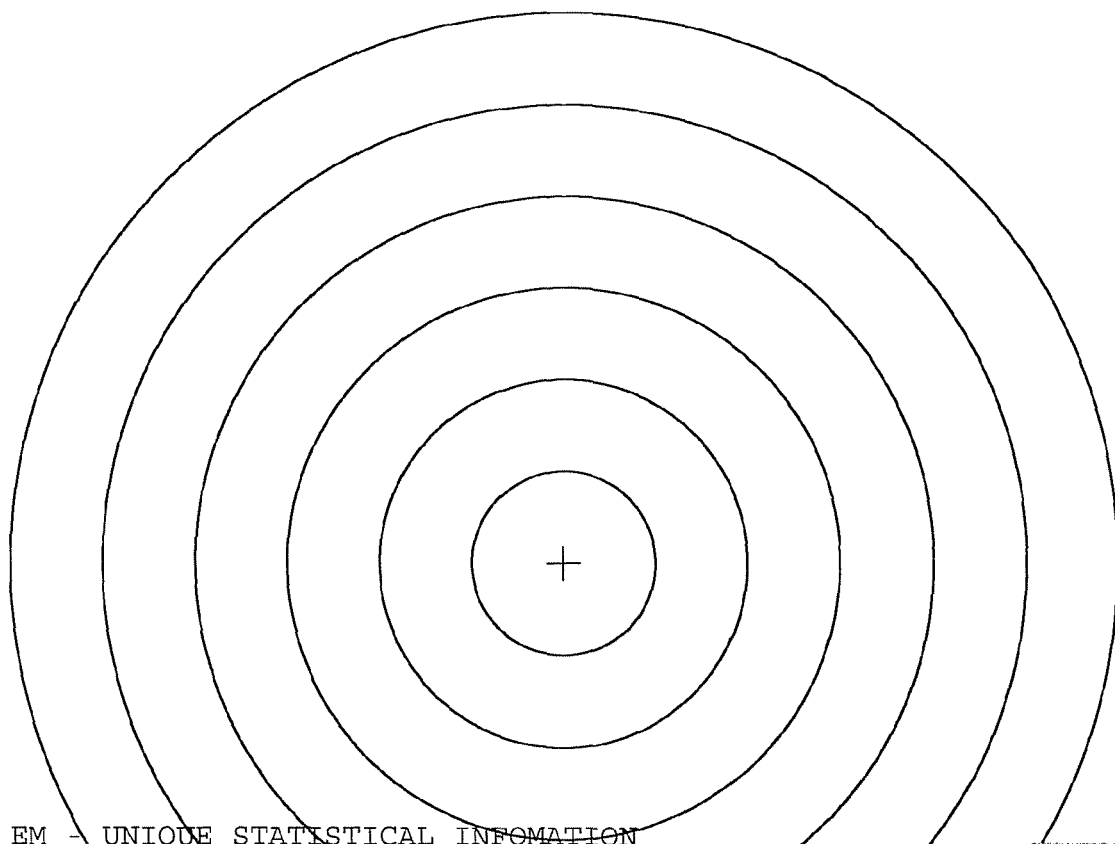
IN 2 IN DIAMETER: 10

in 3 IN DIAMETER: 10



TARGET APPROX 1/2 SCALE

SERIAL NUMBER: C6594608. __ 0	POINT#	X	Y
TARGET NUMBER: 2	1:	0.915	0.615
FILE DATE: 01/10/2002	2:	0.158	0.718
FILE TIME: 02:56	3:	-0.546	0.729
	4:	-1.838	0.016
X CENTROID: -0.124	5:	-0.248	-0.479
Y CENTROID: 0.245	6:	0.230	-0.488
POA TO CENTROID: 0.274	7:	0.017	0.033
HORZ SPREAD: 2.753	8:	-0.100	0.283
VERT SPREAD: 1.217	9:	0.069	0.375
GROUP SPREAD: 2.817	10:	0.106	0.644
MIN RADIUS: 0.045			
MAX RADIUS: 1.729			
MEAN RADIUS: 0.657			
# IN 1 IN DIAMETER: 4			
# IN 2 IN DIAMETER: 8			
# in 3 IN DIAMETER: 9			



EM - UNIQUE STATISTICAL INFORMATION

FIREARM SERIAL NUMBER / DATASET NAME: C6594608. __
 FILE DATE AND TIME: 01/10/2002 02:56

THE FOLLOWING DATA IS ALL REPORTED IN UNITS OF INC

The Average X Centroid of the Five Target Set:
 The Average Y Centroid of the Five Target Set:
 The Average Point of Impact of the Five Target Set:
 The Average Mean Radius of the Five Target Set:

SERIAL NUMBER: C6594608. 0

TARGET NUMBER: 3

FILE DATE: 01/10/2002

FILE TIME: 02:56

POINT#	X	Y
1:	0.619	1.099
2:	-0.200	0.156
3:	0.334	0.291
4:	-0.694	-0.684
5:	-0.006	-0.901
6:	0.236	-0.285
7:	0.214	-0.041
8:	0.296	0.104
9:	0.256	0.125
10:	0.142	-0.126

X CENTROID: 0.120

Y CENTROID: -0.026

POA TO CENTROID: 0.123

HORZ SPREAD: 1.313

VERT SPREAD: 2.000

GROUP SPREAD: 2.214

MIN RADIUS: 0.095

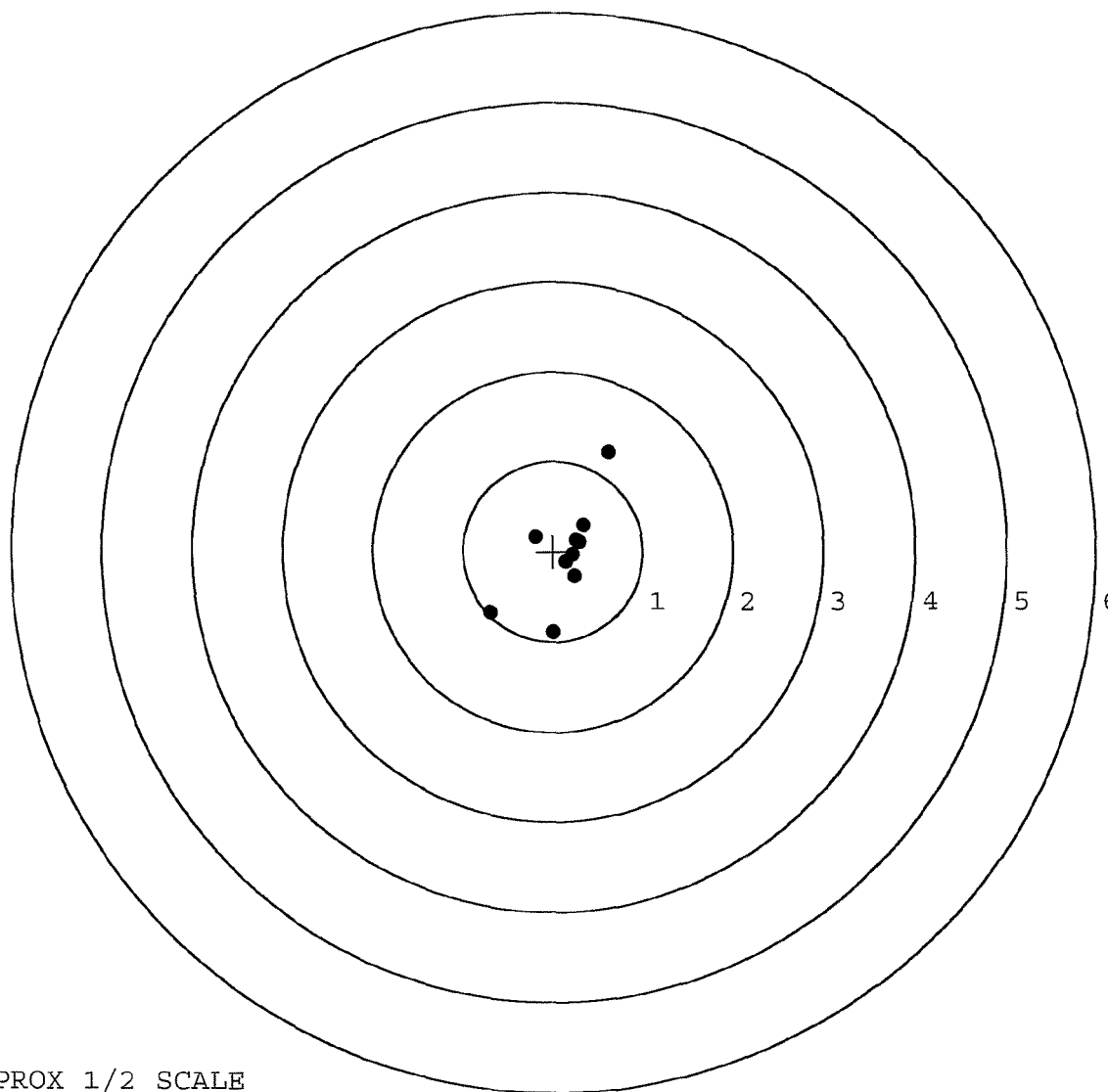
MAX RADIUS: 1.231

MEAN RADIUS: 0.482

IN 1 IN DIAMETER: 7

IN 2 IN DIAMETER: 8

in 3 IN DIAMETER: 10



TARGET APPROX 1/2 SCALE

SERIAL NUMBER: C6594608. 0

TARGET NUMBER: 4

FILE DATE: 01/10/2002

FILE TIME: 02:56

X CENTROID: -0.077

Y CENTROID: 0.101

POA TO CENTROID: 0.127

HORZ SPREAD: 1.881

VERT SPREAD: 1.693

GROUP SPREAD: 2.480

MIN RADIUS: 0.119

MAX RADIUS: 1.339

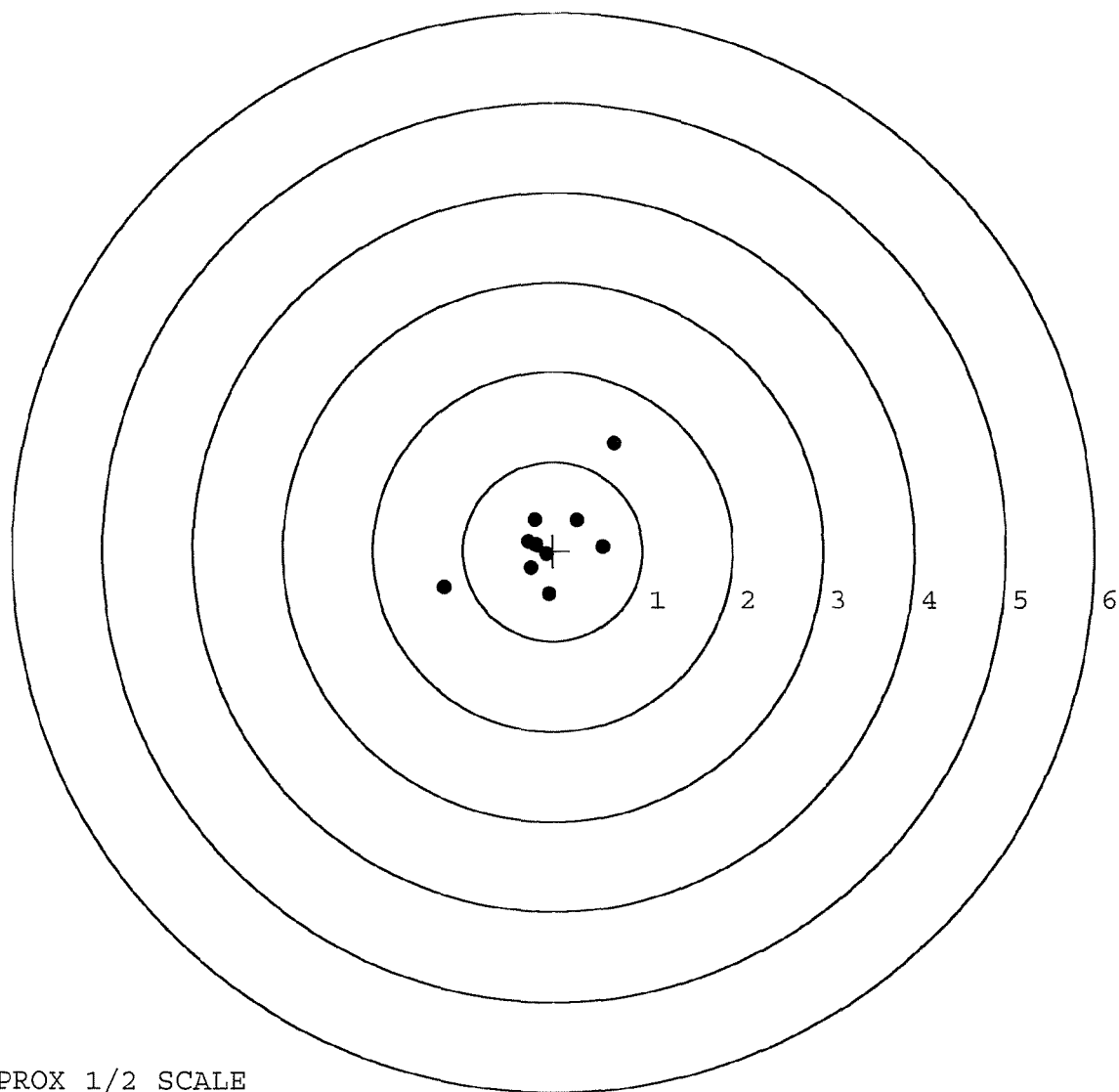
MEAN RADIUS: 0.530

IN 1 IN DIAMETER: 6

IN 2 IN DIAMETER: 8

in 3 IN DIAMETER: 10

POINT#	X	Y
1:	0.674	1.210
2:	-1.207	-0.407
3:	-0.052	-0.483
4:	0.554	0.052
5:	0.263	0.341
6:	-0.208	0.353
7:	-0.278	0.110
8:	-0.251	-0.192
9:	-0.077	-0.040
10:	-0.192	0.069



TARGET APPROX 1/2 SCALE

SERIAL NUMBER: C6594608. __0

TARGET NUMBER: 5

FILE DATE: 01/10/2002

FILE TIME: 02:56

X CENTROID: -0.012

Y CENTROID: 0.118

POA TO CENTROID: 0.118

HORZ SPREAD: 1.398

VERT SPREAD: 0.888

GROUP SPREAD: 1.419

MIN RADIUS: 0.103

MAX RADIUS: 0.917

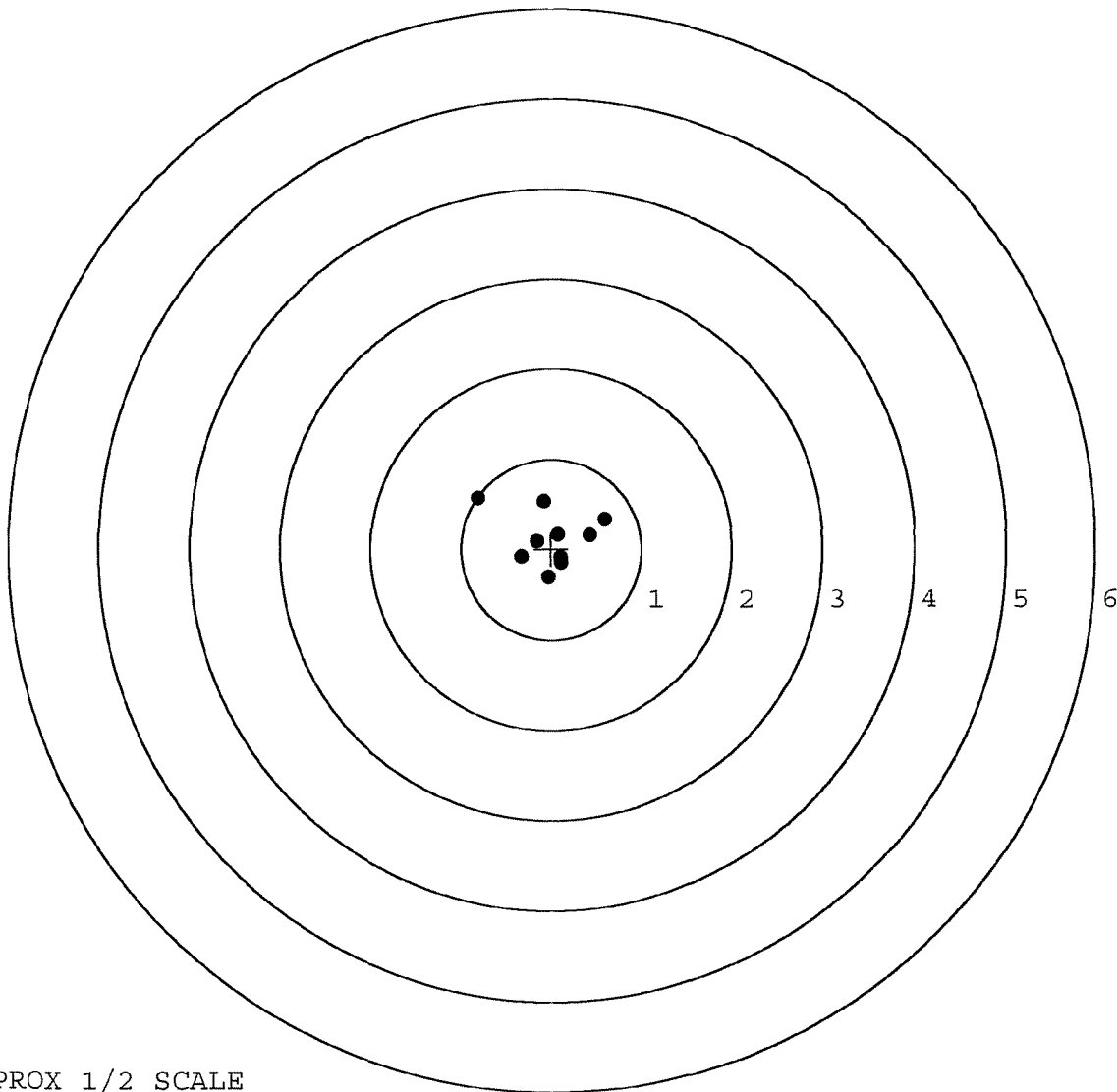
MEAN RADIUS: 0.403

IN 1 IN DIAMETER: 8

IN 2 IN DIAMETER: 10

in 3 IN DIAMETER: 10

POINT#	X	Y
1:	-0.808	0.572
2:	-0.089	0.527
3:	0.590	0.329
4:	0.430	0.156
5:	0.113	-0.159
6:	-0.038	-0.316
7:	-0.337	-0.088
8:	-0.160	0.091
9:	0.080	0.164
10:	0.102	-0.098



TARGET APPROX 1/2 SCALE

VERY IMPORTANT:
Instruction Book
enclosed to assure
safe use of this
firearm.

Remington®

REG. U.S. PAT. & TM. OFF.

DUPONT

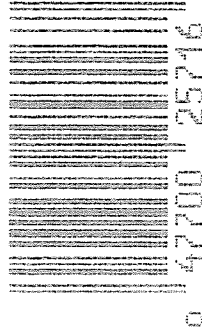
MODEL 700™ M24

SERIAL NO.
C6594608

ORDER NO.
5716

MADE IN ILION, N.Y. U.S.A. Reg. U.S. Pat. & Tm. Off. Marca Registrada. Marque Deposee.

LPC



5716 C6594608

CONTRACT # DAAA21-87-C-0086

GUN SERIAL # *C 6594608*

OP. #	OP. NAME	READINGS	DATE	INIT
575 & 580	Assemble Action and Stock		10/31/90	Kd
600	Proof		10/31/90	Kd
607	Check Headspace		10/31/90	Kd
610	Dis-assemble Gun		10/31/90	Kd
612	Magnaflux Barrel Action		11/1/90	KCR
	Magnaflux Bolt		11/1/90	KCR
615	Rollmark Caliber		11/1/90	KCR
617	Drill and Tap Sight Holes		11/5/90	FAB
618	Polish Barrel <i>AB</i>		11/6/90	W.B.
620	Apply Coatings (Barrel Action)		11/26/90	<i>TH</i>
	Apply Coating (Bolt)			
625	Final Assembly		12/28/90	K.S.
	A) Clean inside of Bolt Assembly			
	B) Inspect Rear Firing Pin Hole for Chamfer in Bolt Head		12/28/90	K.S.
	C) Inspect Ejector Hole for Chamfer		12/28/90	K.S.
	D) Oil Firing Pin Ass'y		12/28/90	K.S.
	E) Adjust Trigger Pull to Min Setting and Stake		1/7/91	<i>JH</i>

op. #	BARBER - M24 0020177 OP. NAME	READINGS					DATE	INIT
625 cont.	F) Safety On Force	3.75	3.75	3.50			1/2/91	KY
	G) Safety Off Force	3.25	3.25	3.25			1/2/91	KY
	H) Trigger Pull Test & Retainability						1/7/91	JH
	I) Firing Pin Indent	.020	.020	.020			1/2/91	KY
	J) Assemble Stock						1/15/91	KY
	K) Assemble Swivel Studs						1-17-91	JH
	L) Attach Front and Rear Sight Assemblies						1/15/91	KY
	M) Iron Sight Alignment						1/15/91	KY
	N) Detach Front & Rear Sights & place in numbered container						1/15/91	KY
	O) Attach Scope to Rifle						1/15/91	KY
	P) Detach & Attach Scope 20 Times						1/15/91	KY
640	Gallery Target & Test						1-16-91	AC
	A) Time						1-16-91	AC
	B) Malfunctions						1-16-91	AC
	C) Pierced Primers						1-16-91	AC
	D) Optical Clarity of Scope						1-16-91	AC
645	Inspect for Live Ammo						1-16-91	AC
655	Final Inspection							
	A) Headspace						1-17-91	JH
	B) Trigger Pull	2.42	2.26	2.36	2.42	2.40	1-17-91	JH
	C) Function						1-17-91	JH
660	Pack						3-19-91	RF

AVERAGE PULL FORCE BETWEEN
INITIAL & CYCLE TESTS

2.50# + .50#

3.00# + .75#

4.00# + 1.00#

SERIAL NO. C6594608

DATE 1-7-91

TESTER JLL

	2.50# INITIAL	2.50# AFTER 50 CYCLES	FINAL TEST & TO RESET 2.50#		COMMENTS
PULL #1	2.42	2.46	2.18	2.42	MIN. SETTING, NO AVG. OF 5 READINGS ACCEPT- ABLE LESS THAN 2#
PULL #2	2.27	2.47	2.33	2.26	
PULL #3	2.24	2.40	2.31	2.36	
PULL #4	2.22	2.50	2.33	2.42	
PULL #5	2.32	2.29	2.20	2.40	
TOTAL					
AVG.					

	3.00# INITIAL	3.00# AFTER 20 CYCLES		COMMENTS
PULL #1	3.42	3.38		
PULL #2	3.23	3.39		
PULL #3	3.41	3.49		
PULL #4	3.40	3.36		
PULL #5	3.45	3.49		
TOTAL				
AVG.				

	4.00# INITIAL	4.00# AFTER 20 CYCLES	MAX SETTING GREATER THAN 4#	RESET TO 4# FOR TARGET & ACCURACY
PULL #1	4.27	4.36	4.36	4.36
PULL #2	4.21	4.32	4.31	4.31
PULL #3	4.30	4.33	4.34	4.34
PULL #4	4.32	4.27	4.28	4.28
PULL #5	4.29	4.32	4.29	4.29
TOTAL				
AVG.				

CENTROIDAL DISTANCE CALCULATIONS
FOR RIFLE # 06594608
17 Jan 1991

CENTROIDAL DISTANCES

0 TO	1	.100896
1 TO	2	.26149
1 TO	3	.107564
1 TO	4	.272485
1 TO	5	.367545

$\frac{3.4}{5}$ <----POA

THE AVERAGE X-COORDINATE FOR THIS RIFLE IS: .1098
THE AVERAGE Y-COORDINATE FOR THIS RIFLE IS: .0318
THE RESULTING AVERAGE POI RADIUS FOR THIS RIFLE IS: .114312

THE ANR FOR THIS RIFLE IS: .9698

17 Jan 1991

FILE:/PATTERNING/CENTERFIRE_PATT/C8594608

CENTERFIRE PATTERNS # 1

POA

1in circle

2in circle

3in circle

OF SHOTS = 10

IN CIR

1in = 2

2in = 4

3in = 8

CENTROID *

HS = 2.071

VS = 2.483

GS = 3.086

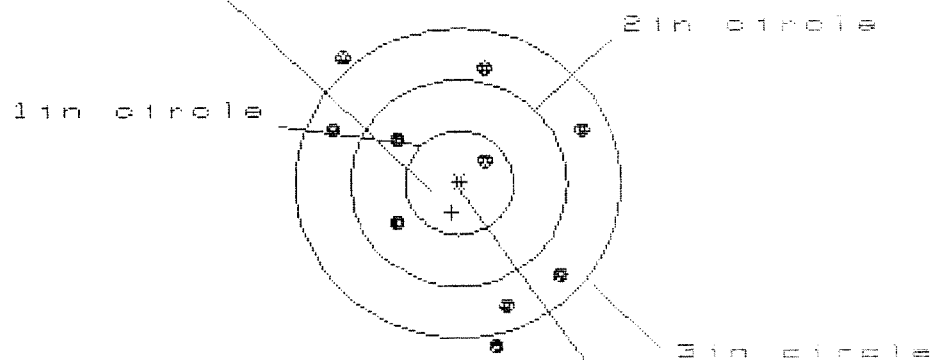
PATTERN #	1	2	3
SHOTS (BEST OF)	10	9	8
MAXIMUM X	1.301	1.119	1.124
MINIMUM X	-0.770	-0.625	-0.620
MAXIMUM Y	1.376	1.509	1.099
MINIMUM Y	-1.107	-0.954	-0.765
CENTROID X	0.098	-0.047	-0.052
CENTROID Y	0.024	-0.129	-0.318
POA TO CENTROID in.	0.101	0.137	0.322
MIN RADIUS	0.433	0.438	0.501
MEAN RADIUS	1.025	0.910	0.815
MAX RADIUS	1.894	1.510	1.125
HORIZONTAL SPREAD	2.071	1.744	1.744
VERTICAL SPREAD	2.483	2.463	1.864
EXTREME SPREAD	3.086	2.464	1.864
NUMBER IN ONE INCH CIRCLE =	2		
NUMBER IN TWO INCH CIRCLE =	4		
NUMBER IN THREE INCH CIRCLE =	8		

17 Jan 1991

FILE:/PATTERNING/CENTERFIRE_PATT/C8594808

CENTERFIRE PATTERNS # 2

POA



OF SHOTS - 10

IN CIR

1in = 1

2in = 3

3in = 6

HS = 2.253

VS = 2.789

GS = 3.120

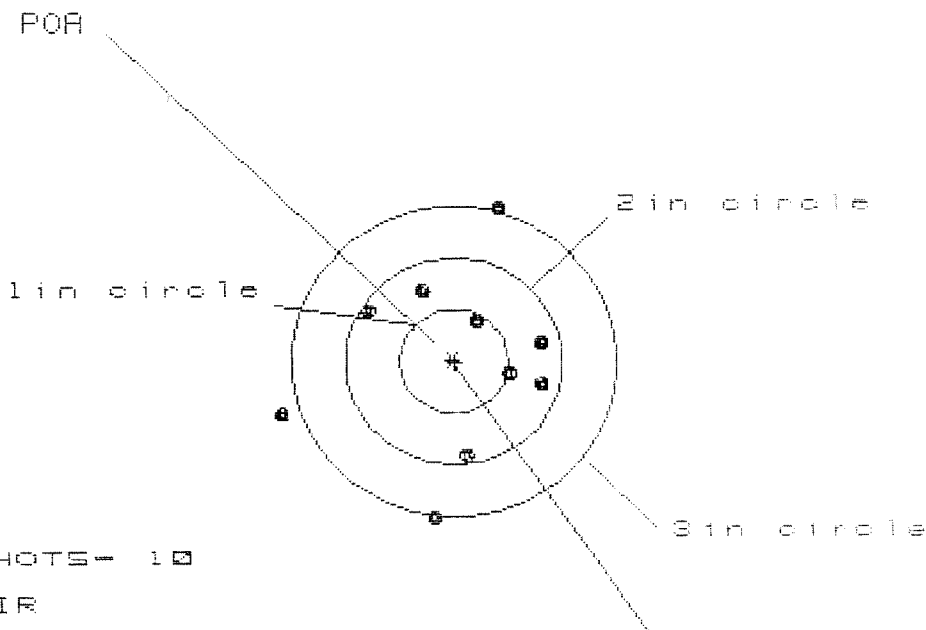
CENTROID *

PATTERN #	:	2		
SHOTS (BEST OF)	:	10	9	8
MAXIMUM X	:	1.135	1.176	1.052
MINIMUM X	:	-1.118	-1.077	-1.201
MAXIMUM Y	:	1.210	1.034	1.065
MINIMUM Y	:	-1.579	-1.377	-1.248
CENTROID X	:	.062	.021	.145
CENTROID Y	:	.283	.459	.330
POA TO CENTROID in.	:	.290	.459	.360
MIN RADIUS	:	.299	.265	.207
MEAN RADIUS	:	1.105	1.027	.973
MAX RADIUS	:	1.621	1.453	1.299
HORIZONTAL SPREAD	:	2.253	2.253	2.253
VERTICAL SPREAD	:	2.789	2.411	2.313
EXTREME SPREAD	:	3.120	2.818	2.444
NUMBER IN ONE INCH CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		3	
NUMBER IN THREE INCH CIRCLE	=		6	

17 Jan 1991

FILE:/PATTERNING/CENTERFIRE_PATT/08594688

CENTERFIRE PATTERNS # 3



OF SHOTS - 10

IN CIR

1 in = 1

2 in = 7

3 in = 7

HSE = 2.468

VSE = 2.987

GSE = 3.053

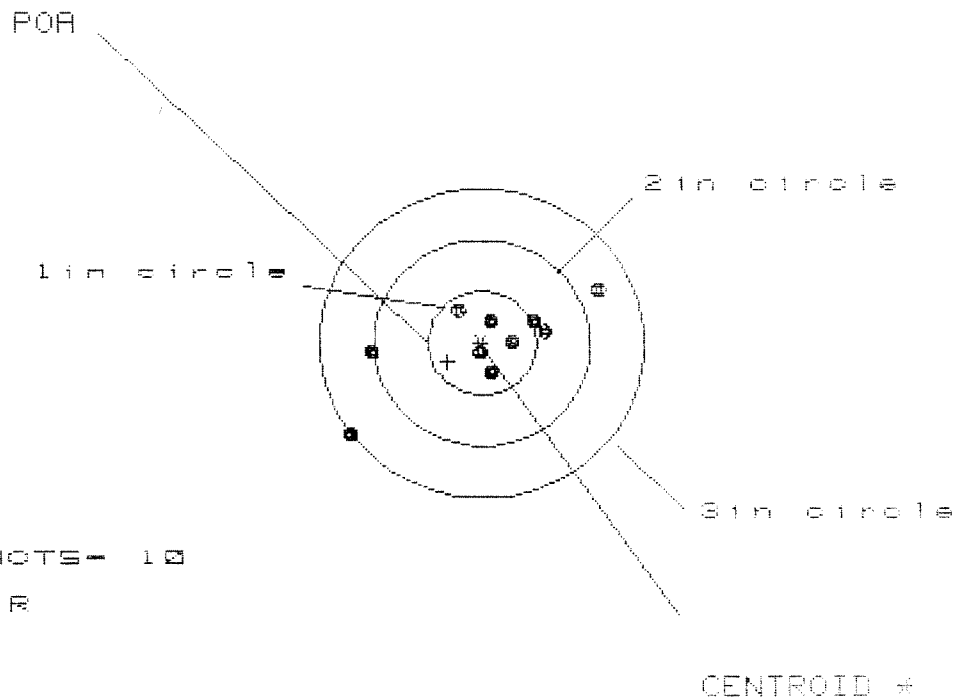
CENTROID #

PATTERN #	3		
SHOTS (BEST OF)	10	9	8
MAXIMUM X	.828	.646	.677
MINIMUM X	-1.640	-.951	-.919
MAXIMUM Y	1.499	1.447	.787
MINIMUM Y	-1.488	-1.540	-1.359
CENTROID X	-.009	.173	.141
CENTROID Y	.013	.065	-.116
POA TO CENTROID in.	.016	.185	.183
MIN RADIUS	.473	.378	.390
MEAN RADIUS	1.003	.885	.820
MAX RADIUS	1.705	1.586	1.483
HORIZONTAL SPREAD	2.468	1.597	1.597
VERTICAL SPREAD	2.987	2.987	2.146
EXTREME SPREAD	3.053	3.053	2.147
NUMBER IN ONE INCH CIRCLE =		1	
NUMBER IN TWO INCH CIRCLE =		7	
NUMBER IN THREE INCH CIRCLE =		7	

12 Jan 1991

FILE:/PATTERNING/CENTERFIRE_PATT/C8594688

CENTERFIRE PATTERNS # 4



OF SHOTS - 10

IN CIR

1 in = 5

2 in = 7

3 in = 10

H0 = 2.260

V0 = 1.336

G0 = 2.625

PATTERN #	:	4		
SHOTS (BEST OF)	:	10	9	8
MAXIMUM X	:	1.039	.903	.543
MINIMUM X	:	-1.221	-1.154	-1.041
MAXIMUM Y	:	.484	.389	.237
MINIMUM Y	:	-.853	-.409	-.361
CENTROID X	:	.320	.456	.343
CENTROID Y	:	.182	.277	.229
POA TO CENTROID in.	:	.368	.533	.412
MIN RADIUS	:	.090	.118	.141
MEAN RADIUS	:	.597	.470	.411
MAX RADIUS	:	1.489	1.166	1.048
HORIZONTAL SPREAD	:	2.260	2.057	1.584
VERTICAL SPREAD	:	1.336	.798	.598
EXTREME SPREAD	:	2.625	2.131	1.595
NUMBER IN ONE INCH CIRCLE	=		5	
NUMBER IN TWO INCH CIRCLE	=		7	
NUMBER IN THREE INCH CIRCLE	=		10	

17 Jan 1991

FILE:/PATTERNING/CENTERFIRE_PATT/08594608

CENTERFIRE PATTERNS # 5

POA

1in circle

2in circle

3in circle

OF SHOTS- 10

IN CIR

1in = 1

2in = 4

3in = 8

HS= 2.566

VS= 2.394

GS= 3.142

CENTROID *

PATTERN #	:	5		
SHOTS (BEST OF)	:	10	9	8
MAXIMUM X	:	1.334	1.013	.678
MINIMUM X	:	-1.232	-1.084	-.953
MAXIMUM Y	:	1.105	1.198	1.087
MINIMUM Y	:	-1.289	-1.196	-1.307
CENTROID X	:	.078	-.070	.065
CENTROID Y	:	-.343	-.436	-.325
POA TO CENTROID in.	:	.352	.442	.332
MIN RADIUS	:	.196	.255	.164
MEAN RADIUS	:	1.119	1.070	1.002
MAX RADIUS	:	1.574	1.436	1.463
HORIZONTAL SPREAD	:	2.566	2.097	1.831
VERTICAL SPREAD	:	2.394	2.394	2.394
EXTREME SPREAD	:	3.142	2.903	2.724
NUMBER IN ONE INCH CIRCLE	=		1	
NUMBER IN TWO INCH CIRCLE	=		4	
NUMBER IN THREE INCH CIRCLE	=		8	