RD-69-8

# REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE



PETERS

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_

cc: W.W. Coleman, II/File

J.W. Bower

J.G. Hill

J.R. Snedeker

F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT REPORT# 860972
APRIL 21,1986

MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

## MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

ABSTRACT:

Research and Development finds the Trial and Pilot Evaluation of the Model XP-100 .223 REM caliber to be acceptable. However, the following should be investigated, by production:

1. During the Visual inspection all of the pistols were found to have some random spots of glue, and the stock luster was mismatched. More care needs to be taken during the assembly of the stocks.

Prepared by: F.L. SUPRY
Date Prepared: 4/21/86

proofread and cleared by:

J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab

W.H. COLEMAN, II New Products Research Lab Director REP.#860972

W.O.# 925C0805

## MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

TO: J.R. Snedeker FROM: F.L. Supry

#### INTRODUCTION:

On April 07, 1986 a request to conduct a Trial and Pilot Evaluation on the Model XP-100 .223 REM. caliber pistol was received by the Test Lab. The evaluation would use eight guns, withdrawn from the warehouse, and consist of Visual Inspection, and 100 Yard Accuracy.

## SCOPE OF TEST:

To determine if the production run samples meet Remington Specifications set by the Research Design Section.

## TEST RESULTS:

The Model XP-100, chambered in the .223 REM. caliber, was found to be acceptable in all phases of the Trial and Pilot Evaluation.

#### REPORT TEXT:

#### 1. VISUAL INSPECTION:

- A. The visual inspection committee found no major items in the appearance of the pistols inspected.
- B. The following general comments were made in overall reference to the pistols:
  - a. The luster of the pistols needs improvement.
  - b. The removing of the excess glue needs improvement.
- C. The pistols used in the visual inspection were:

B7511233 B7511217 B7511204 B7511234 B7511598 B7511186

D. Comments recorded for each individual pistol are located in the appendix of this report.

#### 2. ACCURACY:

The Remington standard for the XP-100, chambered in the .223 REM caliber is an extreme Group Size of: 3.0 inches for a five (5) shot group.

A. Eight (8) pistols were tested for 100 yard accuracy.

B7511233 B7511217 B7511204 B7511137 B7511234 B7511598 B7511186 B7511155

B. The following averages were established:

a. Group Size: 1.99 inches

b. Horizontal Spread: 1.42 inches

c. Vertical Spread: 1.51 inches

B. Accuracy results per individual pistol are located in the appendix of this report.

#### TEST PROCEDURE:

#### 1. VISUAL INSPECTION:

- A. The Visual Inspection Committee consisted of W. Warren, (Q.C.); R. Howe, F. Supry, and T. Douglas, (Research).
- B. Six (6) of the eight (8) pistols were used for the visual inspection.
- C. Each pistol was wiped down with a clean white Coyne towel, and examined by each member of the Visual Inspection Committee. All comments were recorded.

#### 2. ACCURACY:

- A. The accuracy was shot by T. Douglas, J. Ronkainen, and K. Calkins, (Research), at the R & D 100 yard range.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 12X scope.
- C. Remington ammunition, index R223R2; code U08-002301, 55 grain hollow point, was used for the 100 yard accuracy test.
- E. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- F. A total of three (3), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- G. The patterns were analyzed for group size, horizontal spread, and vertical spread, using the HP 9000 computer. The averages were calculated for each pistol.

APPENDIX

#### VISUAL INSPECTION:

#### GENERAL COMMENTS:

The pistols were found to be acceptable; however, more care should be taken during the sanding and the gluing operations.

#### COMMENTS PER INDIVIDUAL RIFLE:

B7511233 Glue marks: bottom of forend and left side diamond.
Bright mar on trigger.
Braze shows through under bolt handle.
Finish varies in luster.

B7511217 Finish varies in luster.

Braze shows through under bolt handle.

White line spacers look dirty.

Forend tip rough at barrel groove.

Diamond cracked, bottom rear of pistol grip.

Random glue marks.

B7511204 Random glue marks.
Upper part of right grip is rough.
Finish varies in luster.

B7511234 Random glue marks.

Barrel grooves are rough.

Mar on bolt handle.

Striations do not meet with the center of the diamond.

B7511598 Several cutter marks on the inside of the receiver.

Left side diamond gouged.

Braze shows through under bolt handle.

Random glue marks.

B7511186 Random glue marks.

Mar bottom rear of bolt.

Burr on bolt handle and bolt lug.

# ACCURACY:

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL (in.)
B7511155	1.49 3.01 2.32	1.49 2.02 1.51 1.67	0.76 2.90 1.78
AVERAGE =	2.27	1.67	1.81
B7511217	1.92 0.97	1.92 0.45	0.73 0.97
AVERAGE =	3.04 1.98	$\frac{2.64}{1.67}$	$\frac{2.13}{1.28}$
B7511233	2.22 1.72	2.10 1.44	1.45 1.45
AVERAGE =	1.44	1.37	0.67 1.19
в7511137	1.21 1.26	0.76 0.90	1.12 1.13
AVERAGE =	3.24 1.90	2.96 1.54	1.32
B7511598	1.44	1.44 1.55	1.00 0.85
AVERAGE =	1.93	1.18	1.71
B7511186	1.87 1.85	1.13 1.80	1.68 1.50
AVERAGE =	1.92	0.83 1.25	1.86

ACCURACY: (continued)

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL
	(2007)	(111.)	(14.7
B7511234	1.85	0.60	1.85
	2.56	0.74	2.52
	2.26	1.42	2.02
AVERAGE =	2.22	0.92	2.13
B7511204	1.72	1.11	1.32
D/JII204	2.83	1.64	2.31
	2.04	1.67	1.18
AVERAGE =	$\frac{2.04}{2.20}$	$\frac{1.67}{1.47}$	1.60
AVERAGE -	2.20	1.4/	1.00

# AVERAGE GROUP SPREAD WITH 5, 4 , AND 3 SHOTS

GUN NUMBER	5 SHOT GROUP (in.)	4 SHOT GROUP (in.)	3 SHOT GROUP (in.)
B7511155	2.27	1.41	1.29
B7511217	1.98	1.53	1.14
B7511233	1.79	1.28	1.00
В7511137	1.90	0.85	0.61
B7511598	1.66	1.40	1.02
B7511186	1.92	1.50	1.10
B7511234	2.22	1.66	1.26
B7511204	2.20	.1.10	0.68

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RESEARCH TEST AND MEASUREMENT REPORT
REPORT# 860972
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ABSTRACT:

Research and Development finds the Trial and Pilot Evaluation of the Model XP-100 .223 REM caliber to be acceptable. However, the following should be investigated, by production:

1. During the Visual inspection all of the pistols were found to have some random spots of glue, and the stock luster was mismatched. More care needs to be taken during the assembly of the stocks.

Prepared by: F.L. SUPRY
Date Prepared: 4/21/86

proofread and cleared by:

J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab

W.H. COLEMAN, II New Products Research Lab Director REP.#860972

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TO: J.R. Snedeker FROM: F.L. Supry

# INTRODUCTION:

On April 07, 1986 a request to conduct a Trial and Pilot Evaluation on the Model XP-100 .223 REM. caliber pistol was received by the Test Lab. The evaluation would use eight guns, withdrawn from the warehouse, and consist of Visual Inspection, and 100 Yard Accuracy.

# SCOPE OF TEST:

To determine if the production run samples meet Remington Specifications set by the Research Design Section.

### TEST RESULTS:

The Model XP-100, chambered in the .223 REM. caliber, was found to be acceptable in all phases of the Trial and Pilot Evaluation.

#### REPORT TEXT:

#### 1. VISUAL INSPECTION:

- A. The visual inspection committee found no major items in the appearance of the pistols inspected.
- B. The following general comments were made in overall reference to the pistols:
  - a. The luster of the pistols needs improvement.
  - b. The removing of the excess glue needs improvement.
- C. The pistols used in the visual inspection were:

B7511233 B7511217 B7511204 B7511234 B7511598 B7511186

D. Comments recorded for each individual pistol are located in the appendix of this report.

#### 2. ACCURACY:

The Remington standard for the XP-100, chambered in the .223 REM caliber is: 3.0 inches in any "around the clock" position from the point of aim, for a five (5) shot group.

A. Eight (8) pistols were tested for 100 yard accuracy.

B7511233 B7511217 B7511204 B7511137 B7511234 B7511598 B7511186 B7511155

B. The following averages were established:

a. Group Size: 1.99 inches

b. Horizontal Spread: 1.42 inches

c. Vertical Spread: 1.51 inches

B. Accuracy results per individual pistol are located in the appendix of this report.

#### TEST PROCEDURE:

#### 1. VISUAL INSPECTION:

- A. The Visual Inspection Committee consisted of W. Warren, (Q.C.); R. Howe, F. Supry, and T. Douglas, (Research).
- B. Six (6) of the eight (8) pistols were used for the visual inspection.
- C. Each pistol was wiped down with a clean white Coyne towel, and examined by each member of the Visual Inspection Committee. All comments were recorded.

#### 2. ACCURACY:

- A. The accuracy was shot by T. Douglas, J. Ronkainen, and K. Calkins, (Research), at the R & D 100 yard range.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 12X scope.
- C. Remington ammunition, index R223R2; code U08-002301, 55 grain hollow point, was used for the 100 yard accuracy test.
- E. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- F. A total of three (3), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- G. The patterns were analyzed for group size, horizontal spread, and vertical spread, using the HP 9000 computer. The averages were calculated for each pistol.

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#### GENERAL COMMENTS:

The pistols were found to be acceptable; however, more care should be taken during the sanding and the gluing operations.

#### COMMENTS PER INDIVIDUAL RIFLE:

B7511233 Glue marks: bottom of forend and left side diamond.
Bright mar on trigger.
Braze shows through under bolt handle.
Finish varies in luster.

B7511217 Finish varies in luster.

Braze shows through under bolt handle.

White line spacers look dirty.

Forend tip rough at barrel groove.

Diamond cracked, bottom rear of pistol grip.

Random glue marks.

B7511204 Random glue marks.
Upper part of right grip is rough.
Finish varies in luster.

B7511234 Random glue marks.

Barrel grooves are rough.

Mar on bolt handle.

Striations do not meet with the center of the diamond.

B7511598 Several cutter marks on the inside of the receiver.

Left side diamond gouged.

Braze shows through under bolt handle.

Random glue marks.

B7511186 Random glue marks.

Mar bottom rear of bolt.

Burr on bolt handle and bolt lug.

# ACCURACY:

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL (in.)
B7511155	1.49 3.01	1.49 2.02	0.76 2.90
AVERAGE =	$\frac{2.32}{2.27}$	1.51	1.78
B7511217	1.92 0.97	1.92 0.45	0.73 0.97
AVERAGE =	3.04 1.98	2.64 1.67	2.13
B7511233	2.22 1.72	2.10 1.44	1.45 1.45
AVERAGE =	1.44	$\frac{1.37}{1.64}$	<u>0.67</u> 1.19
B7511137	1.21 1.26	0.76 0.90	1.12 1.13
AVERAGE =	$\frac{3.24}{1.90}$	2.96 1.54	$\frac{1.32}{1.19}$
B7511598	1.44 1.60	1.44 1.55	1.00 0.85
AVERAGE =	1.93 1.66	1.18	$\frac{1.71}{1.19}$
B7511186	1.87 1.85	1.13 1.80	1.68 1.50
AVERAGE =	$\frac{2.03}{1.92}$	0.83 1.25	$\frac{1.86}{1.67}$

ACCURACY: (continued)

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL (in.)
B7511234	1.85 2.56 2.26	0.60 0.74 1.42	1.85 2.52 2.02
AVERAGE =	2.22	0.92	2.13
B7511204	1.72 2.83 2.04	1.11 1.64 1.67	1.32 2.31 1.18
AVERAGE =	2.20	1.47	1.60

# AVERAGE GROUP SPREAD WITH 5, 4 , AND 3 SHOTS

GUN NUMBER	5 SHOT GROUP (in.)	4 SHOT GROUP (in.)	3 SHOT GROUP (in.)
B7511155	2.27	1.41	1.29
B7511217	1.98	1.53	1.14
В7511233	1.79	1.28	1.00
В7511137	1.90	0.85	0.61
B7511598	1.66	1.40	1.02
B7511186	1.92	1.50	1.10
B7511234	2.22	1.66	1.26
B7511204	2.20	1.10	0.68

TEST LAB

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|#8609/2 - 21 AFKIL 00 |XP-100 .223 REM |TRIAL & PILOT



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B7511233 B7511217 B7511204 B7511137 B7511234 B7511598 B7511186 B7511155

- B. The following averages were established:
  - a. Group Size: 1.99 inches
  - b. Horizontal Spread: 1.42 inches
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- B. Accuracy results per individual pistol are located in the appendix of this report.

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Bright mar on trigger.
Braze shows through under bolt handle.

Finish varies in luster.

B7511217 Finish varies in luster.

Braze shows through under bolt handle.

White line spacers look dirty. Forend tip rough at barrel groove.

Diamond cracked, bottom rear of pistol grip.

Random glue marks.

B7511204 Random glue marks.

Upper part of right grip is rough.

Finish varies in luster.

B7511234 Random glue marks.

Barrel grooves are rough.

Mar on bolt handle.

Striations do not meet with the center of the diamond.

B7511598 Several cutter marks on the inside of the receiver.

Left side diamond gouged.

Braze shows through under bolt handle.

Random glue marks.

B7511186 Random glue marks.

Mar bottom rear of bolt.

Burr on bolt handle and bolt lug.

ACCURACY:

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAI
B7511155	1.49	1.49	0.76
	3.01	2.02	2.90
	2.32	1.51	1.78
AVERAGE =	2.32	1.67	1.81
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	0.97	0.45	0.97
AVERAGE =	3.04 1.98	$\frac{2.64}{1.67}$	2.13 1.28
B7511233	2.22	2.10	1.45
	1.72	1.44	1.45
AVERAGE =	1.44 1.79	1.37	0.67
B7511137	1.21	0.76	1.12
	1.26	0.90	1.13
AVERAGE =	3.24	2.96 1.54	1.32
B7511598	1.44	1.44	1.00
	1.60	1.55	0.85
AVERAGE =	1.93	1.18	1.71 1.19
B7511186	1.87	1.13	1.68
	1.85	1.80	1.50
AVERAGE =	2.03	0.83	1.86
	1.92	1.25	1.67

ACCURACY:

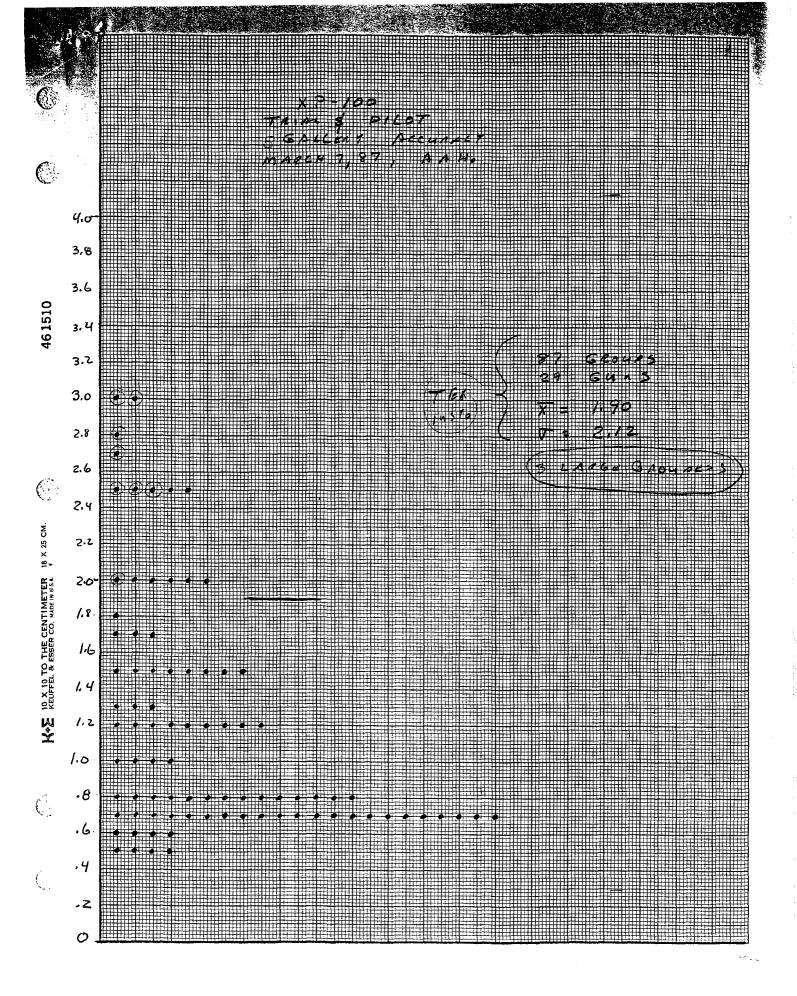
(continued)

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL (in.)
B7511234	1.85 2.56	0.60 0.74	1.85 2.52
AVERAGE =	2.26	$\frac{1.42}{0.92}$	$\frac{2.02}{2.13}$
B7511204	1.72 2.83	1.11	1.32 2.31
AVERAGE =	2.04	$\frac{1.67}{1.47}$	$\frac{1.18}{1.60}$

# AVERAGE GROUP SPREAD WITH 5, 4 , AND 3 SHOTS

GUN NUMBER	5 SHOT GROUP (in.)	4 SHOT GROUP (in.)	3 SHOT GROUP (in.)
B7511155	2.27	1.41	1.29
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B7511598	1.66	1.40	1.02
B7511186	1.92	1.50	1.10
B7511234	2.22	1.66	1.26
B7511204	2.20	1.10	0.68



SEGRINO SPECTAL TEST REPORT

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# REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington.

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"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

cc: W.H. (Coleman, II/File

J.W. Bower

J.G. Hill

J.R. Snedeker

F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT REPORT# 860972
APRIL 21,1986

MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

## MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

#### ABSTRACT:

Research and Development finds the Trial and Pilot Evaluation of the Model XP-100 .223 REM caliber to be acceptable. However, the following should be investigated, by production:

1. During the Visual inspection all of the pistols were found to have some random spots of glue, and the stock luster was mismatched. More care needs to be taken during the assembly of the stocks.

Prepared by: F.L. SUPRY
Date Prepared: 4/21/86

proofread and cleared by:

J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab

W.H. COLEMAN, II New Products Research Lab Director

**CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER** 

KINZER V. REMINGTON

REP.#860972

W.O.# 925C0805

MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

TO: J.R. Snedeker FROM: F.L. Supry

#### INTRODUCTION:

On April 07, 1986 a request to conduct a Trial and Pilot Evaluation on the Model XP-100 .223 REM. caliber pistol was received by the Test Lab. The evaluation would use eight guns, withdrawn from the warehouse, and consist of Visual Inspection, and 100 Yard Accuracy.

SCOPE OF TEST:

To determine if the production run samples meet Remington Specifications set by the Research Design Section.

TEST RESULTS:

The Model XP-100, chambered in the .223 REM. caliber, was found to be acceptable in all phases of the Trial and Pilot Evaluation.

#### REPORT TEXT:

#### 1. VISUAL INSPECTION:

- A. The visual inspection committee found no major items in the appearance of the pistols inspected.
- B. The following general comments were made in overall reference to the pistols:
  - a. The luster of the pistols needs improvement.
  - b. The removing of the excess glue needs improvement.
- C. The pistols used in the visual inspection were:

B7511233 B7511217 B7511204 B7511234 B7511598 B7511186

D. Comments recorded for each individual pistol are located in the appendix of this report.

# 2. ACCURACY:

The Remington standard for the XP-100, chambered in the .223 REM caliber is an extreme Group Size of: 3.0 inches for a five (5) shot group.

A. Eight (8) pistols were tested for 100 yard accuracy.

B7511233 B7511217 B7511204 B7511137 B7511234 B7511598 B7511186 B7511155

- B. The following averages were established:
  - a. Group Size: 1.99 inches
  - b. Horizontal Spread: 1.42 inches
  - c. Vertical Spread: 1.51 inches
- B. Accuracy results per individual pistol are located in the appendix of this report.

#### TEST PROCEDURE:

#### 1. VISUAL INSPECTION:

- A. The Visual Inspection Committee consisted of W. Warren, (Q.C.); R. Howe, F. Supry, and T. Douglas, (Research).
- B. Six (6) of the eight (8) pistols were used for the visual inspection.
- C. Each pistol was wiped down with a clean white Coyne towel, and examined by each member of the Visual Inspection Committee. All comments were recorded.

#### 2. ACCURACY:

- A. The accuracy was shot by T. Douglas, J. Ronkainen, and K. Calkins, (Research), at the R & D 100 yard range.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 12X scope.
- C. Remington ammunition, index R223R2; code U08-002301, 55 grain hollow point, was used for the 100 yard accuracy test.
- E. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- F. A total of three (3), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- G. The patterns were analyzed for group size, horizontal spread, and vertical spread, using the HP 9000 computer. The averages were calculated for each pistol.

# VISUAL INSPECTION:

## GENERAL COMMENTS:

The pistols were found to be acceptable; however, more care should be taken during the sanding and the gluing operations.

## COMMENTS PER INDIVIDUAL RIFLE:

B7511233	Glue marks: bottom of forend and left side diamond. Bright mar on trigger. Braze shows through under bolt handle. Finish varies in luster.
В7511217	Finish varies in luster. Braze shows through under bolt handle. White line spacers look dirty. Forend tip rough at barrel groove. Diamond cracked, bottom rear of pistol grip. Random glue marks.
B7511204	Random glue marks. Upper part of right grip is rough. Finish varies in luster.
в7511234	Random glue marks. Barrel grooves are rough. Mar on bolt handle. Striations do not meet with the center of the diamond.
в7511598	Several cutter marks on the inside of the receiver. Left side diamond gouged. Braze shows through under bolt handle. Random glue marks.
в7511186	Random glue marks. Mar bottom rear of bolt. Burr on bolt handle and bolt lug.

# ACCURACY:

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL (in.)
В7511155	1.49 3.01 2.32	1.49 2.02 1.51	0.76 2.90 
AVERAGE =	2.32	1.67	1.81
B7511217	1.92 0.97	1.92 0.45	0.73 0.97
AVERAGE =	3.04 1.98	$\frac{2.64}{1.67}$	<u>2.13</u> 1.28
B7511233	2.22 1.72	2.10 1.44	1.45 1.45
AVERAGE =	1.44	$\frac{1.37}{1.64}$	<u>0.67</u> 1.19
В7511137	1.21 1.26	0.76 0.90	1.12 1.13
AVERAGE =	$\frac{3.24}{1.90}$	2.96 1.54	1.32
B7511598	1.44 1.60	1.44 1.55	1.00 0.85
AVERAGE =	$\frac{1.93}{1.66}$	1.18	1.71
B7511186	1.87 1.85	1.13 1.80	1.68 1.50
AVERAGE =	$\frac{2.03}{1.92}$	$\frac{0.83}{1.25}$	$\frac{1.86}{1.67}$

ACCURACY: (continued)

# ACCURACY PER INDIVIDUAL RIFLE:

SERIAL#	GROUP SIZE (in.)	HORIZONTAL (in.)	VERTICAL (in.)
B7511234	1.85 2.56 2.26	0.60 0.74 1.42	1.85 2.52 2.02
AVERAGE =	2.22	0.92	2.13
в7511204	1.72 2.83 2.04	1.11 1.64 1.67	1.32 2.31 1.18
AVERAGE =	$\frac{2.04}{2.20}$	1.47	1.60

# AVERAGE GROUP SPREAD WITH 5, 4 , AND 3 SHOTS

GUN NUMBER	5 SHOT GROUP (in.)	4 SHOT GROUP (in.)	3 SHOT GROUP (in.)
в7511155	2.27	1.41	1.29
В7511217	1.98	1.53	1.14
В7511233	1.79	1.28	1.00
В7511137	1.90	0.85	0.61
в7511598	1.66	1.40	1.02
В7511186	1.92	1.50	1.10
B7511234	2.22	1.66	1.26
B7511204	2.20	1.10	0.68

Xc: W.H. Coleman, II

J.W. Bower T.C. Douglas

File

# XP-100 CALIBER 223 REM. BOLT ACTION PISTOL

## DESIGN CONFIRMATION TEST REPORT

## Introduction

Ten Model XP-100 caliber 223 Rem. single shot bolt action pistols were fabricated for Research design confirmation test. All component gun parts in these design test pistols originated from Ilion production XP-100 parts. Only the chambers, barrel outside contours, and barrel surface finishes were not produced by Ilion production facilities. The 223 Rem. offering will add one more caliber to the existent XP-100 product line.

# Test Conclusion - Results

The XP-100 caliber 223 Rem. single shot bolt action pistol design confirmation test results met accuracy, endurance, and functional criteria. The XP-100 223 Rem. parts list and model drawings were transmitted September 30, 1985.

# Test Data - Comments:

## A. Accuracy

Five of the test pistols were made with 12 inch twist barrels and five were made with 14 inch twist barrels. This was included in this XP-100 pistol design test due to Remington producing 223 Rem. rifles with both twist and now the 223 Rem. centerfire cartridge is to be considered for the XP-100 pistol as a varmint cartridge. Accuracy testing results are as follows:

1. Plant range and plant gallery accuracy test device data for 5 shot groups: average = 3.75, min = 0.35, max = 8.8 inches. This data indicates plant gallery test problems when compared to Research hand fired results. 1983 XP-100 caliber 223 Rem. test data also indicates larger group sizes when fired from the gallery device.

- 2. Research hand fired 100 yard range data:
  - a. 5 shot groups, 2 groups per gun with a 12x scope.
  - 12 inch twist data:
  - avg. = 1.72, sigma = 0.55, avg. + 3 sigma = 3.37
  - 14 inch twist data:
  - avg. = 1.58, sigma = 0.34, avg. + 3 sigma = 2.68
  - b. Best 4 shots in 5 shot group data-
  - 12 inch twist data:
  - avg. = 1.14, sigma = 0.47, avg. + 3 sigma = 2.55.
  - 14 inch twist data:
  - Avg. = 0.98, sigma = 0.30, avg. + 3 sigma = 1.88.
  - c. Best 3 shots in 5 shot group data
  - 12 inch twist data:
  - avg. = 0.67, sigma = 0.24, avg. + 3 sigma = 1.48
  - 14 inch twist data:
  - avg. = 0.64, sigma = 0.13, avg. + 3 sigma = 1.03.
- 3. Based on Research hand fired XP-100 yard data the following accuracy specs. are proposed:
  - a. 5 shots group size to be 3.0 inches.
  - b. 4 shots group size to be 2.0 inches.
  - c. 3 shots group size to be 1.0 inches.

# B. Endurance

Consisted of firing test gun B7512507, held in a soft mount fixture, a total of 1100 fired rounds.

- 1. No malfunctions were encountered.
- 2. No breakages were encountered.
- 3. One adjustment was required.

The bolt stop pivot pin fell out due to lack of stake at assembly.

# C. Functional Performance

The functional performance indicated no extraction, ejection, loading or firing related malfunctions were encountered while firing endurance and accuracy testing of the ten XP-100 design confirmation test pistols.

# D. Additional Items

Additional items related to the XP-100 Pistol and the 223 Rem. cartridge program are as follows:

1985 sports writer samples for review.

XP-100 Zytel stock color variations.

223 Rem. vs. 5.56mm chambers.

- 1. The 1985 Sports Writer acceptance of the XP-100 caliber 223 Rem. was well received, guns performed well, and guns looked good.
- 2. XP-100 Zytel stock color variations consisted of sending one black stock with the sport writer's gun sample. As of this date no word has been received related to interest or disinterest in a black color XP-100 Zytel stocks.
- 3. 223 Rem. vs. 5.56mm chambers testing consisted of shooting 100 yard accuracy with one 12 inch twist and one 14 inch twist with the 223 Rem. chamber, recut the 223 Rem. chamber throating to that of 5.56mm, and reshooting accuracy. The accuracy results are as follows:
  - a. 5 shot groups, 6 groups per gun with 12x scope. 12 inch twist data, 223 Rem.

ave. = 1.62, sigma = 0.24, ave + 3 sigma = 2.34

14 inch twist data, 223 Rem.

ave. = 1.84, sigma = 0.27, ave + 3 sigma = 2.65

12 inch twist data, 5.56mm

ave. = 2.05, sigma = 0.31, ave + 3 sigma = 2.98

14 inch twist data, 5.56mm

ave. = 1.98, sigma = 0.53, ave. + 3 sigma = 3.57

- E. A Remington employee aided testing with firing his XP-100 223 Rem. pistol for group size with lab test ammo. The XP-100 was fabricated a while back in the Custom Shop. XP-100 pistol -RPLHP-5 shot groups @ 100 yards was 0.73 in. ave for 3 groups.
- F. Future work related to XP-100 pistol product line development includes the following item activity:
  - 1. Investigate the feasibility of powder coating the present Zytel stock for color variations and surface texture variations. (1986)
  - 2. Investigate the feasibility of molding the stock out of ST801 (Super Tough 801) instead of with 101 Zytel, which is prone to cracking and additional machine operations require annealing for 1.5 hours in boiling water. ST801 may not require this anneal operation. (1986).
  - 3. Determine endurance feasibility of the current production Zytel stock with a caliber 35 Rem. pistol. If endurance results are acceptable, this may warrant Zytel stock mold cavity change considerations/review such as to accommodate a larger barrel channel required for 35 Rem. barrel dimensions. (1987)
  - 4. Investigate the feasibility of purchasing vendor XP-100 stocks for 35 Rem. caliber pistols. Stocks would be of the nonbedding stock variety. (1987)
  - 5. Investigate other pistol or centerfire rifle cartridges considerations for the XP-100 product line. (250 Savage 1988), 17 Rem. -1989).
  - 6. Investigate the feasibility of interchanging barrels on the XP-100. (1986+)

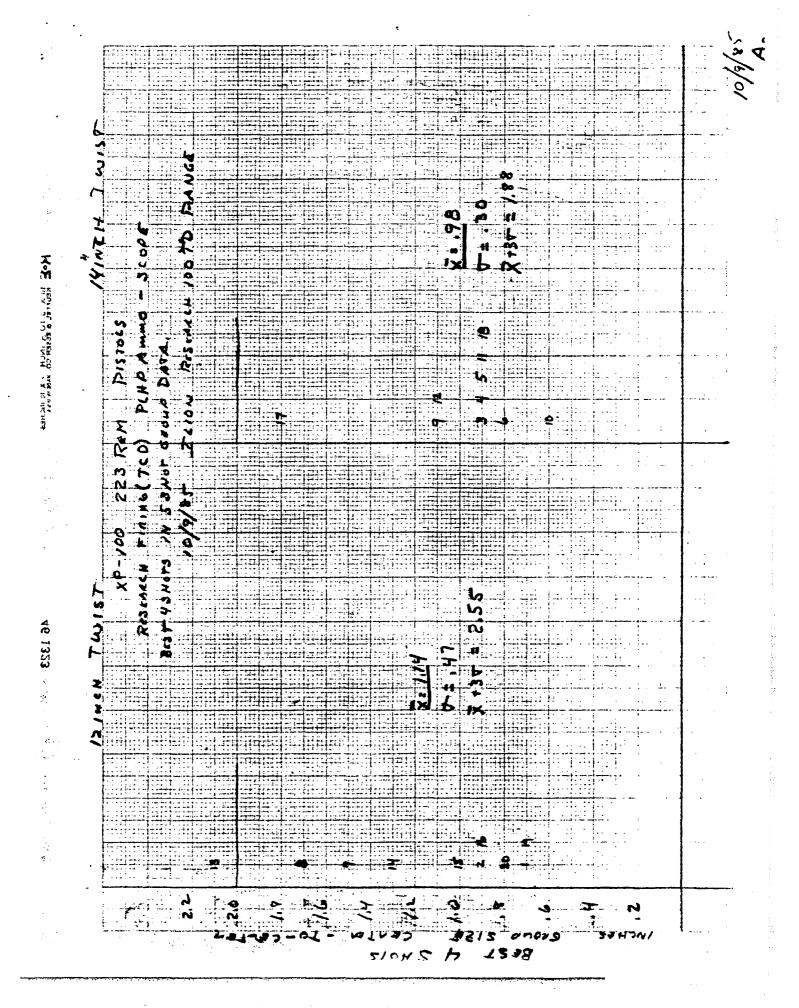
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# REMINGTON ARMS COMPANY, INC.

inter-departmental correspondence

Distribution: C. B. Workman

C. E. Ritchie

Remington

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"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

RESEARCH TEST and MEASUREMENT REPORT - Report No. 832091

PRODUCTION MODEL XP-100 - 7MM BR - 1000 ROUND ENDURANCE TEST

Prepared by: R. W

R. W. Howe

Date Prepared: August 18, 1983

Propiread and Ceared By:

J.H. Hennings ,

R.E. Michaincale.

Foreman-Test Lab Foreman-Measurement Lab

Signature

Liare

C.E. Rimhia.

Sr. Supervisor - Testing,

Meas, & Mech. Analysis Lab

Signature

Dara

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER KINZER V. REMINGTON

- 0-44-B

# REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remisetos.

PETER

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_

cc: W.H. Coleman, II/File

J.W. Bower

J.G. H111

J.R. Smedeker

F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT REPORT≠ 860972

MODEL XP-100 .223 REM. CALIBER TRIAL AND FILOT EVALUATION

#### MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

ABSTRACT:

Research and Development finds the Trial and Pilot Evaluation of the Model XP-100 .223 REM caliber to be acceptable. However, the following should be investigated, by production:

1. During the Visual inspection all of the pistols were found to have some random spots of glue, and the stock luster was mismatched. More care needs to be taken during the assembly of the stocks.

Prepared by: F.L. SUPRY
Date Prepared: 4/18/86

proofresd and cleared by:	
J.R. SHEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab	
W.E. COLEMAN, II New Products Research Lab Director	

REP.#860972

W.O.# 925C0805

## MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

TO: J.R. Snedeker FROM: F.L. Supry

#### INTRODUCTION:

On April 07, 1986 a request to conduct a Trial and Pilot Evaluation on the Model XP-100 .223 REM. caliber pistol was received by the Test Lab. The evaluation would use eight guns, withdrawn from the warehouse, and consist of Visual Inspection, and 100 Yard Accuracy.

#### SCOPE OF TEST:

To determine if the production run samples meet Remington Specifications set by the Research Design Section.

#### TEST RESULTS:

The Hodel XP-100, chambered in the .223 REM. caliber, was found to be acceptable in all phases of the Trial and Pilot Evaluation.

#### REPORT TEXT:

#### 1. VISUAL INSPECTION:

- A. The visual inspection committee found no major items in the appearance of the pistols inspected.
- B. The following general comments were made in overall reference to the pistols:
  - a. The luster of the pistols needs improvement.
  - b. The removing of the excess glue needs improvement.
- C. The pistols used in the visual inspection were:

B7511233 B7511217 B7511204 B7511234 B7511598 B7511186

D. Comments recorded for each individual pistol are located in the appendix of this report.

#### 2. ACCURACT:

A. Eight (8) pistols were tested for 100 yard accuracy.

B7511233 B7511217 B7511204 B7511137 B7511234 B7511598 B7511186 B7511155

B. The following averages were established:

a. Group Size: 1.99 inches

b. Horizontal Spread: 1.42 inches

c. Vertical Spread: 1.51 inches

B. Accuracy results per individual pistol are located in the appendix of this report.

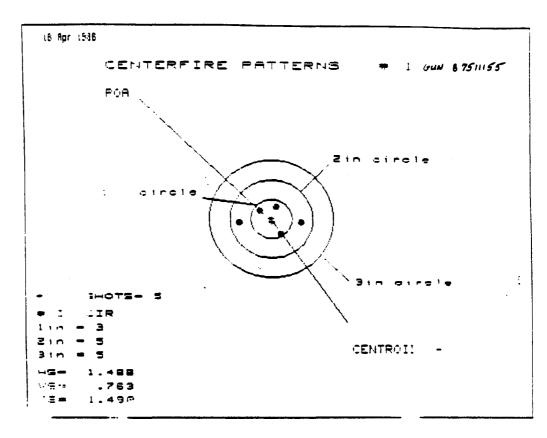
#### TEST PROCEDURE:

#### 1. VISUAL INSPECTION:

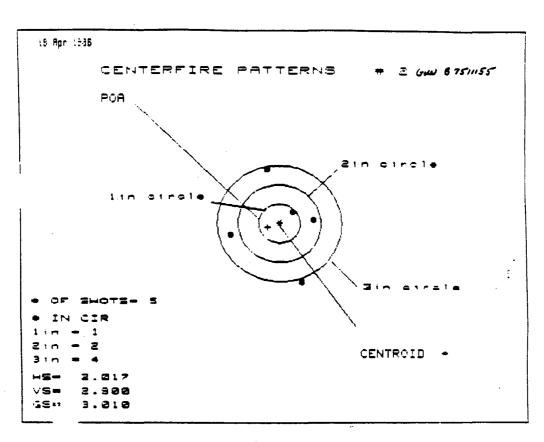
- A. The Visual Inspection Committee consisted of W. Warren, (Q.C.); R. Howe, F. Supry, and T. Douglas, (Research).
- B. Six (6) of the eight (8) pistols were used for the visual inspection.
- C. Each pistol was wiped down with a clean white Coyne towel, and examined by each member of the Visual Inspection Committee. All comments were recorded.
- D. Following the visual inspection, headspace and trigger pull measurements were taken on all eight pistols.

#### 2. ACCURACY:

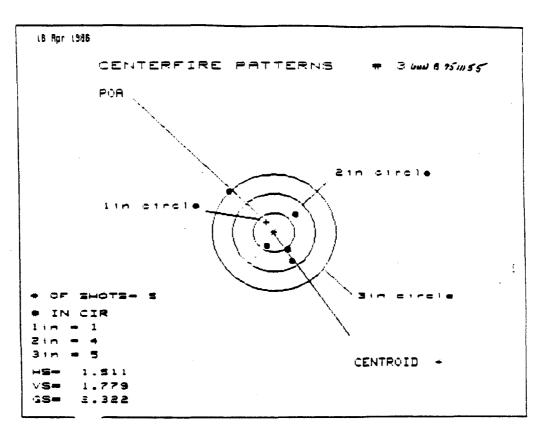
- A. The accuracy was shot by T. Douglas, J. Ronkeinen, and R. Calkins, (Research), at the R & D 100 yard range.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 12X scope.
- C. Remington assumition, index R223R2; code UO8-002301, 55 grain hollow point, was used for the 100 yard accuracy test.
- E. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- F. A total of three (3), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- G. The patterns were analysed for group size, horizontal spread, and vertical spread, using the HP 9000 computer. The averages were calculated for each pistol.



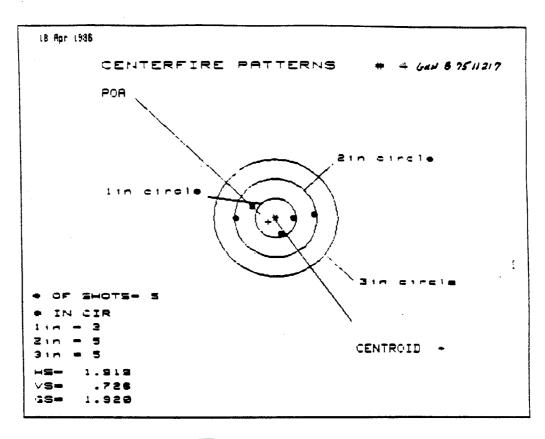
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MAX PADIUS	i	. 796	. 528	. 499
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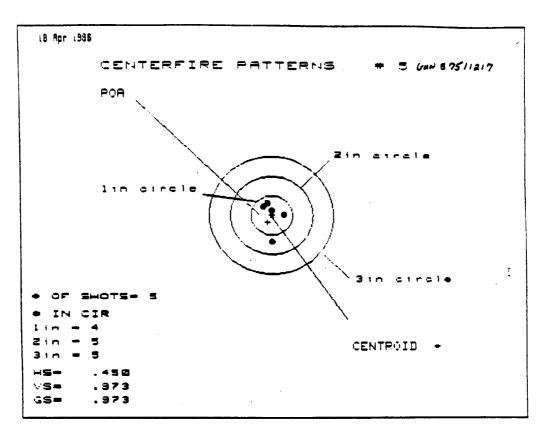
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MINIMUM Y	's	-1.500	638	289
CENTROID X	:	. 287	. 167	. 234
CENTROID Y		. 896	.471	. 130
POR TO CENTROID in	1. 1	. 303	. 500	. 267
MIN PADIUS		. 382	. 396	. 399
MEAN PADIUS	1	1.888	.918	. 317
MAX RADIUS	1	1.576	1.267	1.292
HORIZONTAL SPREAD	1	2.017	2.917	2.817
VERTICAL SPREAD		2.900	1.655	. 532
EXTREME SPREAD		3.010	2.045	2.945
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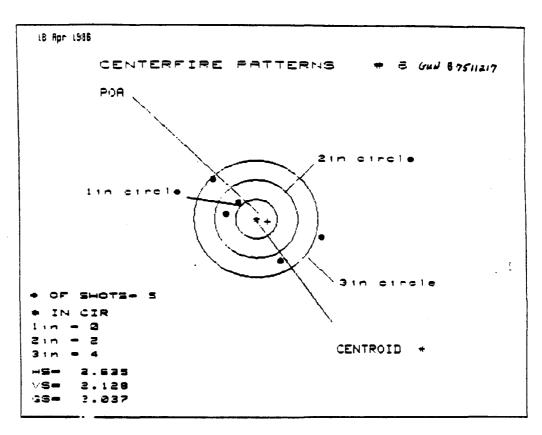
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CENTROID Y			268	536	390
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MIN RADIUS	:		. 381	. 192	. 346
MEAN RADIUS			.778	. 459	. 464
MAX PADIUS			1.492	.739	. 627
HORIZONTAL SPREAT			1.511	. 633	. 633
VERTICAL SPREAT	•		1.779	1.145	. 299
EXTREME SPREAT			2.322	1.145	1.008
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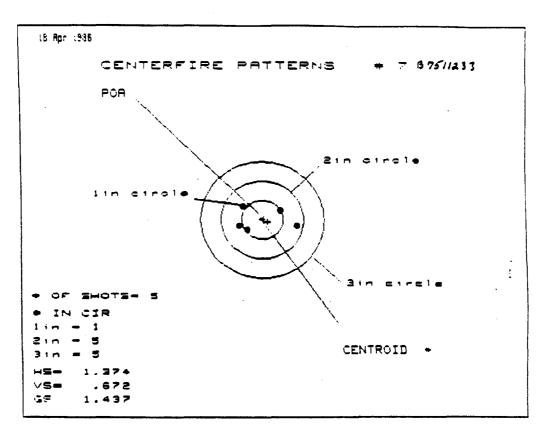
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MINIMUM X			968	728	579
MAXINUM Y	1		. 308	. 332	. 356
MINIMUM Y			418	394	370
CENTROID X			.177	863	.177
CENTROID Y			. 899	. 975	. 051
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MIN RADIUS			.414	. 475	. 486
MERN RADIUS	•		. 689	.684	. 499
MAX RADIUS	i		.964	.724	. 680
HORIZONTAL SPREAD	·		1.919	1.372	.991
VERTICAL SPREAD	:		.726	.726	.726
EXTREME SPREAD	:		1.929	1.374	1.848
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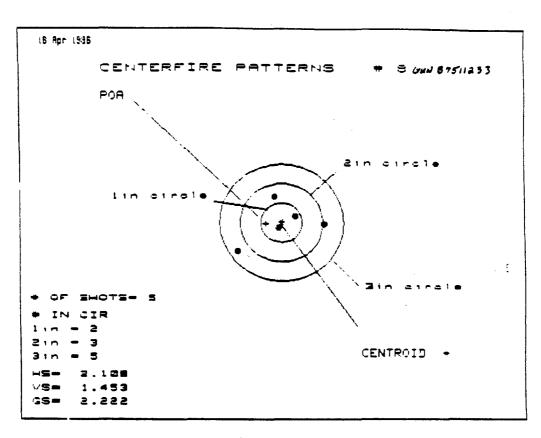
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SHOTS (BEST OF)	1	5	4	3
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MINIMUM X	1	162	173	197
MAXIMUM Y	1	.317	. 153	.124
MINIMUM Y	1	656	165	115
CENTROID X	:	.187	.118	.142
CENTROID Y	1	.174	. 338	. 298
POR TO CENTROID 1	1. :	. 205	. 358	. 321
MIN PADIUS		. 196	. 069	. 057
MEAN RADIUS	:	. 332	. 187	. 189
MAX PADIUS		. 658	. 323	. 278
HORIZONTAL SPREAD	:	. 450	. 450	. 450
VERTICAL SPREAD	1	.973	. 318	. 239
EXTPEME SPREAD	2	. 973	.510	.510
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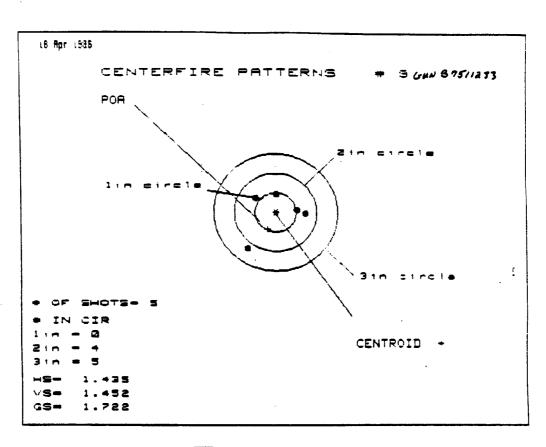
PATTERH .	1			
SHOTS (BEST OF)	1	5	4	3
MAXINUM X		1.592	1.011	.796
MINIMUM X	1	-1.043	645	556
MAXIMUM Y	:	1.916	. 892	. 621
MINIMUM Y	:	-1.112	-1.236	938
CENTROID X		266	663	-,448
CENTROID Y		. 069	. 193	185
POR TO CENTROLD I	n. :	. 274	. 691	. 460
MIN RADIUS	1	.616	. 324	. 640
MEAN RADIUS	i	1.152	. 841	.845
MAX RADIUS	- 1	1.667	1.597	1.231
HORIZONTAL SPREAT	1 .	2.635	1.657	1.352
VERTICAL SPREAD	-	2.128	2,128	1.559
EXTREME SPREAT		3.037	2.697	1.972
		CIRCLE =	4	
		CIRCLE =	•	
		CIRCLE =	7	
HALLARY TH LUKER	Hen	CIKCLE =	-	



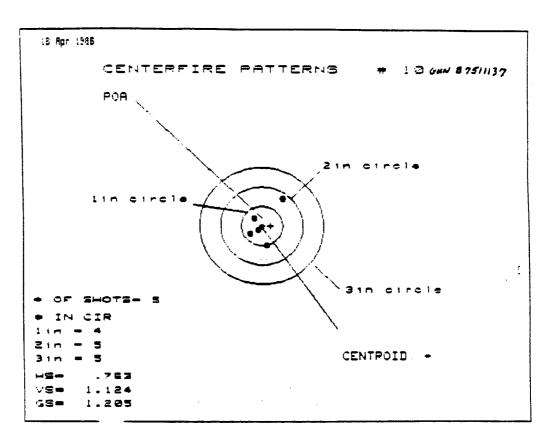
PATTERN .	1	•			
SHOTS (BEST OF)	2		5	4	3
MAXIMUM X	1		. 851	. 690	. 682
MINIMUM X			523	318	398
MAXIMUM Y			. 378	. 335	.317
MINIMUM Y			-, 294	338	226
CENTROID X	:		128	341	253
CENTROID Y	:		. 855	. 899	013
POR TO CENTROID	inis		. 139	. 355	. 254
MIN RADIUS			. 442	. 357	. 305
MEAN RADIUS			. 601	. 468	. 465
MAX PADIUS			. 869	.729	. 681
HORIZONTAL SPREA	AD :		1.374	1.880	1.000
VERTICAL SPREE	AD :		. 672	. 672	. 543
EXTREME SPREE	AD :		1.437	1.088	1.888
NUMBER IN ONE	IHCH	CIR		1	
NUMBER IN THO		CIRCLE		5	
NUMBER IN THREE		CIRCLE	±	Š	



PATTERN 8				
SHOTS (BEST OF)	1	5	4	3
MAXIMUM X	1	1.052	.787	. 337
MINIMUM X		-1.856	488	-, 226
T HUMIKAN	t	. 696	. 586	. 425
MINIMUM Y		757	-,268	350
CENTROID X		. 376	. 648	.378
CENTROID Y	· :	. 828	.217	. 299
POR TO CENTROID i	n. i	. 377	. 676	. 482
MIN PADIUS	1	. 135	. 075	. 345
MEAN PADIUS	1	.722	.516	. 398
MAX RADIUS	1	1.388	. 824	. 482
HORIZONTAL SPREAD	1	2.108	1.276	. 563
VERTICAL SPREAD		1.453	.775	.775
EXTREME SPREAD	-	2.222	1.480	.783
	HCH CIR		2	,,,,,,
	HCH CIR		3	
	NCH CIR		5	

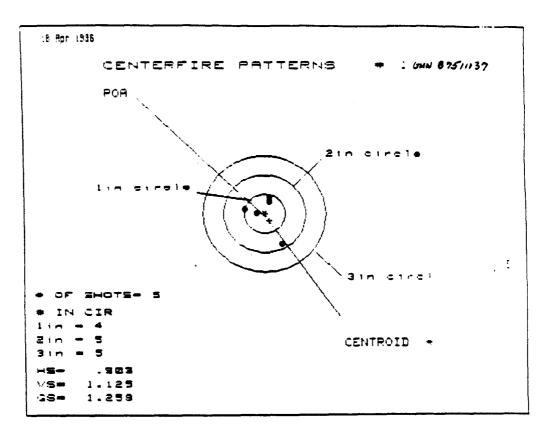


PATTERN .	1				
SHOTS (BEST OF)			5	4	3 .
HAXIMUM X			.788	.517	. 537
MININUM X	ŧ		735	6 <b>96</b>	524
MAXIMUM Y	1		. 505	. 268	. 191
HINIHUM Y	1		947	232	292
CENTROID X			. 192	. 375	. 263
CENTROID Y			. 430	. 667	,744
POR TO CENTROID 1	n. i		. 471	. 765	.771
MIN RADIUS			. 505	. 326	. 191
MEAN RADIUS	1		.722	. 509	. 445
MAX PADIUS			1.199	.719	.611
HORIZONTAL SPREAD			1.435	1.213	1.961
VERTICAL SPREAD			1.452	. 586	, 483
EXTREME SPREAD	-		1.722	1.288	1,131
NUMBER IN ONE I	NCH	CIRCLE		B	
	NCH	CIRCLE	-	Ž.	
	NCH	CIRCLE	_	Š	
		~	-	•	

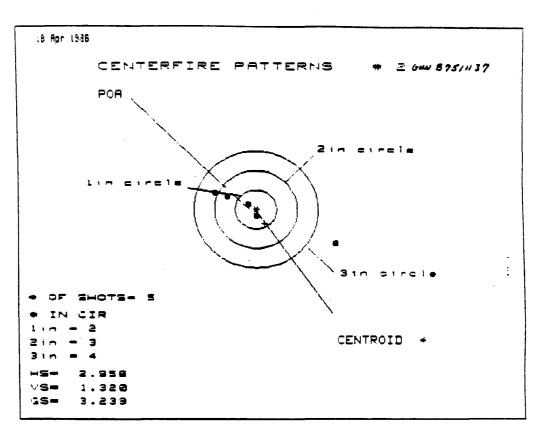


PATTERN .				
SHOTS (BEST OF)		,	4	3
MAXIMUM X	1	. 499	. 191	. 093
MINIMUM X		264	139	076
MACCIMUM 7	1	. 656	. 359	. 258
MINIMUM		468	304	180
CENTROID K	1	286	331	394
CENTROID Y	1	9.000	164	063
POR TO CENTROID	in. i	. 206	. 369	. 399
MIN RABIUS	1	.169	. 038	. 121
MEAN PADIUS	÷	. 422	. 231	.192
MAX PADIUS		.824	. 368	. 258
HOPI TAL SPREA	n :	.763	. 330	. 169
VERTICAL SPREA		1.124	, 663	.438
EXTREME SPREA		1.285	.717	.442
	INCH CIP		4	
	INCH CIR		-	
			-	
NUMBER IN THREE	INCH CIR	<b>.</b>	7	

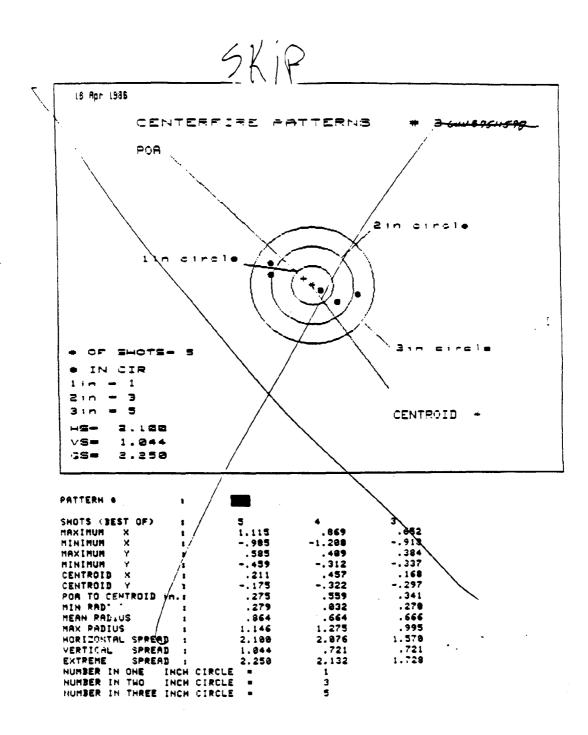
## Greup 2

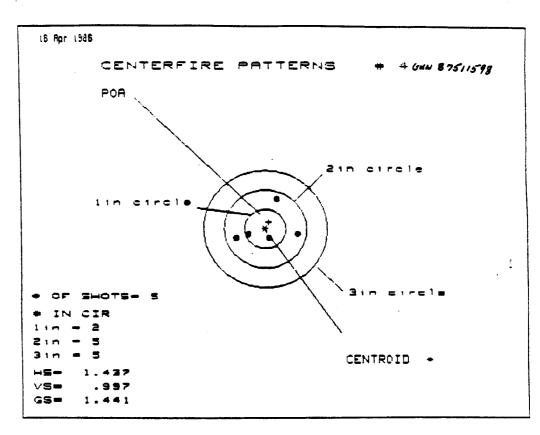


	PATTERN *			1			
	SHOTS (BEST	(OF)	1		5	4	3
	MAXIMUM >	<	1		. 439	. 256	. 138
٠	MINIMUM >	<	1		464	354	-,247
	MALLIAM '	1			. 369	. 180	. 156
	MUMINIM	1			756	190	213
	HTROID		1		189	219	181
	ENTROID	· ·			.182	. 371	. 395
	POR TO CENT	TROID 1	n. i		.213	. 431	. 407
	MIN PADIUS		1		. 239	. 229	. 122
	MEAN RADIU	S	,		. 456	. 286	.219
	MAX PADIUS	•	•		.875	. 361	. 326
	HORIT "TAL	SPPEAL	1 .		. 983	.616	. 385
	VERT. HL	PREP			1.125	.369	
	EXTREME	PREAL			1.258	. 659	
				CIRCLE		1	
				CIRCLE	•	•	
				CIRCLE	-	÷	
	HUHBER IN	INKEE		CIKCEE	-		

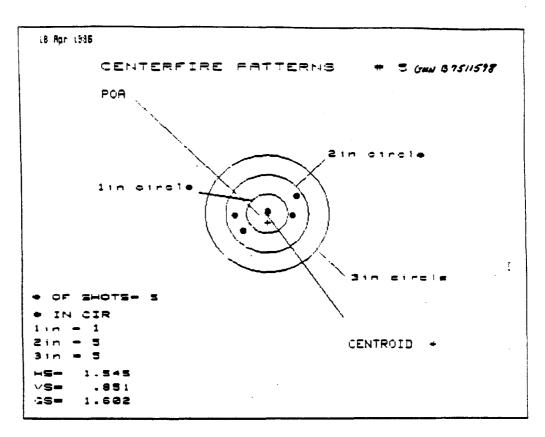


PATTERN # :			
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	1.939	.460	. 282
MINIMUM X :	-1.819	534	384
HAXIMUM Y :	.481	. 271	. 246
MINIMUM Y s	839	363	273
CENTROID X :	286	691	513
CENTROID Y :	. 362	. 572	. 482
POR TO CENTROID in.:	.417	.897	.784
MIN RADIUS :	. 155	. 258	. 105
MEAN RADIUS :	. 886	. 433	.318
MAX RADIUS :	2.113	. 599	. 456
HORIZONTAL SPREAD :	2.958	. 994	. 666
VERTICAL SPREAD :	1.328	. 634	.519
EXTREME SPREAD :	3.239	1.179	. 844
NUMBER IN ONE INCH	CIRCLE =	2	
NUMBER IN THO INCH		3	
	CIRCLE =	4	

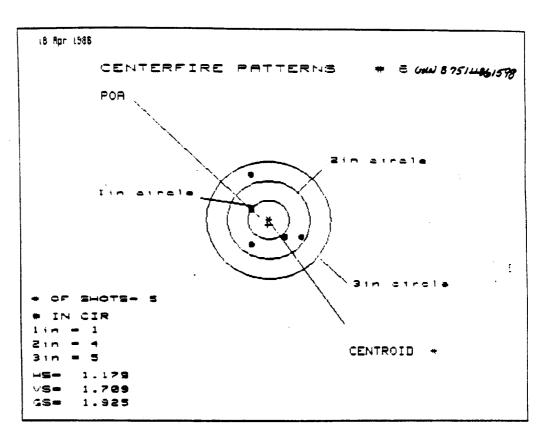




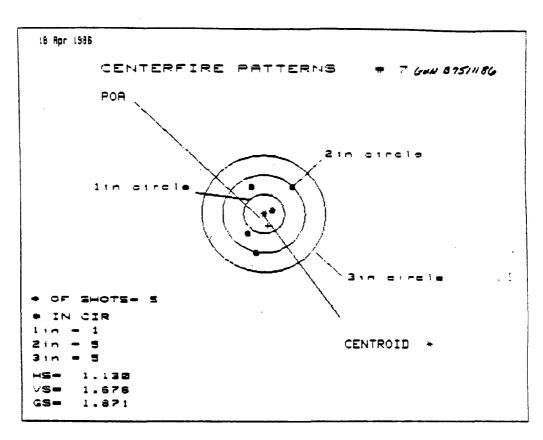
PATTERN #				
SHOTS (BEST OF)		5	4	3 ,
MAXIMUM X	t	.733	.797	. 453
MINIMUM X		784	640	374
MAXIMUM Y	1	.731	. 890	. 844
MINIHUM Y		266	983	853
CENTROIB X	1	879	143	489
CENTROID Y		-, 174	357	387
POR TO CENTROID i	n. 1	. 191	. 385	. 563
MIN RADIUS	1	. 293	. 285	. 298
MEAN RADIUS	i	. 596	.498	. 367
MAX RADIUS		.774	. 882	. 456
HORIZONTAL SPREAD	1 4	1.437	1.437	. 827
VERTICAL SPREAD	•	.997	.173	. 897
EYTREME SPREAT		1.441	1.441	. 829
	NCH CIRC		2	
	NCH CIRC		5	
	HCH CIRC		5	



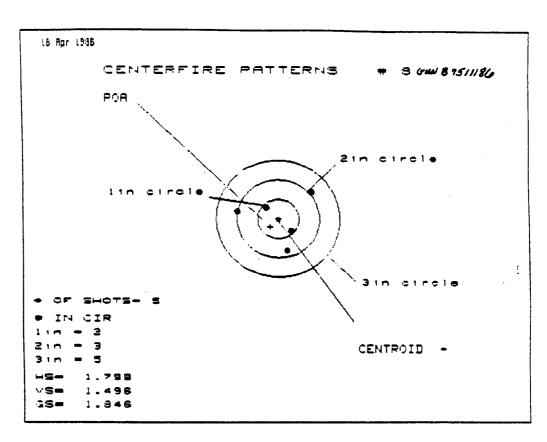
PATTERN .	t			
SHOTS (BEST OF)	1	5	4	3
POSTABLE X		.742	. 791	. 58 <b>5</b>
∤IMUM X		883	618	576
MAXIMUM Y		. 422	. 159	. 194
MININUM Y		-,429	- , 323	288
CENTROID X		887	192	. 814
CENTROID Y	1	. 237	. 131	. 896
POR TO CENTROID I	n. i	. 237	. 233	. 897
MIN RADIUS	2	.854	. 253	. 194
MEAN PADIUS	•	. 604	. 541	.477
MAR PADIUS	1	.853	.793	. 644
HOFIZONTAL SPREAD	•	1,545	1.489	1.161
VERTICAL SPREAD	-	. 851	- 92	. 482
EXTREME SPREAD	•	1.602	1.418	1.222
	-	RCLE =	1	
		RCLE =	į	
	NCH C		Š	
HOUSE IN THEE I	HALL A		_	



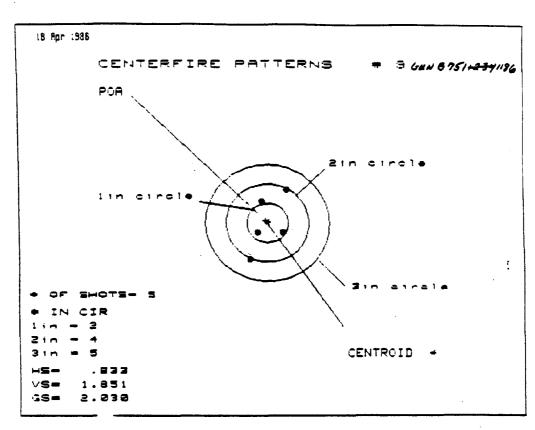
PATTERN .	1			
SHOTS (BEST OF)	1	5	4	3
MAXIMUM X	1	. 786	. 692	.507
· MINIMUM X	1	393	-,488	257
MAXIMUM Y	1	1.129	. 534	. 493
MINIMUM Y	1	589	298	339
CENTROID X	1	. 025	. 126	111
CENTROID Y	t	. 129	153	112
POR TO CENTROID in	n. :	. 132	. 194	. 158
MIN RADIUS	1	.461	. 299	. 425
MEAN RABIUS	1	.756	. 573	. 503
MAX RADIUS	1	1.198	.718	. 553
HORIZONTAL SPREAD		1.179	1.179	.764
VERTICAL SPREAD	1	1.789	. 832	. 832
EXTREME SPREAD		1.925	1.343	. 996
	NCH CIRCLE		1	
	NCH CIRCLE		À	
	NCH CIRCLE		č	
HOUSEN TH LUKEE T	HEN CIRCES	-	3	



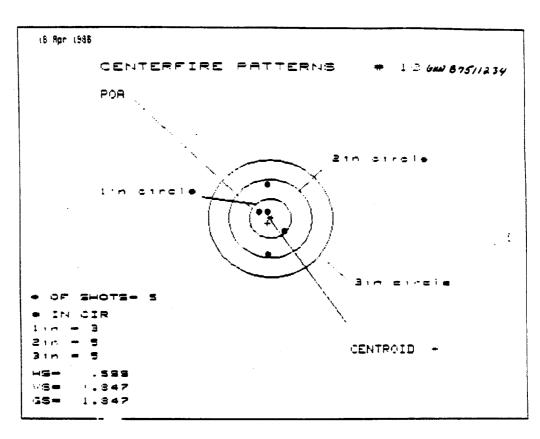
PATTERN	1	1			
SHOTS (BEST OF)	:		5	4	3
MAXIMUM X			.717	. 659	. 363
MINIMUM X			413	471	251
MACIMUM Y			.711	.479	. 685
MINIMUM Y			965	783	567
CENTROID X			894	836	256
CENTROLD Y			. 387	.548	.413
POA O CENTROID	n. i		. 321	. 550	. 486
MIN PADIUS	1		.212	. 225	. 365
ME 4 RADIUS			.718	. 685	. 533
MAX RADIUS	i		. 993	.846	. 628
HORIZONTAL SPREAD	1		1.130	1.130	.614
VERTICAL SPREAD	1		1.676	1.172	1.172
EXTREME SPREAT			1.871	1.583	1.180
		CIRCLE		1	
	-	CIRCLE		Š	
		CIRCLE		5	



PATTERN #	1			
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	1	. 898	. 489	. 227
MINIT M X		991	788	334
Y MUNIXAM	1	. 646	. 486	. 538
MINIMUM Y		850	689	557
CENTROID X	:	. 198	985	. 258
CENTROID Y	i	. 287	. 846	886
POR TO CENTROID	n.:	. 286	. 846	. 272
MIN RADIUS	1	. 367	.412	. 228
MEAN RADIUS	1	.737	.645	. 476
MAX PADIUS		1.035	. 882	. 633
HORIZONTAL SPREAT	) .	1.799	1.278	. 561
VERTICAL SPREAD		1.496	1.095	1.895
EXTREME SPREAT		1.846	1.586	1.181
	NCH CIRCLE		2	
	NCH CIRCLE		3	
	NCH CIRCLE		5	

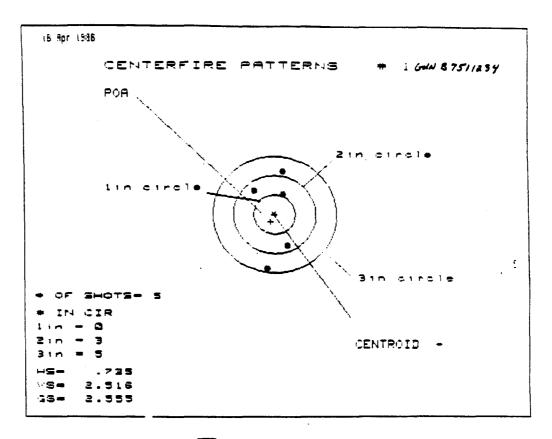


PATTERN .	:				
SHOTS (BEST OF)			5	4	3
MAXIMUM X			. 429	. 328	. 398
MINIMUM X			494	369	251
MAXIMUM Y			. 887	. 646	. 521
MINIMUM Y			964	482	266
CENTROID X	1		. 846	. 147	. 938
CENTROID Y	ı		864	.177	839
POR TO CENTROID :	n. :		.879	. 238	. 854
MIN PADIUS			. 354	. 398	. 366
MEAN RABIUS			. 681	. 569	. 460
MAX RADIUS			1.845	.724	. 541
HORIZONTAL SPREAD	1		. 833	. 688	. 649
VERTICAL SPREAD			1.951	1.128	.797
EXTREME SPREAD			2.838	1.321	.947
NUMBER IN ONE	NCH	CIRCLE		2	
NUMBER IN THO I	NCH	CIRCLE		4	
NUMBER IN THREE I	HCH	CIRCLE		5	

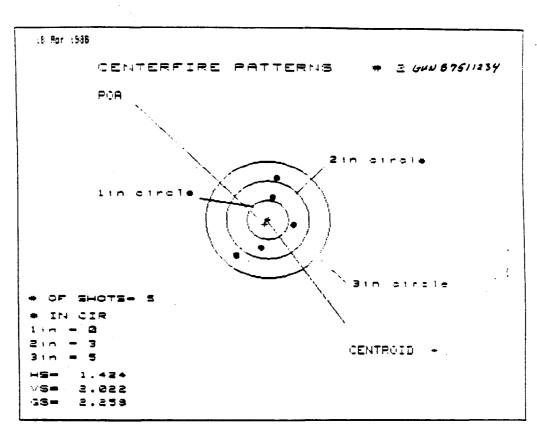


PATTERN .	1				
SHOTS - BEST OF>		•	3	4	3
MAKIMUM K	1		.368	. 362	. 341
MINIMUM X	1	-	. 231	237	258
MAXIMUM 7	1		. 885	. 644	. 185
NINIMUM Y	1		962	-,535	329
CENTROL: //	1		. 972	. 878	. 099
CENTROID Y			.123	. 364	.149
POR TO CENTROID 1	n. i		.143	. 372	.179
MIN RADIUS	:		.179	. 186	. 153
MEAN PADIUS			. 561	. 488	.314
MA. PADIUS			. 963	. 647	. 467
HORIZONTAL SPREAD			. 599	. 599	.599
VERTICAL SEPEAD	•		1.847	1.179	.505
ENTREME SAVEAD	-		1.8	1.254	.733
		CIRCLE		3	
	NCH	CIRCLE		Š	
		CIRCLE	•	5	

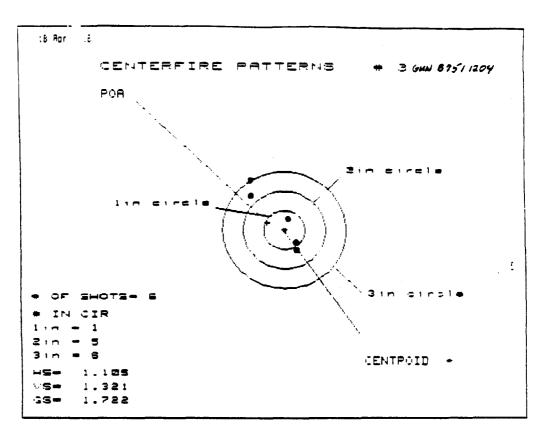
# Set 3



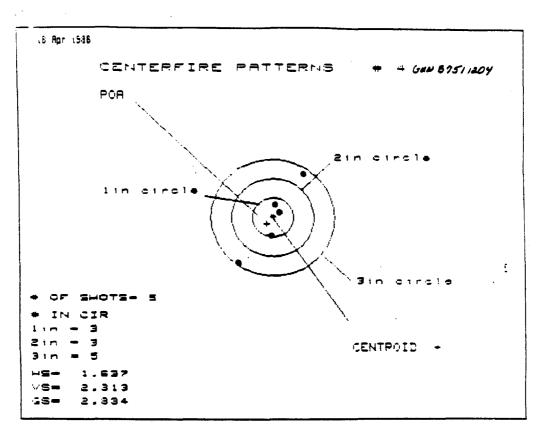
PATTERN .				
SHOTS (BEST OF)	1	5	4	3
MAKIMUM X	1	. 20	53 . 2:	11 .272
'MINIMUM X	1	4	7252	24463
MAXIMUM Y	t	1.8	36 .72	28 .532
MINIMUM Y		-1.4	39 -1.10	54 921
CENTROID X	1	. 10	91 .19	. 092
CENTS ID Y		. 1	85 .54	43 .30 <del>0</del>
POR TO CENTROID in	. :	. 2	. 50	64 .314
MII -DIUS		. 5.	25 .19	95 .433
MERH RADIUS		. 9	48 .6	.708
MAX FADIUS		1.4	45 1.1	960
HORIZONTAL SPREAD	•	.7		
VERTICAL SPREAD	1	2.5		
ELITREME SPREAD	1	2.5		92 1.628
NUMBER IN ONE IN	CH	CIRCLE =	9	
		CIRCLE .	3	
1111	-	CIRCLE -	5	



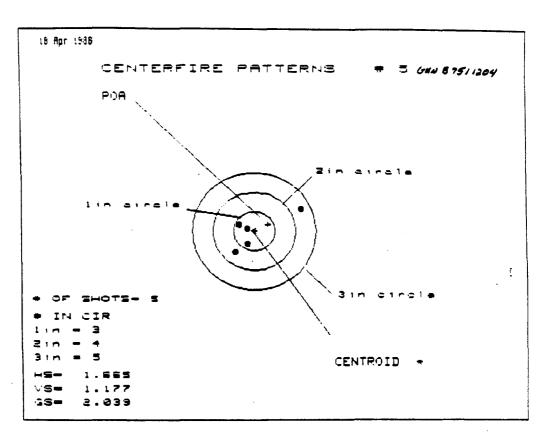
PATTERN .	. 1			
SHOTS (BEST OF)		5	4	3
MAXIMUM X	:	. 626	. 426	.428
MINIMUM X	1	798	388	378
MAXIMUM Y	ŧ	1.120	, 895	. 674
MINIMUM Y	1	902	989	611
CENTROID X	1	. 978	. 278	. 276
CENTROID Y	1	.116	. 341	. 043
POR TO CENTROID :	n. :	. 140	. 448	. 279
MIN PADIUS	:	.619	. 379	. 433
MEAN RADIUS	:	. 862	.785	. 689
MAX PADIUS		1.204	. 985	.718
HORIZONTAL SPREAT	1 :	1.424	. 886	. 306
VERTICAL SPREAM	:	2.822	1.804	1.285
EXTREME SPREAT		2.258	1.845	1.326
NUMBER IN ONE	NCH CIRCLE		8	
NUMBER IN THO	NCH CIRCLE		3	
NUMBER IN THREE	NCH TIRCLE		5	



PATTERN .	:				
SHOTS (BEST OF)			5	4	3
MAXIMUM X	1		. 265	. 655	. 872
MINIMUM X	1		848	141	122
*MAXIMUM Y	1		. 356	.511	. 428
MINIMUM Y	1		463	-,248	225
CENTROID X			.418	. 628	. 589
CENTROID Y			189	404	321
POR TO CENTROID :	0.1		. 459	.747	. 689
MIN PADIUS	ŧ		. 211	. 125	. 210
MEAN FADIUS	:		. 664	. 265	. 297
MAK PASIUS	1		. 956	. 530	. 445
HOPICONTAL SPREAD	: (		1.105	. 196	. 194
VEFTICAL SPREAD	;		1.321	.759	. 653
ELT ENE SPREAT	: (		1.722	.784	. 681
NUMBER IN ONE I	HCH	CIRCLE	=	1	
HUMBER IN THO I	HCH	CIRCLE		5	
NUMBER IN THREE I	INCH	CIRCLE		÷	



PATTERN .	1			
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X		.749	. 527	.110
MINIMUM X	1	888	240	865
MAXIMUM Y	1	1.145	. 853	. 352
MINIMUM Y		-1.168	766	481
CENTROID X	1	. 157	. 379	. 294
CENTROID Y	1	. 164	. 456	. 171
POR TO CENTROID	in.i	. 227	. 593	.266
MIN RADIUS		. 208	.168	.178
MEAN RADIUS		.775	. 551	.337
MAX PADIUS		1.467	1.003	.486
HORIZONTAL SPREAS	D :	1.637	.767	. 175
VERTICAL SPREAM	D :	2,313	1.619	. 833
EXTPEME SPREAM	D :	2,834	1.791	. 833
		RCLE .	3	
		RCLE =	3	
	INCH CI		5	



PATTERN #	: [			
SHOTS (BEST OF)		5	4	3
MAXIMUM X	1	1.164	. 168	. 898
MINIMUM X	t	501	211	162
MAXIMUM Y	:	.615	. 307	.171
MINIMUM Y	:	562	488	276
CENTROID X	1	338	628	550
CENTROID Y	1	169	323	187
POR TO CENTROID	in.:	.378	. 699	.581
MIN RADIUS		. 188	. 219	. 123
MEAN PADIUS	1	. 596	. 319	.217
MAX PADIUS	1	1.316	. 459	. 293
HORIZONTAL SPRE	AD :	1.665	. 379	. 260
VERTICAL SPRE	AD :	1.177	.715	. 447
EXTREME SPRE	AD :	2.039	.735	.517
NUMBER IN ONE	INCH CIRCLE		3	
NUMBER IN THO	INCH CIRCLE		4	
NUMBER IN THREE			5	

			Ge	ON SATE	AT(8711) (		•
ubfiles B7	51115	55					
				BASIC STA	ATISTICS		
VARIABLE  NAME IEAN RAD. IOPIZOHTAL IERTICAL AX_SPPEAD	03\$. 3 3 3	* OF MISS 0 0 0	5.4	1993 1160 1428 1214	MEAN .8031 1.6720 1.8140 2.2738	VARIANCE .0749 .0894 1.1426 .5791	3TD.DEV. .273 .299 1.063 .761
WARIAE. NAME 1EAN RAD. HOPITONTAL VERTICAL 18X_SPREAD	OF	FFICIENT VARIATION 34.06691 17.38278 58.92667 33.46786	OF	ERFOR MEAN .1' 16 .17263 .61715 .43936	LOWER LIMIT .1281 .9343 8229	UPPER LIMI 7 1.47 9 2.40 6 4.45	T 201 961 096
VARIABLE		Skehnes					
TEAN_PAD. HORIZONTA_ VERTICA: MAX_SPREAD			.513 9240 6885 1547	****	-1.50000 -1.50000 -1.50000 -1.50000		
• •							• • • • • • • • • • • • • • • • • • •
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ubfile: 87							
			1	BASIC STA	TISTICS		
VARIABLE		* OF					
NAME			SUM		MEAN	VARIANCE	STD.DEV.
EAN BAT.		: 0	2.1		.7245	.1690	
DRIZONTAL	3	ė		40	1.6680	1.1408	
ERTICAL	3	e	3.8		1.2757	. 5601	
AX_SPPEAD	3	. 0	5.9	299	1.9766	1.0673	11.033
VARIABLE	COE	FFICIENT	STD.	ERROR	95 % CONFID	ENCE INTERV	'AL
VARIABLE	COE	FFICIENT	STD.	ERROR	95 % CONFID	ENCE INTERV	-AL
na <b>ne</b>	OF	VARIATION	OF	MEAN	LOHER LIMIT	UPPEP LIF	IIT
NAME IEAN PAD.	OF	VARIATION 56.73468	OF	MEAN .23732	LOWER LIMIT 28951	UPPEP LIM	11T 13852
NAME IEAN PAD. IORIZONTAL	OF	VARIATION 56.73468 66.78148	OF	MEAN .23732 .64312	LOHER LIMIT 28951 -1.07994	UPPEP LIN 1.3 4	11T 23852 81594
NAME EAN PAD. IORIZONTAL ERTICAL IAX_SPPEAD	OF	VARIATION 56.73468 66.78148 58.66756 52.26488	OF	MEAN .23732 .64312 .43209 .59645	LOHER LIMIT 28951 -1.07994 57058 57190	UPPEP LIN 4 3.:	11T 13852
NAME EAN PAD. IORIZONTAL ERTICAL IAX_SPPEAD	OF	VARIATION 56.73468 66.78148 58.66756	OF	MEAN .23732 .64312 .43289	LOHER LIMIT 28951 -1.07994 57058 57190	UPPEP LIN 4 3.:	IIT 13852 1594 12192
NAME EAN PAD. IORIZONTAL ERTICAL IAX_SPPEAD	0F	VARIATION 56.73468 66.78148 58.66756 52.26488	OF	MEAN .23732 .64312 .43289 .39645	LOHER LIMIT - 28951 -1.07994 57058 57190	UPPEP LIN 4 3.:	IIT 13852 1594 12192
HAME IEAN PAD. IORIZOHTAL IERTICAL IAX_SPPEAD	0F	VARIATION 56.73468 66.78148 58.66756 52.26488	OF	MEAN .23732 .64312 .43289 .59645	LOHER LIMIT - 28951 -1.07994 57058 57190	UPPEP LIN 4 3.:	IIT 13852 1594 12192
NAME JEAN PAD. JORIZONTAL JERTICAL JERTICAL JERTICAL JERTICAL JERTICAL JERTICAL JERTICAL JERTICAL JERTICAL	OF	VARIATION 56.73468 66.78148 58.66756 52.26488  SKEHNES	OF	MEAN .23732 .64312 .43289 .59645	LOWER LIMIT - 28951 -1.07994 - 57058 - 57190	UPPEP LIN 4 3.:	11T 13852 1594 12192
NAME IEAN PAD. IERTICAL IERTICAL IERTICAL IERTICAL IERTICAL IERTICAL IERTICAL	OF	VARIATION 56.73468 66.78148 58.66756 52.26488  SKEHNES	0F	MEAN .23732 .64312 .43289 .59645	LOHER LIMIT 28951 -1. 67994 57058 57196	UPPEP LIN 4 3.:	11T 13852 1594 12192
NAME SEAN PAD. SORIZONTAL SERTICAL SARIABLE SEAN RAB. SORIZONTAL FERTICAL SARIABLE	OF	VARIATION 56.73468 66.73148 58.66756 52.26488  SKEHNET	0F	MEAN .23732 .64312 .43289 .59645	LOHER LIMIT 28951 -1.079945705857190	UPPEP LIN 4 3.:	11T 13852 1594 12192
NAME IEAN PAD. IERTICAL IERTICAL IERTICAL IERTICAL IERTICAL IERTICAL IERTICAL	OF	VARIATION 56.73468 66.73148 58.66756 52.26488  SKEHNES	0F	MEAN .23732 .64312 .43289 .59645	LOHER LIMIT 28951 -1. 67994 57058 57196	UPPEP LIN 4 3.:	IIT 13852 1594 12192
NAME SEAN PAD. SORIZONTAL SERTICAL SARIABLE SEAN RAB. SORIZONTAL FERTICAL SARIABLE	OF	VARIATION 56.73468 66.73148 58.66756 52.26488  SKEHNES	0F	MEAN .23732 .64312 .43289 .59645	LOHER LIMIT 28951 -1. 67994 57058 57196	UPPEP LIN 4 3.:	IIT 13852 1594 12192
NAME IEAN PAD. IORIZONTAL ERTICAL IAX_SPREAD  VARIABLE IEAN_RAB. IORIZONTAL /ERTICAL IAX_SPREAD	OF	VARIATION 56.73468 66.73148 58.66756 52.26488  SKEHNES	0F	MEAN .23732 .64312 .43289 .59645	LOHER LIMIT 28951 -1. 67994 57058 57196	UPPEP LIN 4 3.:	IIT 13852 1594 12192

MERN_RAD. 3 0 1.7536 .5879 .0668 HORIZONTAL 3 0 4.6240 1.5413 1.5101 1.							
VARIABLE COEFFICIENT STD. ERROR 95 % CONFIDENCE INTERVAL HAME OF VARIATION OF MEAN LOWER LIMIT UPPER LIMIT MEAN RAD. 43.95702 .1491904961 1.22531 HORIZONTAL 79.72738 .70949 -1.4908 4.57284 VERTICAL 9.48779 .06517 .91122 1.45312 HAM_SPREAD 61.00055 .6694695992 4.75110   VARIABLE COEFFICIENT STD. ERROR 95 % CONFIDENCE INTERVAL HAME OF VARIATION OF MEAN LOWER LIMIT UPPER LIMIT MEAN RAD. 43.95702 .1491904961 1.22531 HORIZONTAL 79.72738 .70949 -1.49010 4.57284 VERTICAL 9.48779 .06517 .91122 1.46312 HAM_SPREAD 61.00055 .6694695992 4.76110	*						
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VARIABLE COEFFICIENT STD. ERROR 95% CONFIDENCE INTERVAL HAME OF VARIATION OF MEAN LOWER LIMIT UPPER LIMIT MEAN RAD. 43,95702 114919 -0.04961 1.22511 HORIZONTAL 79,72738 70949 -1.49018 4.57284 VERTICAL 9.48779 .06517 .91122 1.46312 MAX_SPREAD 61.00985 .6694695592 4.76110  VARIABLE EXEMBES AUFTORIS  WARRABLE INCLUDED TO THE COMPAN AUGUST AUGU							
** OF *** OF *** NAME OBS. MISS SUM MEAN VARIANCE STD.DEM. MEAN RAD. 3 0 1.7536 .5879 .0658 MORIZONTAL 3 0 4.6240 1.5413 1.5101 1 VERTICAL 3 0 3.5690 1.1997 .0127 MAX_SPREAD 3 0 5.7018 1.9006 1.2445 1  **VARIABLE COEFFICIENT STD. ERROR 95 % CONFIDENCE INTERMAL HAME OF VARIATION OF MEAN LOWER LIMIT UPPER LIMIT HEAN RAD. 43.95702 .1491904961 1.22531  HORIZONTAL 79.72738 .70949 -1.49018 4.57284 VERTICAL 9.48779 .06517 .91122 1.46312 MAX_SPREAD 61.00985 .6694695992 4.76110  **VARIABLE EXEUNCIS ***UFT0515**  **VARIABLE EXEUNCIS ****UFT0515**  **VARIABLE EXEUNCIS ****UFT051				EASIC ETE	BOITEITA		
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HORIZONTAL 3 8 4.6248 1.5413 1.5101 1.2011		OBS. MISS		7506			
VARIABLE COEFFICIENT STD. ERROR 95% CONFIDENCE INTERMAL HAME OF VARIATION OF MEAN LOWER LIMIT UPPER LIMIT MEAN RAD. 43.95702 .1491904961 1.22531 HORIZONTAL 79.72738 .70949 -1.49010 4.57284 VERTICAL 9.48779 .06517 .91122 1.46312 MAX_SPREAD 61.00985 .6694695992 4.76110	MEHN WMB. HORIZONTAL						
VARIABLE       COEFFICIENT       STD. ERROR       95 % CONFIDENCE INTERMAL         NAME       OF VARIATION       OF MEAN       LOWER LIMIT       UPPER LIMIT         MEAN RAD.       43.95702       .14919      04961       1.22531         HORIZONTAL       79.72738       .79949       -1.49010       4.57284         VERTICAL       9.48779       .06517       .91122       1.46312         MAX_SPREAD       61.00985       .66946      95992       4.76110         VARIABLE       PREMINEIS       KUFTOSIS         MEAN RAD.       .69287       -1.50000         HORIZONTAL       .69280       -1.50000         VERTICAL       .79704       -1.50000	VERTICAL	3 0	3	. 5690	1.1897	.0127	7 . 1
NAME OF VARIATION OF MEAN LOWER LIMIT UPPER LIMIT MEAN RAD. 43.95782 .1491904961 1.22531 HORIZONTAL 79.72738 .70949 -1.49018 4.57284 VERTICAL 9.48779 .06517 .91122 1.46312 MAX_SPREAD 61.00985 .6694695992 4.76110							
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HORIZONTAL 79.72738 .70949 -1.49018 4.57284 VERTICAL 9.48779 .06517 .91122 1.46312 MAX_SPREAD 61.00985 .6694695992 4.76110  VARIABLE SKEUNEIS KUFTUETS  MEAN_RAD69297 -1.50000 HORIZONTAL .69680 -1.50000 VERTICAL .79704 -1.50000							
VERTICAL       9.48779       .06517       .91122       1.46312         MAX_SPREAD       61.00985       .66946      95992       4.76110             VARIABLE       EKEUNEIS       KUFT0815         MEAN RAD.       .69297       -1.50000         HORIZONTAL       .69680       -1.50000         VERTICAL       .79704       -1.50000	HORIZONTAL	79.7					
VARIABLE EKEUNEIS KUFTSEIS  MEAN RAD59297 -1.50000  HORIZONTAL .59680 -1.50000  VERTICAL .79704 -1.50000	YERTICAL	9.4					
MEAN RAD	nav seksañ	91.4 		. 56745	-, '	73776 4	
HORIZONTAL .59589 -1.50000 VERTICAL .78784 -1.50000	VARIABLE	įtki	LUNE::	KUFTGE	IS		
VERTICAL .70704 -1.50000	MEAN RAD.		. 49297		-1.50000		
	HORIZONTAL		. ફેલ્ફેફ્રે		-1.50000		
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VARIABLE						
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NAME	OBS. MISS			MEAN	VAPIANCE	STD.DEY.
MEAN_RAD.	3 0	1.9		.6519	. 9091	. 9 9
HORIZONTAL	3 0	4.1		1.3878	.0354	. 13
MAX_SPREAD	3 0		578 675	1.1857 1.6558	.2107 .0606	. 45
VARIABLE NAME MEAN PAD. HORIZONTAL VERTICAL	13.86	ON OF 1021 1827	ERROR MEAN .05194 .10857 .26504	LOWER LIMIT .4299	9 1.35	T 388 091
MAX_SPREAD	14.86		.14215			
VARIABLE	SKEI	iness	KURTOSI	S		
MEAN_RAD.		فيتاند.		1.50000		
HORIZONTAL	•	45093		1.50096		
VERTICAL		. ఒఖాశ్ర	•	- 1 . ଅନ୍ତତ୍ତ		
MAX SPREAD		.38511		-1.50000		

Subfile: 87511186 CASIS STATISTICS VARIABLE . OF . OF STD.BEV. .0279 .4948 .1775 NAME OBS. MISS VARIANCE SUM .7092 1.2540 1.6743 2.1277 MEAN FAD. HORIZONTAL 3 .0003 .2443 .0315 5.0230 VERTICAL . 0997 MAX\_SPREAD 5.7471 1.9157 . 2099 95 % CONFIDENCE INTERVAL LONER LIMIT UPPER LIMIT VARIABLE COEFFICIENT STD. ERROR HAME OF VARIATION OF MEAN MEAN PAD. HORIZONTAL .77306 1.47462 3.93336 . 81611 .64042 39.45725 10.60158 . 28567 .03333 VERTICAL 1.23644 2.11223 .10248 5.20205 MAX\_SPREAD . 85754 1.66985 2.16153 VARIABLE SKEHNESS - KURTOSIS MEAN\_RAD. HORIZONTAL -.07721 -1,70000 .46148 -1.:0000 VERTICAL -1.50000

MAX SPPEAD

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VARIABLE					
	OF # OF BS. MISS	SUM	MEAN	VARIANCE	STD.DEV.
	3 0	2.3706	.7982	.0414	. 203
HORIZONTAL	3 0	2.7588	.9193	. 1956	.4423
VERTICAL MAX SPREAD	3 0	6.38 <b>58</b> 6. <b>6597</b>	2.1283 2.2199	.1204 .1262	.346° .355
VARIABLE NAME MEAN PAD. HORIZONTAL	COEFFICIENT OF VARIATION 25.74796 48.11231		LOHER LIM'		T 213
VERTICAL MAX_SPREAD	16.30122 1 <b>6.80</b> 476				

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			2A910 37	ATIETICE		
VARIABLE			,			
		• GF				
NAME		MISS	SUM	MEAN	VAPIANCE	STB.DEV.
MEAN PAD. HOPIZONTAL	3	9	2.0356 4.407 <b>0</b>	.6785 1.4690	.0092 .0996	. 91
VERTICAL	3	a a	4.8118	1.6037	.3825	.3:
MAX_SPREAD	3	9 8 9	6.5949	2.1983	.3279	. 5
VARIABLE NAME	COE	FFICIENT	STD. ERROR	95 % CONF	IDENCE INTERMA	L *
MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD		13.34862 21.48019 38.56822 26.04784	. 05229	.455 .698 .677	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL		13.34862 21.48819 38.56822	.05229 .18216 .35709	.455 .698 .677	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL MAX_SPREAD	****	13.34862 21.48819 38.56822 26.84784	.05229 .19216 .35789 .33959	.455 .698 .877:	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL	****	13.34862 21.48819 38.56822	.05225 .19216 .35785 .33955	.455 .698 .877:	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL MAX_SPREAD VARIABLE MEAN_RAD.	****	13.34862 21.48919 38.56822 26.84784 SKEHNES:	.05225 .18216 .35785 .33055 .33055	.455 .698 .077 .785	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL MAX_SPREAD  VARIABLE MEAN_RAD. HORIZONTAL		13.34862 21.48919 38.56822 26.84784 SKEHNES:	.05225 .18216 .35785 .33055 .33055 S KURTOS	.455 .698 .0776 .785 .785	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL MAX SPREAD VARIABLE MEAN RAD. HORIZONTAL VERTICAL		13.34862 21.48019 38.56822 26.84784 	.05229 .19216 .35709 .33059 	.455 .698 .077 .785 .785 .785	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL MAX_SPREAD  VARIABLE MEAN_RAD. HORIZONTAL		13.34862 21.48019 38.56822 26.84784 	.05225 .18216 .35785 .33055 .33055 S KURTOS	.455 .698 .0776 .785 .785	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL MAX SPREAD VARIABLE MEAN RAD. HORIZONTAL VERTICAL		13.34862 21.48019 38.56822 26.84784 	.05229 .19216 .35709 .33059 	.455 .698 .077 .785 .785 .785	10 .90 58 2.24 86 3.12	199 742 947
HORIZONTAL VERTICAL MAX SPREAD VARIABLE MEAN RAD. HORIZONTAL VERTICAL		13.34862 21.48019 38.56822 26.84784 	.05229 .19216 .35709 .33059 	.455 .698 .077 .785 .785 .785	10 .90 58 2.24 86 3.12 76 3.61	199 742 947
HORIZONTAL VERTICAL MAX SPREAD VARIABLE MEAN RAD. HORIZONTAL VERTICAL		13.34862 21.48019 38.56822 26.84784 	.05229 .19216 .35709 .33059 	.455 .698 .077 .785 .785 .785	10 .90 58 2.24 86 3.12 76 3.61	199 742 947
HORIZONTAL VERTICAL MAX SPREAD VARIABLE MEAN RAD. HORIZONTAL VERTICAL		13.34862 21.48019 38.56822 26.84784 	.05229 .19216 .35709 .33059 	.455 .698 .077 .785 .785 .785	10 .90 58 2.24 86 3.12 76 3.61	199 742 947
HORIZONTAL VERTICAL MAX SPREAD VARIABLE MEAN RAD. HORIZONTAL VERTICAL		13.34862 21.48019 38.56822 26.84784 	.05229 .19216 .35709 .33059 	.455 .698 .077 .785 .785 .785	10 .90 58 2.24 86 3.12 76 3.61	199 742 947

QR # 000873

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington.

PATERS

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

XC: L. B. Bosquet G. J. Hill R. J. Long W. J. Newkirk

D. I. Roark K. W. Soucy

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March 27, 1986

J. J. BURNS

## KP-100, CAL. .223, TRIAL AND PILOT - PINISE GUN AUDIT

#### SUPPLARY:

This lot is rejected for mechanical and visual nonconformities. On two of the eight sample guns, safety switch operating force became unsatisfactory. All stock assemblies of the sample contained significant visual nonconformities.

#### CONCLUSIONS:

Corrective actions to reduce the likelihood of such quality problems in the future are needed at:

- o Stock assembly
- o Final assembly

## INNEDIATE POLLOW-UP:

All nonconforming product was contained on 3/26/86.

Nonconforming stock assemblies were reviewed with the Foreman of the originating Dept. on 3/26/86.

Mechanical checks and rework began on 3/27/86.

The Custom Shop Supervisor was notified 3/27/86.

OR # 000873 March 27, 1986

J. J. BURNS

XP-100, CAL. .223, TRIAL AND PILOT - FINISH GUM AUDIT - contd.

#### RESULTS:

Observed nonconformities are ranked below in the order of estimated overall importance (highest first); weighing both the individual seriousness of the nonconformity and its observed frequency of occurrence.

#### Mechanical:

The safety switch operating force dropped abruptly and its movement became sloppy when the lower leg of the safety snap washer became disengaged from the notch in the safety pivot pin.

#### Visual:

All eight sample stock assemblies had an abrupt and very noticeable difference in surface luster between the sides of the fore-end and the rest of the Stock.

Approximately half the sample stocks had obvious scratches, scrapes or mars. (The final assembler reported that he sometimes receives stock assemblies piled, en masse, in a cardboard box; instead of in individually-compartmented short stock wire racks.)

All eight sample barrel assemblies show a polish mismatch (transition) just in front of the fore-end. This distracts from the appearance and perceived quality of the product; it is believed this will be objectionable to a minority of customers.

W. A. Warren, Jr. Quality Assurance Analyst

WAW/bdm

FRED 5. 5-2-8c

FOR LOVE INFO.

Beer Warren

QR # 000873

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington.

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RD-69-18

PETERS

XC: L. B. Bosquet

G. J. Hill R. J. Long

W. J. Newkirk
D. I. Roark
K. W. Soucy

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

March 27, 1986

J. J. BURNS

## XP-100, CAL. .223, TRIAL AND PILOT - FINISH GUN AUDIT

## **SUMMARY:**

This lot is rejected for mechanical and visual nonconformities. On two of the eight sample guns, safety switch operating force became unsatisfactory. All stock assemblies of the sample contained significant visual nonconformities.

#### **CONCLUSIONS:**

Corrective actions to reduce the likelihood of such quality problems in the future are needed at:

- o Stock assembly
- o Final assembly

## IMMEDIATE FOLLOW-UP:

All nonconforming product was contained on 3/26/86.

Nonconforming stock assemblies were reviewed with the Foreman of the originating Dept. on 3/26/86.

Mechanical checks and rework began on 3/27/86.

The Custom Shop Supervisor was notified 3/27/86.

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XP-100, CAL. .223, TRIAL AND PILOT - FINISH GUN AUDIT - contd.

#### **RESULTS:**

Observed nonconformities are ranked below in the order of estimated overall importance (highest first); weighing both the individual seriousness of the nonconformity and its observed frequency of occurrence.

## Mechanical:

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## Visual:

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Approximately half the sample stocks had obvious scratches, scrapes or mars. (The final assembler reported that he sometimes receives stock assemblies piled, en masse, in a cardboard box; instead of in individually-compartmented short stock wire racks.)

All eight sample barrel assemblies show a polish mismatch (transition) just in front of the fore-end. This distracts from the appearance and perceived quality of the product; it is believed this will be objectionable to a minority of customers.

W. A. Warren, Jr. Quality Assurance Analyst

WAW/bdm

value

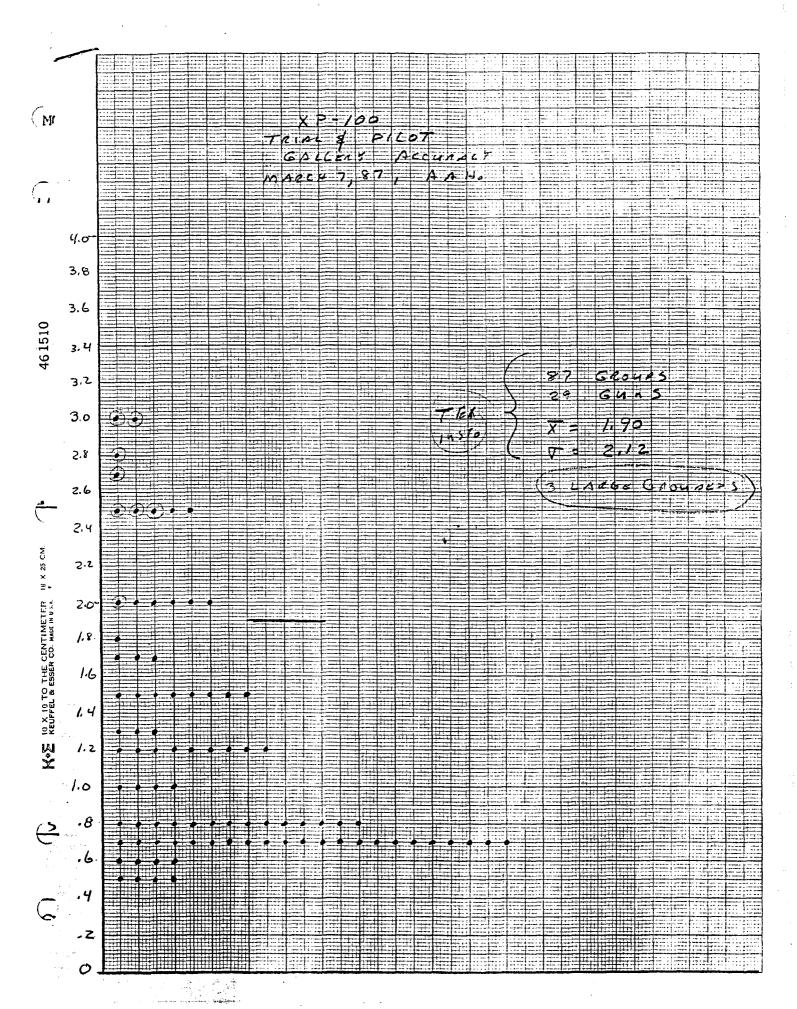
Report No. ¥6 0972

# RESEARCH TEST & MEASUREMENT LAB WORK REQUEST

	ABI	EA OF TESTING
Developmental	Safety Related	EA OF TESTING
Design Acceptance	Salety nelated	Litigation uation Warehouse Audit
Pre-Pilot	New Design	Cost Reduction
_X Plot	Design Change	Stake
	Plant Assistance	X Other ADDED CALIBER
FIREARM STAT'S	REPORT REQ'D.	
MODEL: XP-100	FORMAL X	DATE REQUESTED: APRIL 7,86  DATE NEEDED BY: ASM
CAL or GAGE: 223 REM	TEST	
BARREL TYPE: PAGONICTION	RESULTS .	REQUESTED BY: A. A. HUGICA
PROOFED: YESNO	UNLT	WORK ORDER NO: 925C0805
•	TEST TYPE	
Strength Test Ammuniti	on Test Dry Cycle 1	
X Function Test Environme	intal Test Measureme	other TRIAL \$
X Accuracy Test Customer	Complaint Endurance	73 6 6 70
EXPLAIN IN DETAIL THE REASON FOR T	HIS TEST:	
		TRIAL & DUOT
CONDUCT XP-	700 223 15271	11.10 9 1-2010
		1
- GUNS REQUIRED:		
1 STED DEA A	TTACHED LET	TER NO. 2220
L13121 121C. 10	, , , , , , , , , , , , , , , , , , , ,	120 1000 1220
NOTE: NO firearms or parts will be tested :	n the Labs unless they are	DATE COMPLETED:
accompanied by a Work Request, a	nd both are delivered to	TEST COMPLETED BY:
the Labs by the designer or engineer	r. All Work Requests are	REPORT DATE:
to be filled out in detail. No Except	ions.	
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cc: J. White

		S WITHDRAWAL AND P	AAAAAA	•
		•	DATE4/7	/86
			LETTER NO	2220
JANTITY _	8		RAMAC # 92549	2
DDEL XP	-100	CAL./GA. 223	. WORK ORDER	25 C-08
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	(7) [X] Will Be	(1) <b>X</b> Wi	ll Not Be Return	ed
	To be used for:	【▲ Testing ☐ Other		
EMARKS:				



GR H. S SPECIAL TEST REPORT

MODEL XP100

2	Co. /		Неa		Jac	<u> </u>	1	T =	~ b +	Jack	
Jo.	Ga./ Cal.	Rds.	Type	V	Resul		Rds.	Type		Results	Service Service Service
		35%0		H.P.		0.60				700	(,43)
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71				1, 2	1,5	15(1.3)		/233	為了影	1,8	43
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42 1 2 1 16

Bill warren

B7511598 - inside of Rec - Several cutter marks
- Gouges out of Journal left side
- braze shows through under bolt handle
- Part of warning tollmark hidden by fore and
- luster mis match fore-and
B7511186 - random glue marks
mar bottom rear of bolt
bur on bolt hendle & bolt lug
- lu
7 1:
-Acceptable
More care with stock - buffing - qlue etc
NOTE: - Black shows in Front of year receiver Fing with
balt closed - should this be ?
- Safety difficult to work
hedspel, Trigger pull

	HI Care	TRIGGER PULL	XP-100
#	Hel Space	165	TEP
1217	. 00 2	2.0	
1233	.003	2.0	
1598	.001	1 3/4	
1186	,003	13/4	
1204	.002	2 1/4	
1234	,002	2.0	
1/37	.005	2 1/4	
1155	001	2,0	
· · · · · · · · · · · · · · · · · · ·	R223	C Z	
5	Sar Power-1	EXT Hollow po	plat
•		, , , , , , , , , , , , , , , , , , ,	
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RD-69-B

# REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE





"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

cc: W.H. Coleman, II/File

J.W. Bower J.G. Hill J.R. Snedeker F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT REPORT# 860972

MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

# MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

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м	п		ın	A		

Research and Development finds the Trial and Pilot Evaluation of the Model XP-100 .223 REM caliber to be acceptable. However, the following should be investigated, by production:

1. During the Visual inspection all of the pistols were found to have some random spots of glue, and the stock luster was mismatched. More care needs to be taken during the assembly of the stocks.

Prepared by: F.L. SUPRY Date Prepared: 4/18/86

proofread and cleared by:	
J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab	
W.H. COLEMAN, II New Products Research Lab Director	

REP.#860972

W.O.# 925C0805

MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

TO: J.R. Snedeker FROM: F.L. Supry

## INTRODUCTION:

On April 07, 1986 a request to conduct a Trial and Pilot Evaluation on the Model XP-100 .223 REM. caliber pistol was received by the Test Lab. The evaluation would use eight guns, withdrawn from the warehouse, and consist of Visual Inspection, and 100 Yard Accuracy.

SCOPE OF TEST:

To determine if the production run samples meet Remington Specifications set by the Research Design Section.

TEST RESULTS:

The Model XP-100, chambered in the .223 REM. caliber, was found to be acceptable in all phases of the Trial and Pilot Evaluation.

#### REPORT TEXT:

#### 1. VISUAL INSPECTION:

- A. The visual inspection committee found no major items in the appearance of the pistols inspected.
- B. The following general comments were made in overall reference to the pistols:
  - a. The luster of the pistols needs improvement.
  - b. The removing of the excess glue needs improvement.
- C. The pistols used in the visual inspection were:

B7511233 B7511217 B7511204 B7511234 B7511598 B7511186

D. Comments recorded for each individual pistol are located in the appendix of this report.

## 2. ACCURACY:

A. Eight (8) pistols were tested for 100 yard accuracy.

B7511233 B7511217 B7511204 B7511137 B7511234 B7511598 B7511186 B7511155

B. The following averages were established:

a. Group Size: 1.99 inches

b. Horizontal Spread: 1.42 inches

c. Vertical Spread: 1.51 inches

1

B. Accuracy results per individual pistol are located in the appendix of this report.

#### TEST PROCEDURE:

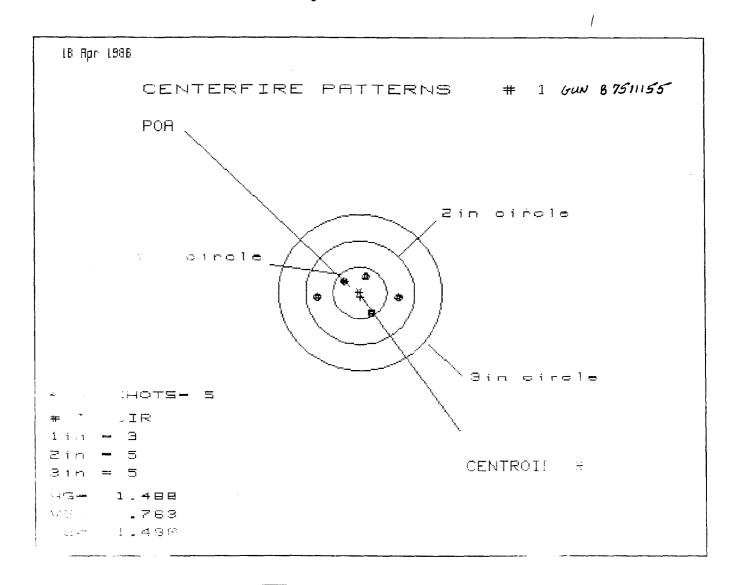
#### 1. VISUAL INSPECTION:

- A. The Visual Inspection Committee consisted of W. Warren, (Q.C.); R. Howe, F. Supry, and T. Douglas, (Research).
- B. Six (6) of the eight (8) pistols were used for the visual inspection.
- C. Each pistol was wiped down with a clean white Coyne towel, and examined by each member of the Visual Inspection Committee. All comments were recorded.
- D. Following the visual inspection, headspace and trigger pull measurements were taken on all eight pistols.

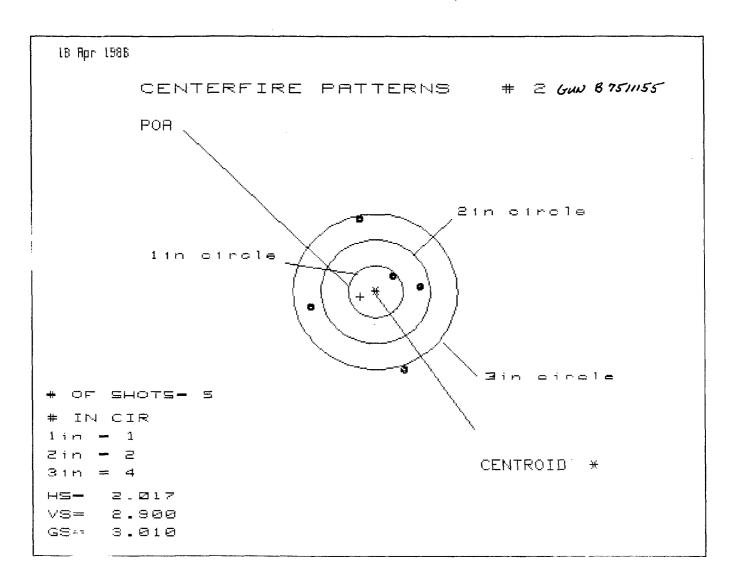
## 2. ACCURACY:

- A. The accuracy was shot by T. Douglas, J. Ronkainen, and K. Calkins, (Research), at the R & D 100 yard range.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 12X scope.
- C. Remington ammunition, index R223R2; code U08-002301, 55 grain hollow point, was used for the 100 yard accuracy test.
- E. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- F. A total of three (3), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- G. The patterns were analyzed for group size, horizontal spread, and vertical spread, using the HP 9000 computer. The averages were calculated for each pistol.

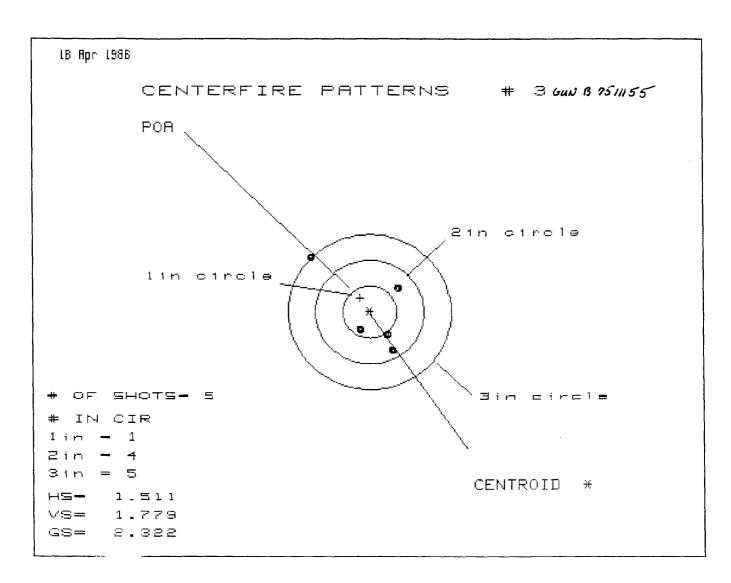
APPENDIX



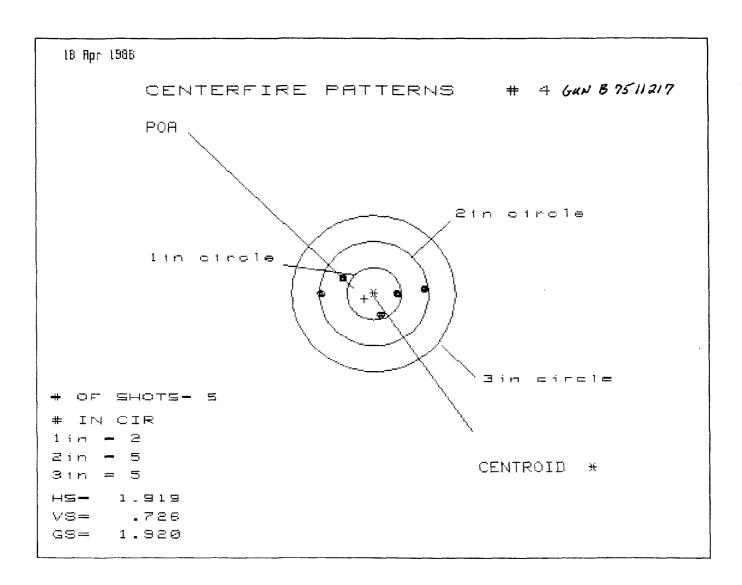
1/45 (TERH # :	1		
BEST OF) :	5	4	3
t com X :	.693	.494	.216
. ininom	795	~.498	333
MAKIMUM:	.360	.352	.313
.INTMUM 7	403	411	450
CENTROID X :	011	.188	.023
CONTROLD Y	.081	.089	.128
POA TO CENTROID in.:	.081	.208	.130
MIN F HS	.352	.355	.334
MERN JIUS :	.543	.451	.398
MAX RADIUS :	.796	.528	.499
HORIZONTAL SPREAD :	1.488	.992	.549
VERTICAL SPREAD :	.763	.763	.763
EXTREME SPREAD :	1.490	1.035	.804
NUMBER I HE INCH	CIRCLE =	3	
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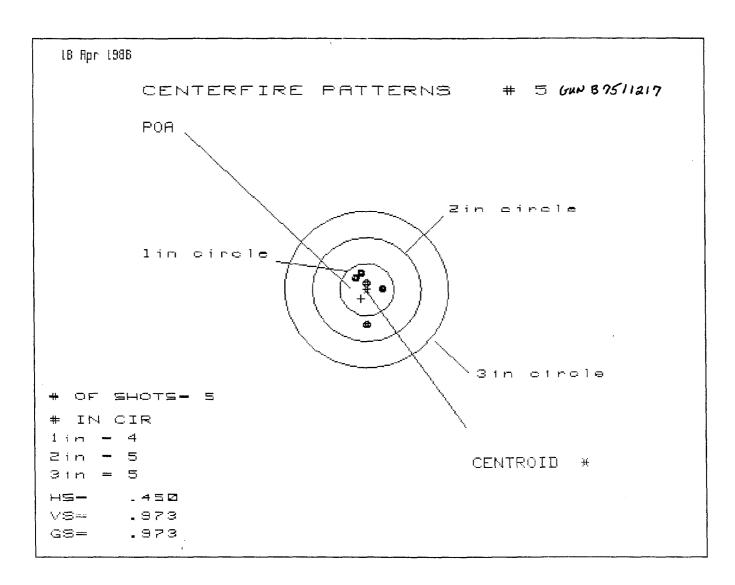
PATTERN # :	2		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.797	.918	.850
MINIMUM X :	-1.220	-1.100	-1.167
MAXIMUM Y :	1.400	1.024	.243
MINIMUM Y :	-1.500	630	289
CENTROID X :	.287	.167	.234
CENTROID Y :	.096	.471	.130
POA TO CENTROID in.:	.303	.500	.267
MIN RADIUS :	.382	.396	.399
MEAN RADIUS :	1.088	.918	.817
MAX RADIUS :	1.576	1.267	1.202
HORIZONTAL SPREAD :	2.017	2.017	2.017
VERTICAL SPREAD :	2.900	1.655	.532
EXTREME SPREAD :	3.010	2.045	2.045
NUMBER IN ONE INCH	CIRCLE =	1	
NUMBER IN TWO INCH	CIRCLE =	2	
NUMBER IN THREE INCH	CIRCLE =	4	



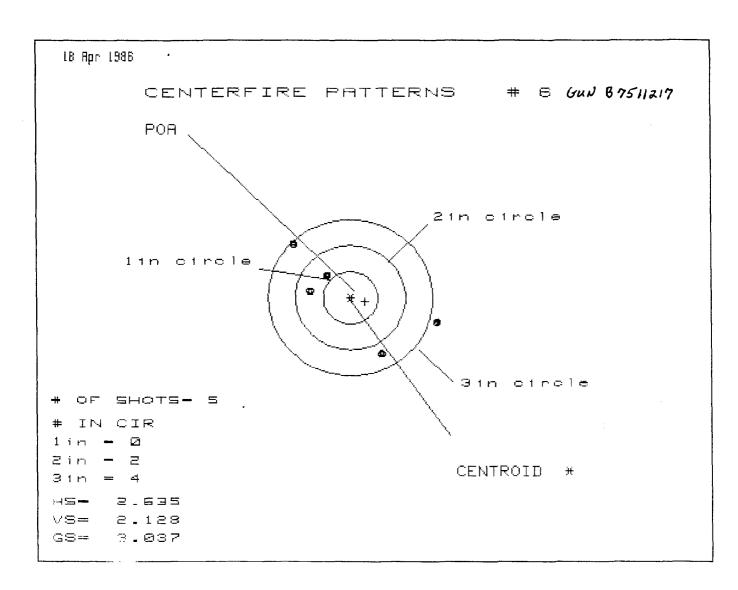
PATTERN #	:	3		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.474	.214	.279
MINIMUM X	:	-1.037	419	354
MAXIMUM Y	:	1.073	.707	.561
MINIMUM Y	:	706	438	~.338
CENTROID X	:	.182	.442	.377
CENTROID Y	:	268	536	390
POA TO CENTROID	in.:	.324	.695	.542
MIN RADIUS	:	.381	.192	.346
MEAN RADIUS	<b>H</b>	.778	.459	.464
MAX RADIUS	:	1.492	.739	.627
HORIZONTAL SPREA	1D :	1.511	.633	.633
VERTICAL SPREA	aD :	1.779	1.145	.899
EXTREME SPREA	i df	2.322	1.145	1.008
NUMBER IN ONE	INCH CIRCLE	E =	1	
NUMBER IN TWO	INCH CIRCL	E =	4	
NUMBER IN THREE	INCH CIRCL	E =	5	



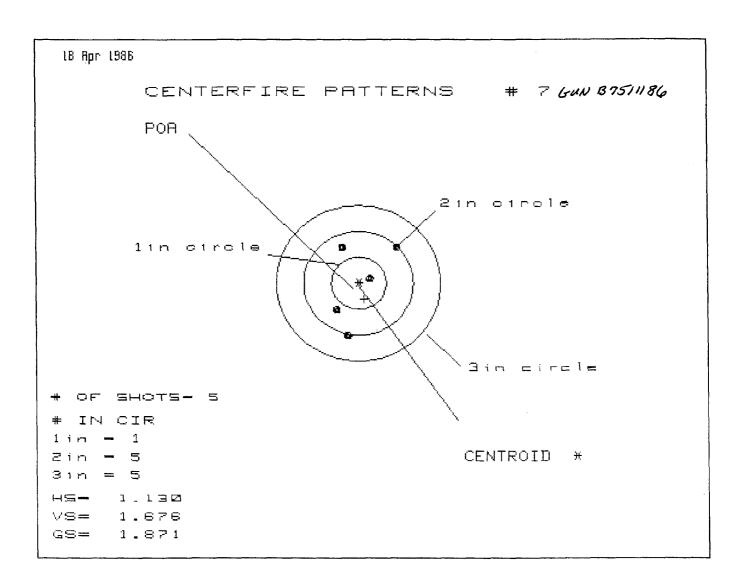
PATTERN #	: 4		
SHOTS (BEST OF)	: 5	4	3
MAXIMUM X	: .95	9 .652	.412
MINIMUM X	:96	0720	579
MAXIMUM Y	: .30	8 .332	.356
MINIMUM Y	:41	8394	370
CENTROID X	: .17	7063	.177
CENTROID Y	: .09	9 .075	.051
POA TO CENTROID in.	: .20	3 .098	.184
MIN RADIUS	: . 41	4 .475	.406
MEAN RADIUS	: .68	9 .604	.499
MAX RADIUS	: .96	4 .724	.680
HORIZONTAL SPREAD	: 1.91	9 1.372	.991
VERTICAL SPREAD	<b>.</b> 73	6 .726	.726
EXTREME SPREAD	: 1.92	0 1.374	1.048
NUMBER IN ONE INC	H CIRCLE =	2	
NUMBER IN TWO INC	H CIRCLE =	5	
NUMBER IN THREE INC	H CIRCLE =	5	



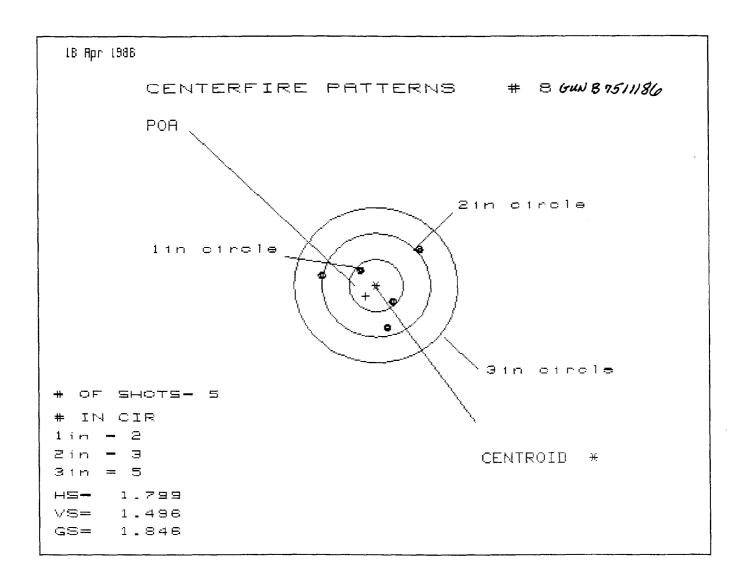
PATTERN #	:	5		
SHOTS (BEST OF)	:	5 .	4	3
MAXIMUM X	:	.288	.278	.253
MINIMUM X	:	162	173	197
MAXIMUM Y	:	.317	.153	.124
MINIMUM Y	:	656 ·	165	115
CENTROID X	:	.107	.118	.142
CENTROID Y	:	.174	.338	.288
POA TO CENTROID i	n.:	.205	.358	.321
MIN RADIUS	:	.106	.069	.057
MEAN RADIUS	:	.332	.187	.189
MAX RADIUS	:	.658	.323	.278
HORIZONTAL SPREAD	:	.450	.450	.450
VERTICAL SPREAD	:	.973	.318	.239
EXTREME SPREAD	· :	.973	.510	.510
NUMBER IN ONE I	NCH CIRCLE	=	4	
NUMBER IN TWO I	NCH CIRCLE	=	5	
NUMBER IN THREE I	NCH CIRCLE	=	5	



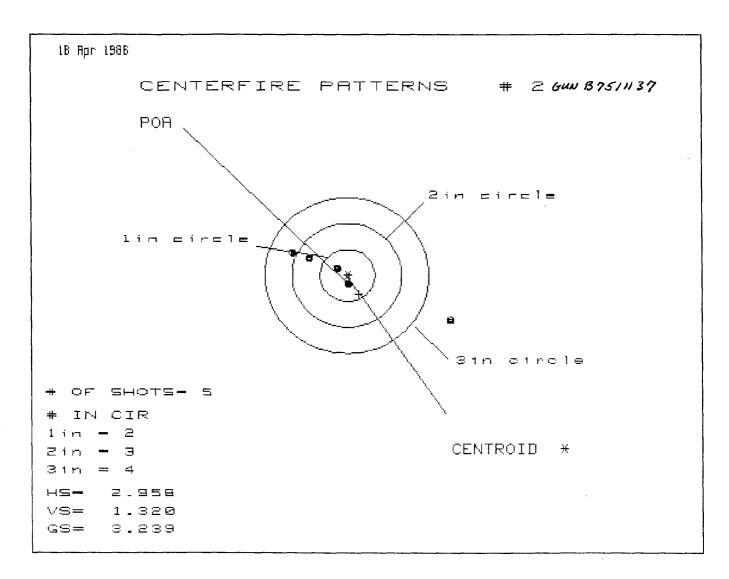
PATTERN #	:	6		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	1.592	1.011	.796
MINIMUM X	:	-1.043	645	556
MAXIMUM Y	:	1.016	.892	.621
MINIMUM Y	:	-1.112	-1.236	938
CENTROID X	:	266	663	448
CENTROID Y	:	.069	.193	105
POA TO CENTROID in	. : "	.274	.691	.460
MIN RADIUS	:	.616	.324	.640
MEAN RADIUS	:	1.152	.841	.845
MAX RADIUS	:	1.667	1.597	1.231
HORIZONTAL SPREAD	:	2.635	1.657	1.352
VERTICAL SPREAD	:	2.128	2.128	1.559
EXTREME SPREAD	:	3.037	2.697	1.872
NUMBER IN ONE IN	CH CIRCL	.E =	Ø	
NUMBER IN TWO IN	ICH CIRCL	.E '=	2	
NUMBER IN THREE IN	CH CIRCL	.E =	4	



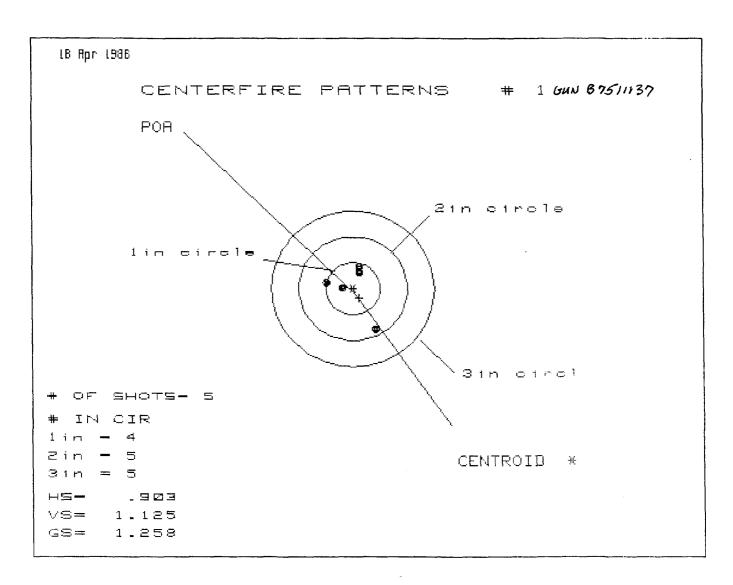
PATTERN # :	7			
SHOTS (BEST OF)	5	4	3	
MAXIMUM X :	.717	.659	.363	
MINIMUM X	413	471	251	
MIKIMUM Y	.711	.470	.605	
minimum y	965	703	567	
CENTROID X :	094	036	256	
CENTROID Y	.307	.548	.413	
POR 10 CENTROID in.	.321	.550	.486	
MIN RADIUS	.212	.225	.365	
Mesta RADIUS	.710	.605	.533	
MHX RADIUS	.993	.846	.620	
HORIZONTAL SPREAD	1.130	1.130	.614	
VERTICAL SPREAD	1.676	1.172	1.172	
EXTREME SPREAD	1.871	1.583	1.180	
NUMBER IN ONE INC	H CIRCLE =	1		
NUMBER IN TWO INC	H CIRCLE =	5		
NUMBER IN THREE INC	H CIRCLE =	5		



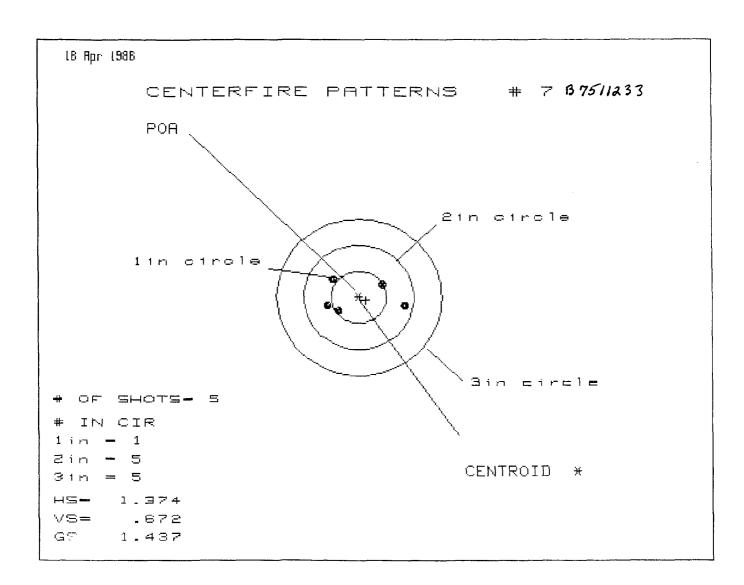
PATTERN #	8		
SHOTS (BEST OF)	: 5	4	3
MAXIMUM X	.808	.489	.227
MINID M X	991	788	334
MAXIMUM Y	.646	.406	.538
MINIMUM Y	850	689	557
CENTROID X	.198	005	.258
CENTROID Y	.207	.046	086
POA TO CENTROID in.	. 286	.046	.272
MIN RADIUS	.367	.412	.228
MEAN RADIUS	.737	.645	.476
MAX RADIUS	1.035	.882	.633
HORIZONTAL SPREAD	1.799	1.278	.561
VERTICAL SPREAD	1.496	1.095	1.095
EXTREME SPREAD	1.846	1.586	1.181
NUMBER IN ONE INC	H CIRCLE =	2	
NUMBER IN TWO INC	H CIRCLE =	3	
NUMBER IN THREE INC	H CIRCLE =	5	



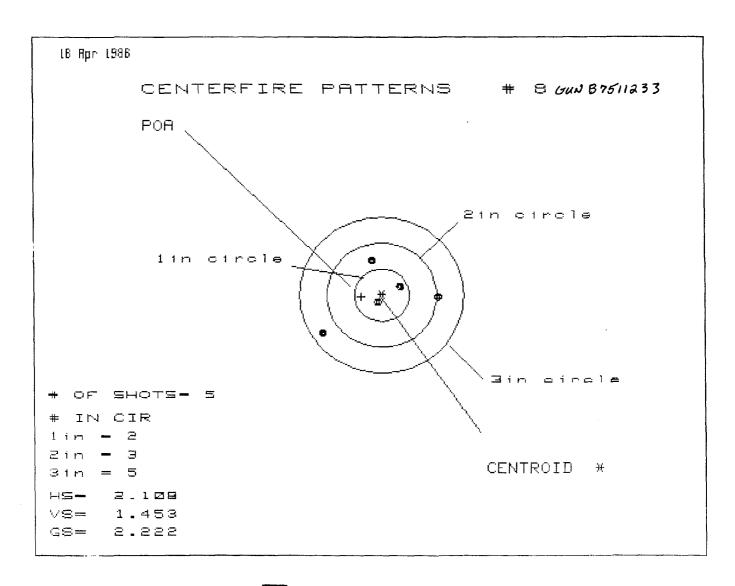
PATTERN # :	2		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	1.939	.460	.282
MINIMUM X :	-1.019	534	384
MAXIMUM Y :	.481	.271	.246
MINIMUM Y :	839	363	~,273
CENTROID X :	206	691	513
CENTROID Y :	.362	.572	.482
POA TO CENTROID in.:	.417	.897	.704
MIN RADIUS :	.155	.258	.105
MEAN RADIUS :	.886	.433	.318
MAX RADIUS :	2.113	.599	.456
HORIZONTAL SPREAD :	2.958	.994	.666
VERTICAL SPREAD :	1.320	.634	.519
EXTREME SPREAD :	3.239	1.179	.844
NUMBER IN ONE INCH	CIRCLE =	2	
NUMBER IN TWO INCH	CIRCLE =	3	
NUMBER IN THREE INCH	CIRCLE =	4	



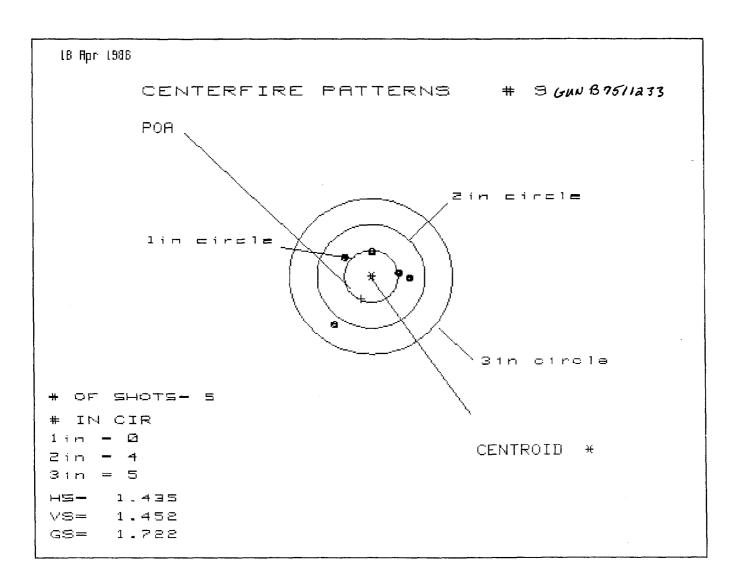
PATTERN #	: 1		
SHOTS (BEST OF)	: 5	4	3
MAXIMUM X	: .43	9 .256	.138
MINIMUM X	:46	4 ~.354	247
MAXIMUM Y	: .36	9 .180	.156
MINIMUM Y	:75	6190	213
HTROID	:10	9219	101
CENTROID Y	: .18	2 .371	.395
POA TO CENTROID in.	: .21	3 .431	.407
MIN RADIUS	: .23	9 .229	.122
MEAN RADIUS	: .45	6 .286	.219
MAX RADIUS	: .87	5 .361	.326
HORIZAMIAL SPREAD	: .90	3 .610	.385
VERTIBAL SPREAM	: 1.12	5 .369	.369
EXTREME SPREAD	: 1.25	i8 .559	.533
NUMBER IN ONE INC	CH CIRCLE =	ز	
NUMBER IN TWO INC	CH CIRCLE =	<b>C</b>	¥.
NUMBER IN THREE INC	CH CIRCLE =	÷	



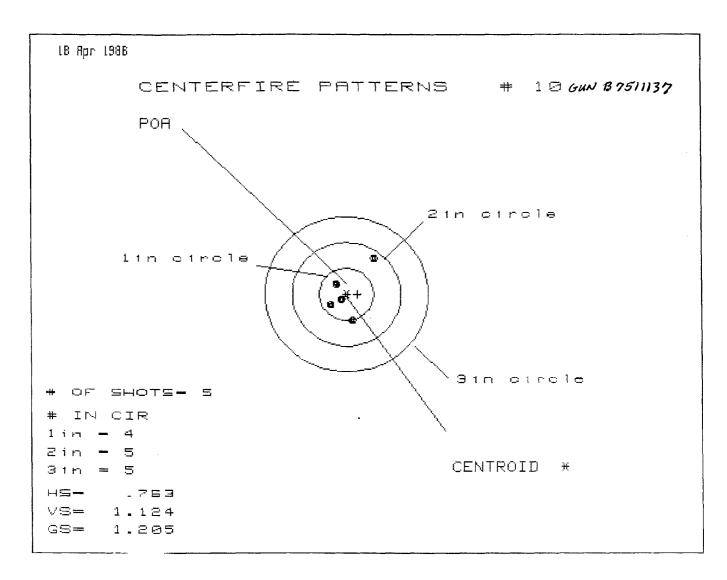
PHITTERN # :	7.		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.851	.690	.602
MINIMUM X :	523	310	398
MAXIMUM Y :	.378	.335	.317
MINIMUM Y :	294	338	226
CENTROID X :	128	341	253
CENTROID Y :	.055	.099	013
POA TO CENTROID in.:	.139	.355	.254
MIN RADIUS :	.442	.357	.305
MEAN RADIUS :	.601	.468	.465
MAX RADIUS :	.869	.720	.681
HORIZONTAL SPREAD :	1.374	1.000	1.000
VERTICAL SPREAD:	.672	.672	.543
EXTREME SPREAD:	1.437	1.080	1.080
NUMBER IN ONE INCH	CIR	1	
NUMBER IN TWO INCH	CIRCLE	5	
NUMBER IN THREE INCH	CIRCLE =	5	



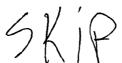
PATTERN #	:	8		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	1.052	.787	.337
MINIMUM X	:	-1.056	488	226
MAXIMUM Y	:	.696	.506	.425
MINIMUM Y	:	757	268	350
CENTROID X	:	.376	.640	.378
CENTROID Y	:	.028	.217	.299
POA TO CENTROID	in.:	.377	.676	.482
MIN RADIUS	:	.135	.075	.345
MEAN RADIUS	:	.722	.516	.398
MAX RADIUS	:	1.300	.824	.482
HORIZONTAL SPREA	ID :	2.108	1.276	.563
VERTICAL SPREA	ID :	1.453	.775	.775
EXTREME SPREA	ID :	2.222	1.480	.783
NUMBER IN OHE	INCH CIRCLE	=	2	
NUMBER IN TWO	INCH CIRCLE	=	3	•
NUMBER IN THREE	INCH CIRCLE	=	5	

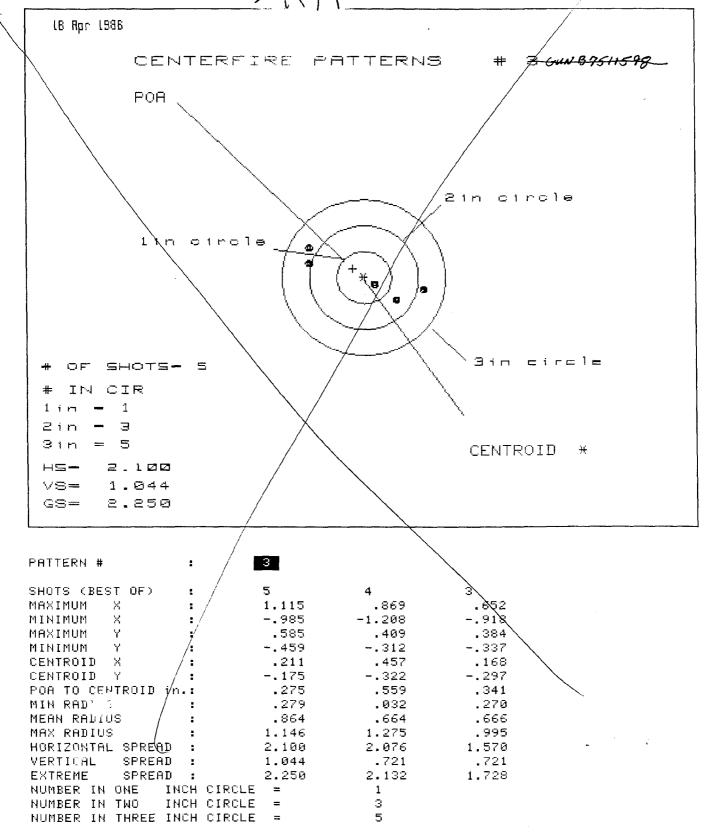


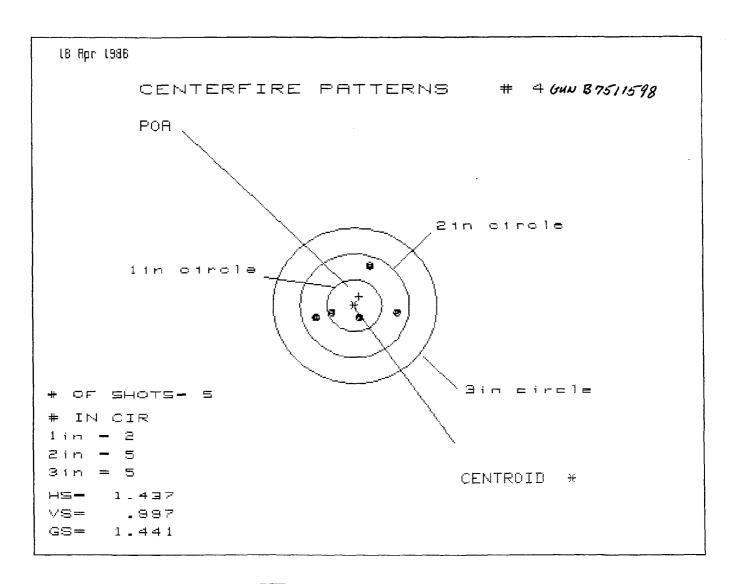
PATTERN #	:	9		
SHOTS (BEST OF)	;	5	4	3
MAXIMUM X	:	.700	.517	.537
MINIMUM X	:	735	696	524
MAXIMUM Y	:	.505	.268	.191
MINIMUM Y	:	947	232	292
CENTROID X	:	.192	.375	.203
CENTROID Y	:	.430	.667	.744
POA TO CENTROID 1	n.:	.471	.765	.771
MIN RADIUS	:	<b>.5</b> 05	.326	.191
MEAN RADIUS	:	.722	.509	.445
MAX RADIUS	:	1.199	.719	.611
HORIZONTAL SPREAD	:	1.435	i.213	1.061
VERTICAL SPREAD	:	1.452	.500	.483
EXTREME SPREAD	:	1.722	1.280	1.131
NUMBER IN ONE I	NOH CIRCL	E =	ව	
NUMBER IN TWO I	NCH CIRCL	E =	4	
NUMBER IN THREE I	NCH CIRCL	E =	5	



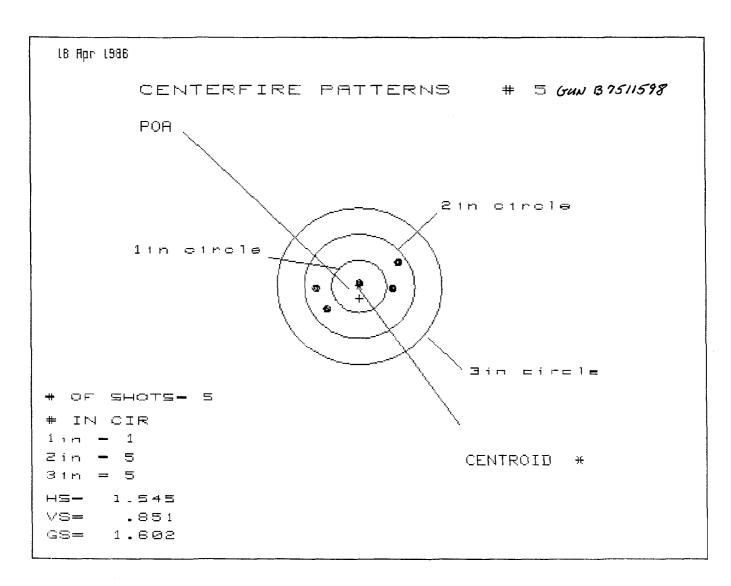
PATTERN #	: 1	10		
SHOTS (BEST OF)	:	)	4	3
MAXIMUM X	:	.499	.191	.093
MINIMUM X	:	264	139	076
MARIMUM Y	:	.656	.359	.258
MINIMUM	:	468	304	180
CENTROID X	:	206	331	394
CENTROID Y	:	0.000	164	063
POA TO CENTROID in.	. :	.206	.369	.399
MIN RADIUS	:	.169	.038	.121
MEAN RADIUS	:	.422	.231	.192
MAX PADIUS	:	.824	.368	.258
HOR1 !TAL SPREAD	:	.763	.330	.169
VERTICAL SPREAD		1.124	.663	.438
EXTREME SPREAD	:	1.205	.717	.442
NUMBER IN ONE IN	CH CIRCLE	=	4	
NUMBER IN TWO 150	CH CIRCLE	=	5	
NUMBER IN THREE IN	OH CIRC:		5	



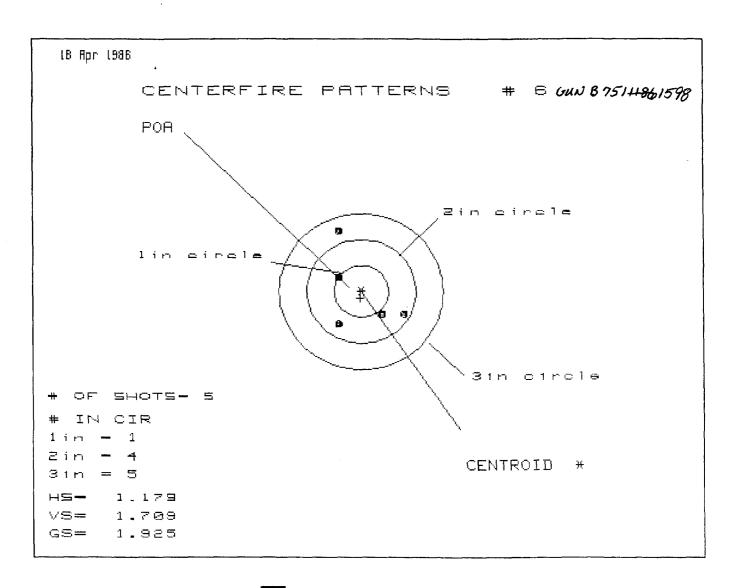




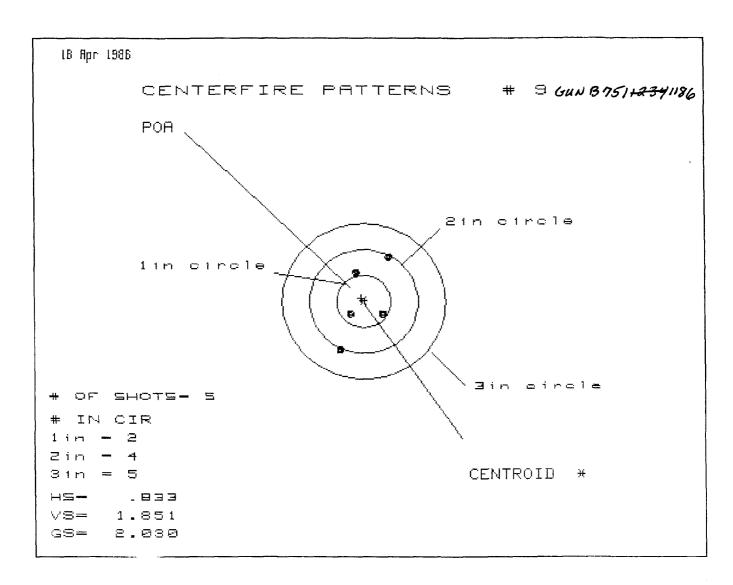
SHOTS (BEST OF) : 5 4 3 MAXIMUM X : .733 .797 .453 MINIMUM X :704640374 MAXIMUM Y : .731 .090 .044	ATTERN #
MINIMUM X :704640374	HOTS (BEST OF)
	IAXIMUM X
MAXIMUM Y : .731 .090 .044	IINIMUM X
	MIXIMUM Y
MINIMUM Y :266083053	MINIMUM Y
CENTROID X :079143409	ENTROID X
CENTROID Y :174357387	ENTROID Y
POA TO CENTROID in.: .191 .385 .563	OA TO CENTROID in
MIN RADIUS : .293 .205 .090	IIN RADIUS
MEAN RADIUS : .596 .498 .307	1EAN RADIUS
MAX RADIUS : .774 .802 .456	1AX RADIUS
HORIZONTAL SPREAD: 1.437 1.437 .827	HORIZONTAL SPREAD
VERTICAL SPREAD: .997 .173 .097	/ERTICAL SPREAD
EXTREME SPREAD: 1.441 1.441 .829	EXTREME SPREAD
NUMBER IN ONE INCH CIRCLE = 2	AUMBER IN ONE IN
NUMBER IN TWO INCH CIRCLE = 5	NUMBER IN TWO - IN
NUMBER IN THREE INCH CIRCLE = 5	NUMBER IN THREE IN



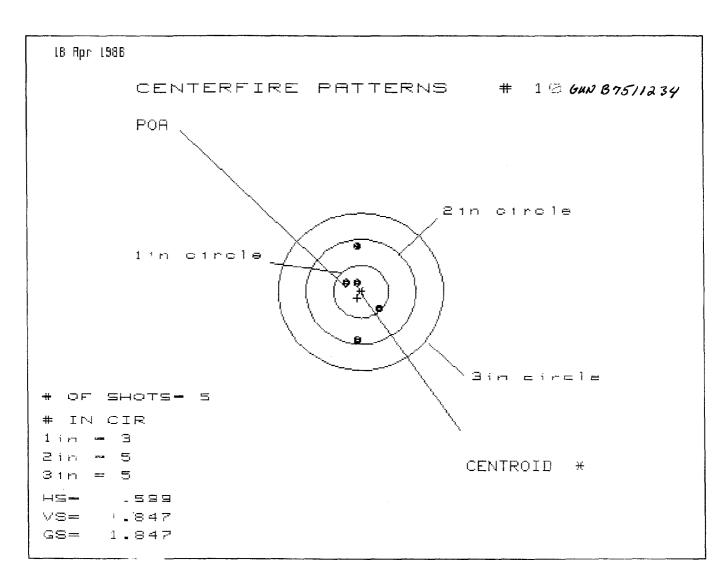
PATTERN #	:	5		
SHOTS (BEST OF)	•	5	4	3
MOMIXOM X	:	.742	.791	.585
BIMUM X	:	803	618	576
MAXIMUM Y	:	.422	.159	.194
MINIMUM Y	:	429	323	288
CENTROID X	;	007	192	.014
CENTROID Y	:	.237	.131	.096
POA TO CENTROID :	in.:	.237	.233	.097
MIN RADIUS	:	.054	.253	.194
MEAN RADIUS	:	.604	.541	.477
MAK RADIUS	: .	.853	.793	.644
HORIZONTAL SPREAD	D :	1.545	1.409	1.161
VERTICAL SPREAD	D :	.851	.482	.482
EXTREME SPREAD	D :	1.602	1.410	1.222
NUMBER IN ONE	INCH CIRCLE	=	1	
NUMBER IN TWO	INCH CIRCLE	=	5	
NUMBER IN THREE :	INCH CIRCLE	=	5	



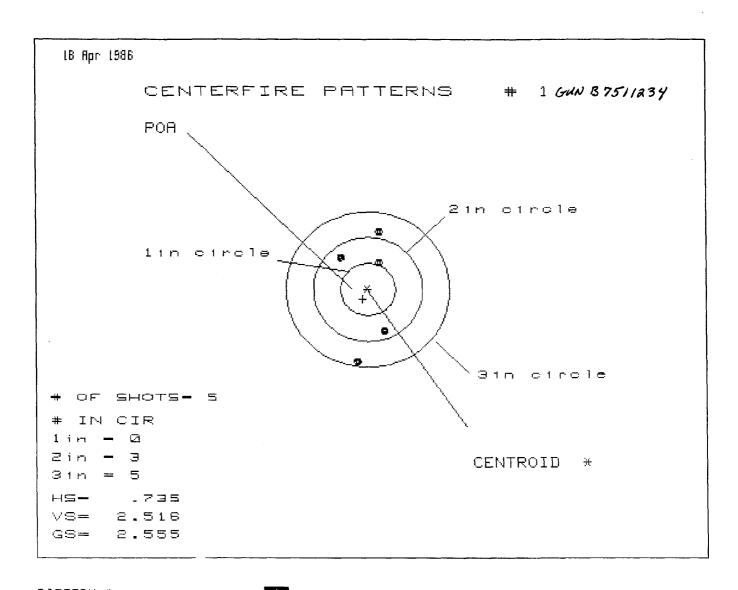
PATTERN # :	6		
SHOTS (BEST OF)	5	4	3
MAXIMUM X :	.786	.692	.507
MINIMUM X :	393	488	~.257
MAXIMUM Y :	1.129	.534	.493
MINIMUM Y :	580	298	33 <del>9</del>
CENTROID X :	.025	.120	111
CENTROID Y :	.129	153	112
POA TO CENTROID in.:	.132	.194	.158
MIN RADIUS :	.461	.299	.425
MEAN RADIUS :	.756	.573	.503
MAX RADIUS :	1.190	.718	.553
HORIZONTAL SPREAD :	1.179	1.179	.764
VERTICAL SPREAD :	1.709	.832	.832
EXTREME SPREAD :	1.925	1.343	.996
NUMBER IN ONE INCH	i CIRCLE =	1	
NUMBER IN TWO INCH	+ CIRCLE =	4	
NUMBER IN THREE INCH	CIRCLE =	5	



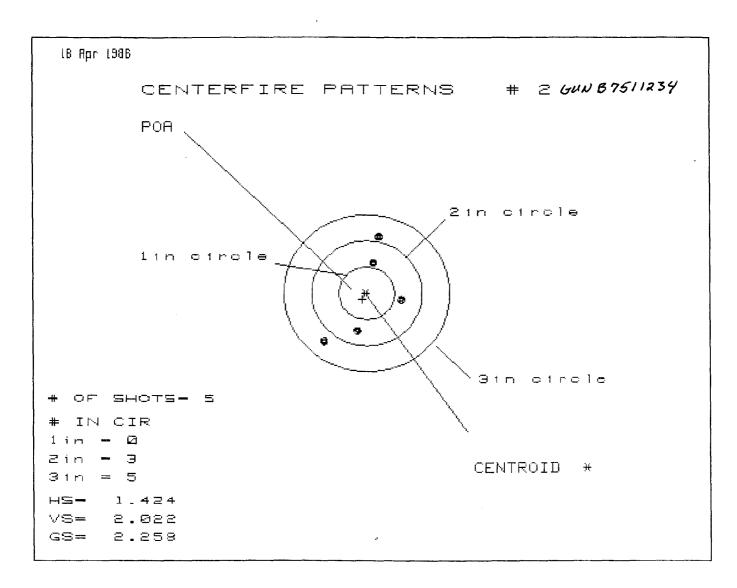
PATTERN #	:	9		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.429	.328	.398
MINIMUM X	:	404	360	251
MAXIMUM Y	:	.887	.646	.521
MINIMUM Y	:	964	482	266
CENTROID X	:	.046	.147	.038
CENTROID Y	:	064	.177	039
POA TO CENTROID in	1.:	.079	.230	.054
MIN RADIUS	:	.354	.398	.366
MEAN RADIUS	:	.681	.569	.460
MAX RADIUS	:	1.045	.724	.541
HORIZONTAL SPREAD	:	.833	.688	.649
VERTICAL SPREAD	;	1.851	1.128	.787
EXTREME SPREAD	:	2.030	1.321	.947
NUMBER IN ONE IN	ACH CIRCLE	=	2	
NUMBER IN TWO IN	ACH CIRCLE	=	4	
NUMBER IN THREE IN	OH CIRCLE	=	5	



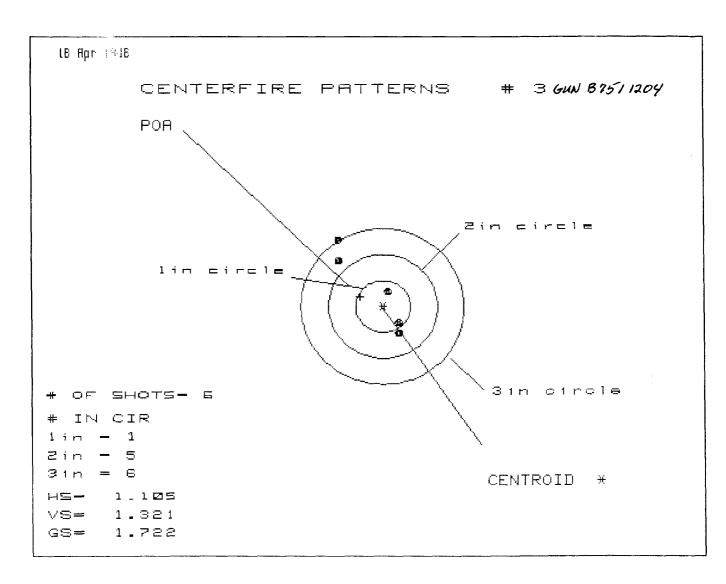
PATTERN # :	10		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.368	.362	.341
MINIMUM X :	231	237	258
MAXIMUM Y :	.885	.644	.185
MINIMUM Y :	962	535	320
CENTRO1, X :	.072	.078	.099
CENTROID Y :	.123	.364	.149
POA TO CENTROID in.:	.143	.372	.179
MIN RADIUS :	.170	.100	.158
MEAN RADIUS :	.561	.408	.314
MA. RADIUS :	.963	.647	.467
HORIZONTAL SPREAD :	.599	.599	.599
VERTICAL STREAD :	1.847	1.179	.505
EXTREME SHREAD :	1.8	1.254	.783
NUMBER IN ONE THOH	CIRCLE =	3	
NUMBER IN TWO 1MCH	CIRCLE =	5	
NUMBER IN THREE INCH	CIRCLE =	5	



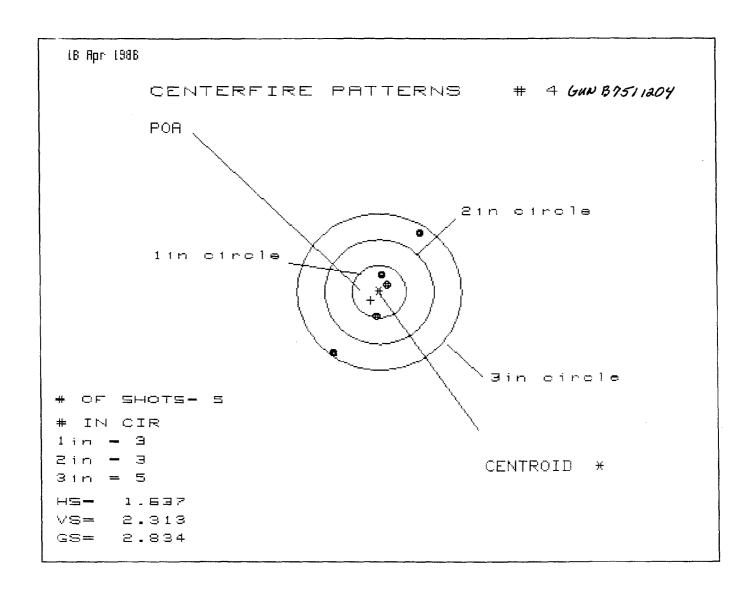
PATTERN # :			
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.263	.211	.272
MINIMUM X :	472	524	463
MAXIMUM Y :	1.086	.728	.532
MINIMUM Y :	-1.430	-1.164	921
CENTROID X :	.101	.153	.092
CENTRAID Y :	.185	.543	.300
POA TO CENTROID in.:	.211	.564	.314
MI: ADIUS :	.535	.195	.433
MEGN RADIUS :	.948	.682	.700
MAX RADIUS :	1.445	1.183	.960
HORIZONTAL SPREAD :	.735	.735	.735
VERTICAL SPREAD :	2.516	.892	1.453
EXTREME SPREAD :	2.555	1.892	1.628
NUMBER IN ONE INCH	CIRCLE =	Ø	
NUMBER IN TWO INCH	CIRCLE =	3	
NUMBER IN THREE INCH	CIRCLE =	5	



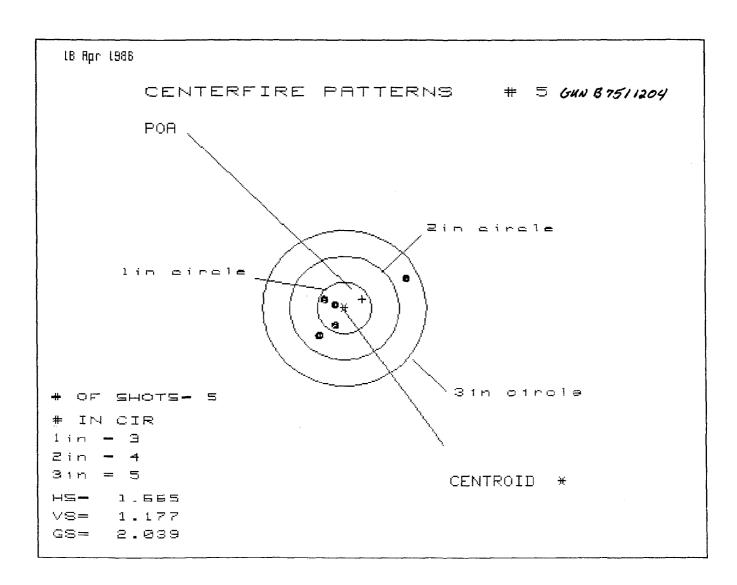
PATTERN # :	2		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.626	.426	.428
MINIMUM X :	798	380	378
MAXIMUM Y :	1.120	.895	.674
MINIMUM Y :	902	909	611
CENTROID X :	.078	.278	.276
CENTROID Y :	.116	.341	.043
POA TO CENTROID in.:	.140	.440	.279
MIN RADIUS :	.619	.379	.433
MEAN RADIUS :	.862	.705	.609
MAX RADIUS :	1.204	.985	.718
HORIZONTAL SPREAD :	1.424	.806	.806
VERTICAL SPREAD :	2.022	1.804	1.285
EXTREME SPREAD :	2.258	1.845	1.326
NUMBER IN ONE INCH	CIRCLE =	Ø	
NUMBER IN TWO INCH	CIRCLE =	3	
NUMBER IN THREE INCH	FOIRCLE =	5	



PATTERN # :	3		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.265	.055	.072
MINIMUM X :	840	141	122
MAXIMUM Y :	.858	.511	.428
MINIMUM Y :	463	248	225
CENTROID X :	.418	.628	.609
CENTROID Y :	189	404	321
POA TO CENTROID in.:	.459	.747	.689
MIN RADIUS :	.211	.125	.210
MEAN RADIUS :	.664	.265	.297
MAX RADIUS :	.956	.530	.445
HORIZONTAL SPREAD :	1.105	.196	.194
VERTICAL SPREAD :	1.321	.759	.653
EXTREME SPREAD :	1.722	.784	.681
NUMBER IN ONE INCH	CIRCLE =	i	
NUMBER IN TWO INCH	CIRCLE =	5	
NUMBER IN THREE INCH	CIRCLE =	$\epsilon$	



PATTERN # :	4		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	.749	.527	.110
MINIMUM X :	888	240	065
MAXIMUM Y :	1.145	.853	.352
MINIMUM Y :	-1.168	766	481
CENTROID X :	.157	.379	.204
CENTROID Y :	.164	.456	.171
POA TO CENTROID in.:	.227	.593	.266
MIN RADIUS :	.208	.168	.170
MEAN RADIUS :	.775	.551	.337
MAX RADIUS :	1.467	1.003	.486
HORIZONTAL SPREAD :	1.637	.767	.175
VERTICAL SPREAD :	2.313	1.619	.833
EXTREME SPREAD :	2.834	1.791	.833
NUMBER IN ONE INCH	CIRCLE =	3	
NUMBER IN TWO INCH	CIRCLE =	3	
NUMBER IN THREE INC	CIRCLE =	5	



PATTERN # :	5		
SHOTS (BEST OF) :	5	4	3
MAXIMUM X :	1.164	.168	.098
MIHIMUM X :	501	211	162
MAXIMUM Y :	.615	.307	.171
MINIMUM Y :	562	408	276
CENTROID X :	330	620	550
CENTROID Y :	169	323	187
POA TO CENTROID in.:	.370	.699	.581
MIN RADIUS :	.180	.219	.123
MEAN RADIUS :	.596	.319	.217
MAX RADIUS :	1.316	.459	.293
HORIZONTAL SPREAD :	1.665	.379	.260
VERTICAL SPREAD:	1.177	.715	.447
EXTREME SPREAD :	2.039	.735	.517
NUMBER IN ONE INCH	CIRCLE =	3	
NUMBER IN TWO INCH	CIRCLE =	4	
NUMBER IN THREE INCH	CIRCLE =	5	

Subfile: B7511155	5	
**************************************		**************************************
*	Center fire patterns	*
*	ON DATA SET:	*
*	SUMMARY STATISTICS	*
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# BASIC STATISTICS

VARIABLE						
	# OF	# OF				
NAME	OBS.	MISS	SUM	MEAN	VARIANCE	STD.DEV.
MEAN RAD.	3	Ø	2.4093	.8031	.0749	.2736
HORIŽONTAL	3	Ø	5.0160	1.6720	.0894	.2990
VERTICAL	3	Ø	5.4420	1.8140	1.1426	1.0689
MAX_SPREAD	3	0	6.8214	2.2738	.5791	.7610

VARIAB:	COEFFICIENT	STD. ERROR	95 %	ICE INTERVAL	
NAME	OF VARIATION	OF MEAN		UPPER LIMIT	
MEAN RAD.	34.06691	.t <sup>.</sup> )6	.12817	1.47805	
HORIŽONTAL	17.88278	.17263	.93439	2.40961	
VERTICAL	58.92667	.61715	82296	4,45096	
MAX_SPREAD	33.46786	.43936	.39649	4.15112	

VARIABLE	SKEWNERU	KURTOSIS
MEAN_RAD.	.00013	-1.50000
HORIZONTA:	.70248	-1.50000
VERTICA!	.06060	-1.50000
MAX_SPREAD	11547	-1.50000

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER KINZER V. REMINGTON

Subfile: Bi	7511217	The same has been seen the same seen the sam				
		1	BASIC STA	TISTICS		
VARIABLE  NAME  MEAN_RAD.  HORIZONTAL  VERTICAL	# OF # OF OBS. MISS 3 0 3 0 3 0	5.0	735 040	MEAN .7245 1.6680 1.2757		.411 1.113
			299 		٠- ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ - ١٠٠ -	
VARIABLE	COEFFICIENT	stp.		95 % CONFI	DENCE INTERVA	iL
	OF VARIATION 56.73468 66.78148 58.66756	OF	ERROR MEAN .23732	LOWER LIMIT	UPPER LIMI 1 1.73 4 4.41 8 3.12	IT 3852 I594 2192
NAME MEAN_RAD. HORIZONTAL VERTICAL	OF VARIATION 56.73468 66.78148 58.66756	. OF	ERROR MEAN .23732 .64312 .43209	LOWER LIMIT 2895 -1.0799 5705 5719	UPPER LIMI 1 1.73 4 4.41 8 3.12	IT 3852 I594 2192

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Subfile: B7	51123	33							
			BA	SIC STAT	ISTICS				
VARIABLE  NAME  MEAN_RAD.  HORIZONTAL  VERTICAL  MAX_SPREAD	# OF OBS. 3 3 3	MISS 0 0	SUM 2.044 4.917 3.577 5.381	9 0 0	EAN .681 1.639 1.193	.6 90 23	.00 .16	)49 559 )31	3TD.DEV. .0 .4 .4
VARIABLE NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD	OF Y	FFICIENT /ARIATION 10.30316 24.85110 37.79330 22.15497	OF ME	AN.	LOWER (	CONFIDE IM : .50838 .63420 .08068 .81339	UPPER	LIMIT .8548	0 8
VARIABLE		SKEWNES	Đ	KURTOSIS	;				
MEAN_RAD. HORIZONTA: VERTICAL MAX_SPREAD		,6 7	9786 8931 <b>0710</b> 2 <b>0</b> 62	- 1 - 1	.52000 .50000 .50000				
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Subfile: B7511137

# PASIC STATISTICS

VARIABLE

# OF	# OF	SUM	MEAN	VARIANCE	STD.DEV.
OBS.	MISS	1.7636	.5879	.0668	.2584
3	0	4.6240	1.5413	1.5101	1.2289
3	0	3.5690	1.1897	.0127	.1129
3	0	5.7018	1.9006	1.3445	1.1595

VARIABLE NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD	9.48779	STD. ERROR OF MEAN .14919 .70949 .06517 .66946	95 % COMFIDE LOWER LIMIT 04961 -1.49018 .91122 95992	NCE INTERVAL UPPER LIMIT 1.22531 4.57284 1.46812 4.76110	
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VARIABLE	CACHHEON	KUNTOSIS
MEAN_RAD.	.69287	-1.50000
HORIZONTAL	.69880	-1.50000
VERTICAL	.70704	-1.50000
MAX_SPREAD	.70541	-1.50000

CONFIDENTIAL-SUBJECT TO PROTECTIVE ORDER KINZER V. REMINGTON

	and a supplementary of the sup	and the second s	niya saranan sariyi sayah salanka	Olympica Michigan (1918—1922) Michigan (1918—1924)	· · · · · · · · · · · · · · · · · · ·			On the state of th	4. 1500/F (MA) 775
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and the state of t	of a second second second	Phil almost a state of the agency of the Model of Stage	4000 <del>1000 1</del> 00 - 80 - 80 - 80		CT			Banagana (A. Johnson and P. Per Pillia V. J.	.a. 1417.20
Subfile: B7	511598				er en eng all lage var bag ill.				
				BASIC STA	ATISTICS				
	# OF # OOBS. MIS	S S	4. 3.9	9558 1610 5570 9675	MEAN .65 1.38 1.18 1.65	19 70 57	VARIANCE .0081 .0354 .2107 .0606		DEV 
	· · · · · · · · · · · · · · · · · · ·							· · · ·- ·- ·- ·- ·- ·- ·- ·-	
VARIABLE NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD	OF VARI 13 13	.80021	STD OF	. ERROR MEAN .05194 .10857 .26504 .14215	LOWER	LIMIT .42999	.8 1.8 2.3	11T 87388 85091	
VARIABLE	s	KEWNESS		KURTOS	IS				
MEAN_RAD. HORIZONYAL VERTICAL		.799 45 .02	395		-1,50000 -1,50000 -1,50000				
MAX SPREAD		.38			-1.50000				

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Subfile: B7	'511186				
		and the second	. T. C. T. T. T. T. T. C. T.		
		ensit t	TATISTICS		
VARIABLE	# OF # OF				
MEAN DOD	OBS. MISS	SUM 2.1277	MEAN .7092	VARIANCE .0008	
HORIZONTAL	3 0	3.7620	1.2540	.2448	. 49
VERTICAL MAX_SPREAD	3 9 3 9 3 9	5.0230 5.7471	1.6743 1.9157	.0315 .0099	.17 .09
	39.45725 10.60158	OF MEAN .016 .285 .102	LOWER LIMIT 11 .640 57 .033 48 1.236	UPPER LIMI 42 .77 38 2.47 44 2.11	T 806 462 223
VARIABLE	SKEWNES	S KURT	osis		
MEAN_RAD.	-, C	7791	-1.50088		
MEAN RAD. HORIZONTAL	- , 년 . →	7791 2148	-1.50000 -1.50000		
MEAN_RAD.	ी . स ~. ⊍	7791	-1.50088	·	<b></b>
MEAN_RAD. HORIZONTAL VERTICAL	ी . स ~. ⊍	7751 2148 1725	-1.50000 -1.50000 1.50000 -1.50000		· · · · · · · · · · · · · · · · · · ·

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		a salah di dibanggan dan kanggan di salah di sa			<u> </u>
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Subfile: B7	<del></del>				
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		PASIC 5	ATISTICS		
HODIONE					
NAME		SUM 2.3706	MEAN .7902	VARIANCE .0414	
HORIZONTAL VERTICAL MAX_SPREAD	3 0 3 0 3 0 3 0	2.7580 6.3850 6.6597	.9193 2.1283 2.2199	.1956 .1204 .1262	. : . : . :
VARIABLE	COEFFICIENT OF VARIATION	STD. ERROR	95 % CONF	IDENCE INTERVA	L
MEAN RAD.	25.74798	.11747	7 .288	оруны Limi 1.29 1.29 82 2.01	213
1101120111112	10111201				
HERTICOL	46.00400	2002		2.98 245 2.98	0422
VERTICAL MAX_SPREAD	16.30122 16.00470	.2003 .2051:			
VARIABLE	SE ENHESS	Kükto	\$15		
MEAN_RAD. HORIZONTAL	⊣.59 .£3		-1.50000 -1.50000		
VERTICAL MAX SPREAD	.51 19	016	-1.50000 -1.50000		

**************************************	· · · · · · · · · · · · · · · · · · ·	 		
	B7511204			

# BASIC STATISTICS

AHKIHRLE						
	# OF	# OF				
NAME	OBS.	MISS	SUM	MEAN	VARIANCE	STD.DEV.
MEAN_RAD.	3	Ø	2.0356	.6785	.0082	.0906
HORIZONTAL	3	0	4.4070	1.4690	.0996	.3155
VERTICAL	3	9	4.8110	1.6037	.3825	.6185
MAX_SPREAD	3	0	6.5949	2.1983	.3279	.5726

VARIABLE NAME	COEFFICIENT OF VARIATION	STD. ERROR OF MEAN	95 % CONFIDE LOWER LIMIT	NCE INTERVAL UPPER LIMIT
MEAN RAD.	13.34862	.05229	.45510	.90199
HORIŽONTAL	21.48019	.18218	.69058	2.24742
VERTICAL	38.56822	.35709	.07786	3.12947
MAX_SPREAD	26.04704	.33059	.78576	3.61085

VARIABLE	SKEWNESS	KURTOSIS	
MEAN_RAD.	.28337	-1.50000	
HORIZONTAL	70085	-1.50000	
VERTICAL	.66423	~1.50000	
MAX_SPREAD	.47153	~1.50000	

Box #12

manusments - Accuracy

deport to Such for proofreading 4/21/

RD-69-B

# REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE





"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

cc: W.H. Coleman, II/File

J.W. Bower
J.G. Hill
J.R. Snedeker
F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT REPORT# 860972

MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

# MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

ABSTRACT:

Research and Development finds the Trial and Pilot Evaluation of the Model XP-100 .223 REM caliber to be acceptable. However, the following should be investigated, by production:

1. During the Visual inspection all of the pistols were found to have some random spots of glue, and the stock luster was mismatched. More care needs to be taken during the assembly of the stocks.

Prepared by: F.L. SUPRY Date Prepared: 4/18/86

proofread and cleared by:	
J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab	·
W.H. COLEMAN, II New Products Research Lab Director	

REP.#860972

W.O.# 925C0805

MODEL XP-100 .223 REM. CALIBER TRIAL AND PILOT EVALUATION

TO: J.R. Snedeker FROM: F.L. Supry

#### INTRODUCTION:

On April 07, 1986 a request to conduct a Trial and Pilot Evaluation on the Model XP-100 .223 REM. caliber pistol was received by the Test Lab. The evaluation would use eight guns, withdrawn from the warehouse, and consist of Visual Inspection, and 100 Yard Accuracy.

SCOPE OF TEST:

To determine if the production run samples meet Remington Specifications set by the Research Design Section.

TEST RESULTS:

The Model XP-100, chambered in the .223 REM. caliber, was found to be acceptable in all phases of the Trial and Pilot Evaluation.

#### REPORT TEXT:

# 1. VISUAL INSPECTION:

- A. The visual inspection committee found no major items in the appearance of the pistols inspected.
- B. The following general comments were made in overall reference to the pistols:
  - a. The luster of the pistols needs improvement.
  - b. The removing of the excess glue needs improvement.
- C. The pistols used in the visual inspection were:

B7511233 B7511217 B7511204 B7511234 B7511598 B7511186

D. Comments recorded for each individual pistol are located in the appendix of this report.

# 2. ACCURACY:

A. Eight (8) pistols were tested for 100 yard accuracy.

B7511233 B7511217 B7511204 B7511137 B7511234 B7511598 B7511186 B7511155

- B. The following averages were established:
  - a. Group Size: 1.99 inches

b. Horizontal Spread: 1.42 inches

c. Vertical Spread: 1.51 inches

B. Accuracy results per individual pistol are located in the appendix of this report.

#### TEST PROCEDURE:

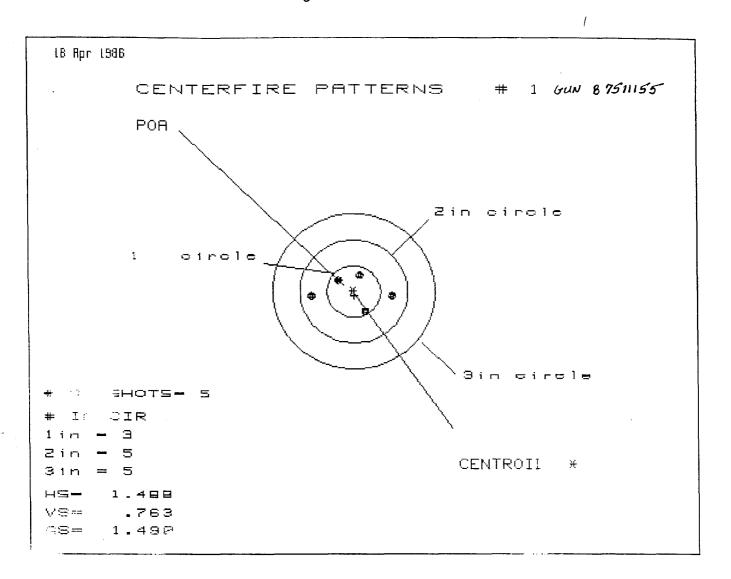
# 1. VISUAL INSPECTION:

- A. The Visual Inspection Committee consisted of W. Warren, (Q.C.); R. Howe, F. Supry, and T. Douglas, (Research).
- B. Six (6) of the eight (8) pistols were used for the visual inspection.
- C. Each pistol was wiped down with a clean white Coyne towel, and examined by each member of the Visual Inspection Committee. All comments were recorded.
- D. Following the visual inspection, headspace and trigger pull measurements were taken on all eight pistols.

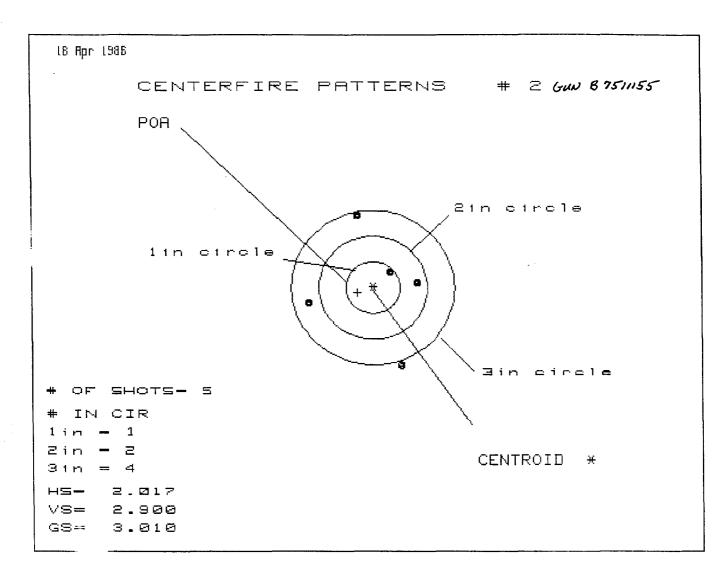
# 2. ACCURACY:

- A. The accuracy was shot by T. Douglas, J. Ronkainen, and K. Calkins, (Research), at the R & D 100 yard range.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 12X scope.
- C. Remington ammunition, index R223R2; code U08-002301, 55 grain hollow point, was used for the 100 yard accuracy test.
- E. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- F. A total of three (3), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- G. The patterns were analyzed for group size, horizontal spread, and vertical spread, using the HP 9000 computer. The averages were calculated for each pistol.

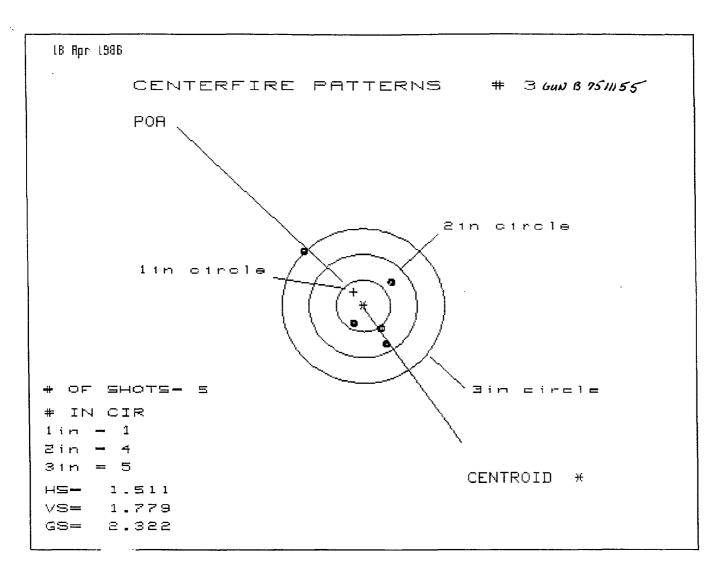
APPENDIX



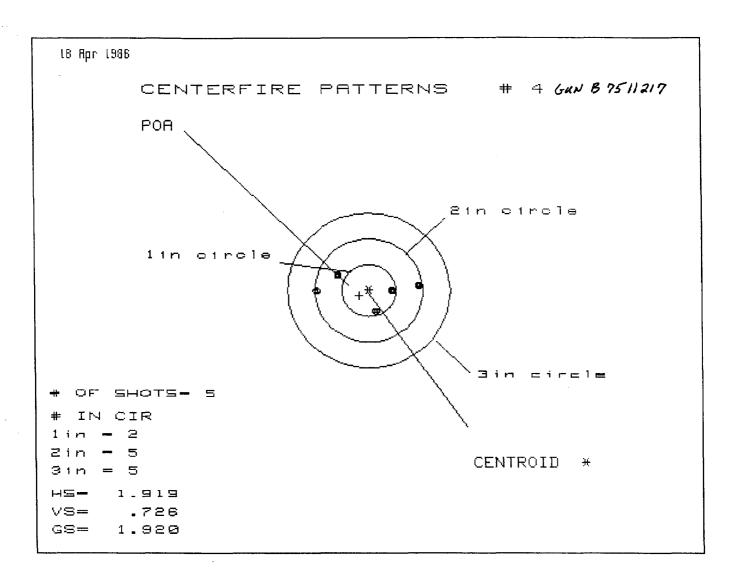
PATTERN #	:	1		
SHC. " BEST OF)	:	5	4	3
MAKIGOM X	:	.693	.494	.216
DINIMUM Y	:	795	498	333
MAXIMUM	:	.360	.352	.313
:INIMUM Y	:	403	411	450
CENTROID X	:	011	.188	.023
CENTROID Y	:	.081	.089	.128
POA TO CENTROID in	. :	.081	.208	.130
MIN F 'US	:	.352	.355	.334
MEAN . JIUS	:	.543	.451	.398
MAX RADIUS	:	.796	.528	.499
HORIZONTAL SPREAD	:	1.488	.992	.549
VERTICAL SPREAD	:	.763	.763	.763
EXTREME SPREAD	:	1.490	1.035	.804
NUMBER IN DHE IN	ICH	CIRCLE =	3	
NUMBER TH TWO IN	ЮH	CIRCLE	c	
NUMBER IN THREE IN	ЮH	CIRCLE	ε	



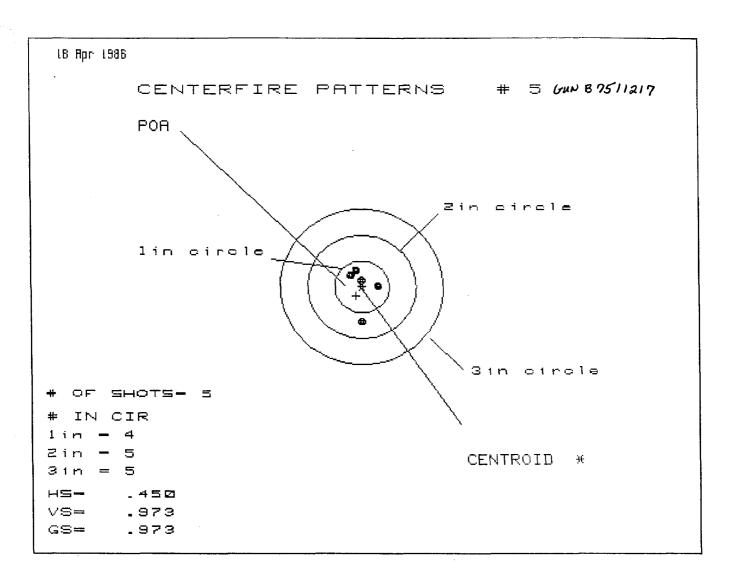
PATTERN #	:	2		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.797	.918	.850
MINIMUM X	:	-1.220	-1.100	-1.167
MAXIMUM Y	:	1.400	1.024	.243
MINIMUM Y	:	-1.500	630	289
CENTROID X	:	.287	.167	.234
CENTROID Y	:	.096	.471	.130
POA TO CENTROID in.	. :	.303	.500	.267
MIN RADIUS	:	.382	.396	.399
MEAN RADIUS	:	1.088	.918	.817
MAX RADIUS	:	1.576	1.267	1.202
HORIZONTAL SPREAD	:	2.017	2.017	2.017
VERTICAL SPREAD	:	2.900	1.655	.532
EXTREME SPREAD	:	3.010	2.045	2.045
NUMBER IN ONE IN	CH CIRCLE	=	1	•
NUMBER IN TWO IN	CH CIRCLE	=	2	
NUMBER IN THREE IN	CH CIRCLE	=	4	



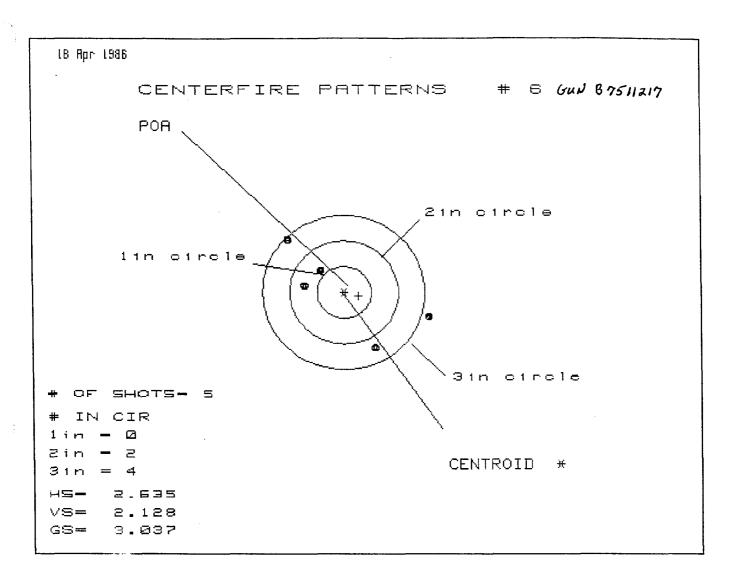
PATTERN #	3			4.
SHOTS (BEST OF)	5	. 4	3	
MAXIMUM X	.474	.214	.279	
MINIMUM X	-1.037	419	354	
MAXIMUM Y	1.073	.707	.561	
MINIMUM Y	706	438	338	
CENTROID X	.182	.442	.377	
CENTROID Y	268	536	390	
POA TO CENTROID in.	.324	.695	.542	
MIN RADIUS	.381	.192	.346	
MEAN RADIUS	.778	.459	.464	
MAX RADIUS	1.492	.739	.627	
HORIZONTAL SPREAD	: 1.511	.633	.633	
VERTICAL SPREAD	1.779	1.145	.899	•
EXTREME SPREAD	2.322	1.145	1.008	
NUMBER IN ONE INC	H CIRCLE =	1		_
NUMBER IN TWO INC	H CIRCLE =	4		-
NUMBER IN THREE INC	H CIRCLE =	5		



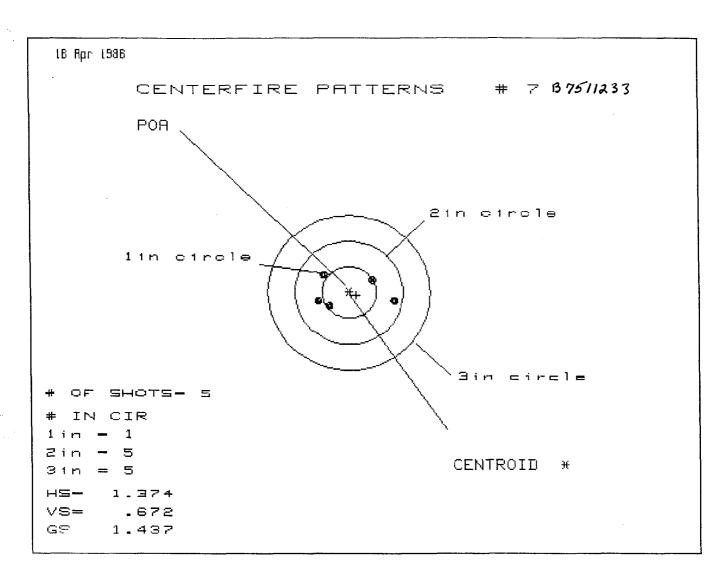
PATTERN #	:	4		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.959	.652	.412
MINIMUM X	:	960	720	579
MAXIMUM Y	:	.308	.332	.356
MINIMUM Y	:	418	394	370
CENTROID X	:	.177	063	.177
CENTROID Y	:	.099	.075	.051
POA TO CENTROID in	n.:	.203	.098	.184
MIN RADIUS	:	.414	.475	.406
MEAN RADIUS	:	.:689	.604	.499
MAX RADIUS	:	.964	.724	.680
HORIZONTAL SPREAD	:	1.919	1.372	.991
VERTICAL SPREAD	:	.726	.726	.726
EXTREME SPREAD	:	1.920	1.374	1.048
NUMBER IN ONE I	NCH CIRCLE	=	2	•
NUMBER IN TWO I	NCH CIRCLE	=	5	
NUMBER IN THREE I	NCH CIRCLE	=	5	



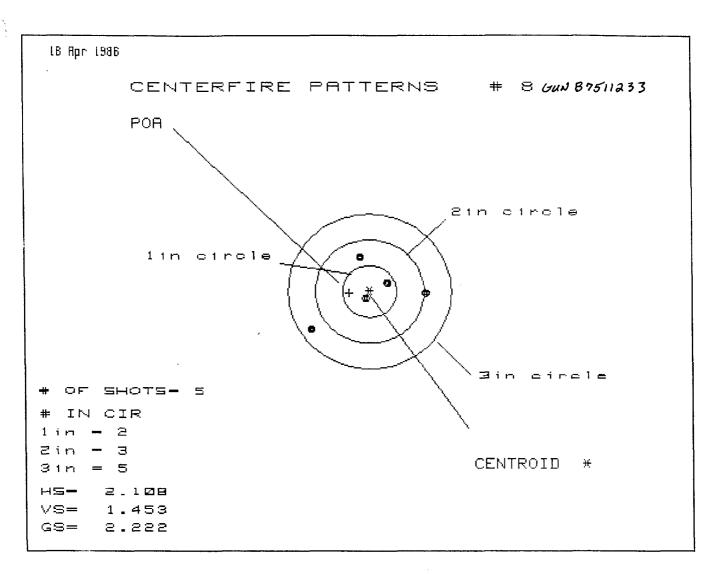
PATTERN #	:	5		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.288	.278	.253
MINIMUM X	:	162	173	197
MAXIMUM Y	:	.317	.153	.124
MINIMUM Y	:	656	165	115
CENTROID X	:	.107	.118	.142
CENTROID Y	:	.174	.338	.288
POA TO CENTROID	in.:	.205	.358	.321
MIN RADIUS	:	.106	.069	.057
MEAN RADIUS	:	.332	.187	.189
MAX RADIUS	:	.658	.323	.278
HORIZONTAL SPREA	D:	.450	.450	.450
VERTICAL SPREA	D:	.973	.318	.239
EXTREME SPREA	D :	<b>.97</b> 3	.510	.510
NUMBER IN ONE	INCH CIRCLE	=	4	
NUMBER IN TWO	INCH CIRCLE	=	5	_
NUMBER IN THREE	INCH CIRCLE	=	5	



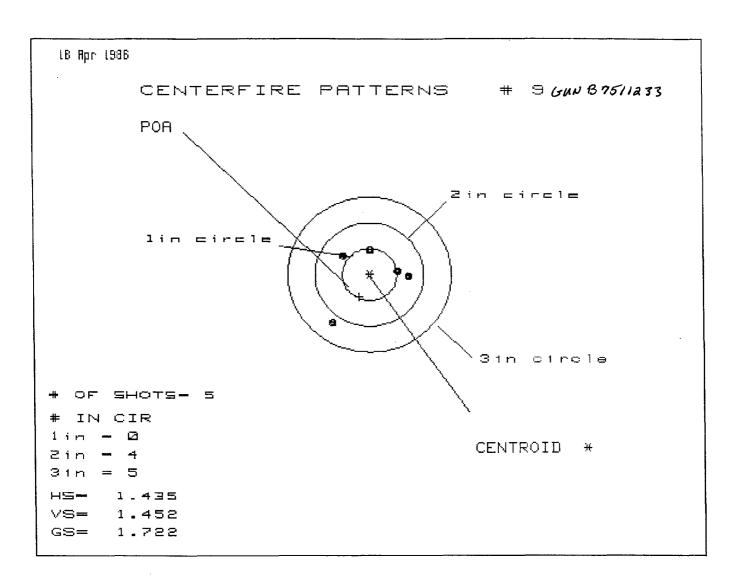
PATTERN #	:	6		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	i	1.592	1.011	.796
MINIMUM X	:	-1.043	645	556
MAXIMUM Y	:	1.016	.892	.621
MINIMUM Y	:	-1.112	-1.236	938
CENTROID X	:	266	663	448
CENTROID Y	:	.069	.193	105
POA TO CENTROID in	1.:	.274	.691	.460
MIN RADIUS	•	.616	.324	.640
MEAN RADIUS	:	1.152	.841	.845
MAX RADIUS	:	1.667	1.597	1.231
HORIZONTAL SPREAD	:	2.635	1.657	1.352
VERTICAL SPREAD	:	2.128	2.128	1.559
EXTREME SPREAD	:	3.037	2.697	1.872
NUMBER IN ONE IN	NCH CIRCL	E =	0	•
NUMBER IN TWO IN	NCH CIRCL	E =	2	
NUMBER IN THREE IN	NCH CIRCL	E =	4	



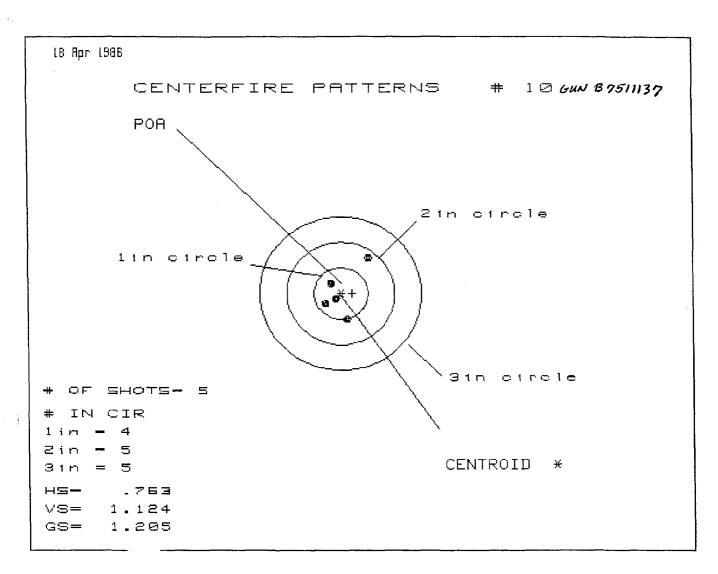
SHOTS (BEST OF): 5 4 3  MAXIMUM X: .851 .690 .602  MINIMUM X:523310398  MAXIMUM Y: .378 .335 .317  MINIMUM Y:294338226  CENTROID X:128341253  CENTROID Y: .055 .099013	PATTERN # :	7			
MINIMUM X :523310398 MAXIMUM Y : .378 .335 .317 MINIMUM Y :294338226 CENTROID X :128341253	SHOTS (BEST OF) :	5	4	3	
MAXIMUM Y : .378 .335 .317 MINIMUM Y :294338226 CENTROID X :128341253	MAXIMUM X :	.851	.690	.602	
MINIMUM Y :294338226 CENTROID X :128341253	MINIMUM X :	523	310	398	
CENTROID X :128341253	MAXIMUM Y :	.378	.335	.317	
	MINIMUM Y :	294	338	226	
CENTROID Y : .055 .099013	CENTROID X :	128	341	253	
	CENTROID Y :	.055	.099	013	
POA TO CENTROID in.: .139 .355 .254	POA TO CENTROID in.:	.139	.355	.254	
MIN RADIUS : .442 .357 .305	MIN RADIUS :	.442	.357	.305	
MEAN RADIUS : 465 .465	MEAN RADIUS :	.601	.468	.465	
MAX RADIUS : .869 .720 .681	MAX RADIUS :	.869	.720	.681	
HORIZONTAL SPREAD : 1.374 1.000 1.000	HORIZONTAL SPREAD :	1.374	1.000	1.000	
VERTICAL SPREAD: .672 .672 .543	VERTICAL SPREAD :	.672	.672	.543	
EXTREME SPREAD: 1.437 1.080 1.080	EXTREME SPREAD :	1.437	1.080	1.080	
NUMBER IN ONE   INCH CIRCLE   1	NUMBER IN ONE INCH	CIRCLL	1		
NUMBER IN TWO INCH CIRCLE 5	NUMBER IN TWO INCH	LCIRCLE	5		_
NUMBER IN THREE INCH CIRCLE = 5	NUMBER IN THREE INCH	CIRCLE =	5		



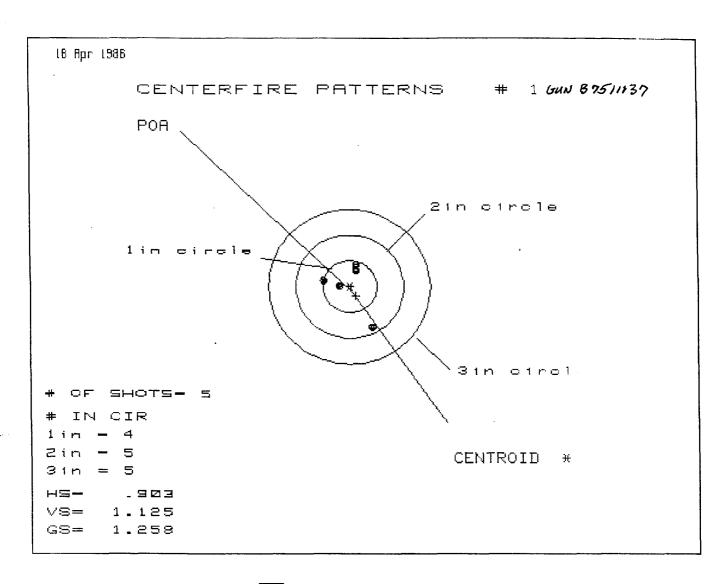
PATTERN #	:	8		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	1.052	.787	.337
MINIMUM X	:	-1.056	488	226
MAXIMUM Y	:	.696	.506	.425
MINIMUM Y	:	757	268	350
CENTROID X		.376	.640	.378
CENTROID Y	:	.028	.217	.299
POA TO CENTROID	in.:	.377	676	.482
MIN RADIUS	:	.135	.075	.345
MEAN RADIUS	:	.'722	.516	.398
MAX RADIUS	:	1.300	.824	.482
HORIZONTAL SPREA	D :	2.108	1.276	.563
VERTICAL SPREA	D :	1.453	.775	.775
EXTREME SPREA	D :	2,222	1.480	.783
NUMBER IN ONE	INCH CIRCLE	=	2	•
NUMBER IN TWO	INCH CIRCLE	=	3	
NUMBER IN THREE	INCH CIRCLE	=	5	



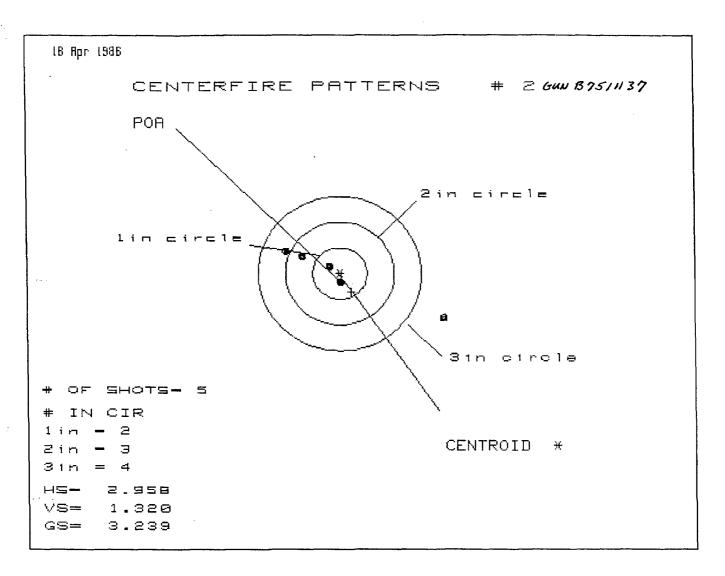
PATTERN #	:	9		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.700	.517	.537
MINIMUM X	:	735	696	524
MAXIMUM Y	:	.505	.268	.191
MINIMUM Y	:	947	232	292
CENTROID X	:	.192	.375	.203
CENTROID Y	:	.430	.667	.744
POR TO CENTROID in	. :	.471	.765	.771
MIN RADIUS	:	.505	.326	.191
MEAN RADIUS	:	.722	.509	.445
MAX RADIUS	:	1.199	.719	.611
HORIZONTAL SPREAD	:	1.435	1.213	1.061
VERTICAL SPREAD	:	1.452	.500	.483
EXTREME SPREAD	:	1.722	1.280	1.131
NUMBER IN ONE IN	CH CIRCLE	=	0	•
NUMBER IN TWO IN	CH CIRCLE	=	4	
NUMBER IN THREE IN	CH CIRCLE	<b>=</b>	5	



PATTERN #	: [	10		
SHOTS (BEST OF)	:	)	4	3
MAXIMUM X	:	.499	.191	.093
MINIMUM X	:	264	139	076
MAXIMUM Y	:	.656	.359	.258
MINIMUM	:	468	304	180
CENTROID X	:	206	331	394
CENTROID Y	:	0.000	164	063
POA TO CENTROID in	. :	.206	.369	.399
MIN RADIUS	:	.169	.038	.121
MEAN RADIUS	I	.422	.231	.192
MAX PADIUS	:	.824	.368	.258
HORI !TAL SPREAD	:	.763	.330	.169
VERTICAL SPREAD	:	1.124	.663	.438
EXTREME SPREAD	:	1.205	.717	.442
NUMBER IN ONE IN	CH CIRCLE	=	4	•
NUMBER IN TWO IN	CH CIRCLE	=	5	
NUMBER IN THREE IN	CH CIRCL		5	



PATTERN #	:	1			
SHOTS (BEST OF)	:	5	4	3	
MAXIMUM X	1	.439	.256	.138	
MINIMUM X	:	464	354	247	
MAXIMUM Y	:	.369	.180	.156	
MINIMUM Y	:	756	190	213	
FENTROID //	:	109	219	101	
CENTROID Y	:	.182	.371	.395	
POA TO CENTROID	in.:	.213	.431	.407	
MIN RADIUS	:	.239	.229	.122	
MEAN RADIUS	:	.456	.286	.219	
MAX RADIUS	:	.875	.361	.326	
HORIZOMTAL SPREA	D:	.903	.610	.385	
VERTIONL SPREA	D :	1.125	.369	.369	
EXTREME SPREA	D:	1.258	.659	.533	
NUMBER IN ONE	INCH (	CIRCLE =	4		•
NUMBER IN TWO	INCH (	CIRCLE =	5		
NUMBER IN THREE	INCH (	CIRCLE =	<u>~</u>		



PATTERN #	:	2			
SHOTS (BEST OF)	:	5	4	3	
MAXIMUM X	:	1.939	.460	.282	
MINIMUM X	:	-1.019	534	384	
MAXIMUM Y	:	.481	.271	.246	
MINIMUM Y	:	839	363	273	
CENTROID X	:	206	691	~.513	
CENTROID Y	:	.362	.572	.482	
POA TO CENTROID in		.417	.897	.704	
MIN RADIUS	:	.155	.258	.105	
MEAN RADIUS	:	.886	.433	.318	
MAX RADIUS	:	2.113	.599	.456	
HORIZONTAL SPREAD	:	2.958	.994	.666	
VERTICAL SPREAD	:	1.320	.634	.519	
EXTREME SPREAD	:	3.239	1.179	.844	
NUMBER IN ONE IN	ICH C	IRCLE =	2		•
NUMBER IN TWO IN	ich co	IRCLE =	3	•	
NUMBER IN THREE IN	ich c	IRCLE =	4		

5KIP tB Apr 1986 CENTERFIRE PATTERNS # POA 21m circle in carcle Bin circle OF SHOTS-5 IN CIR Zin Э 5 31n CENTROID 2.100 VS= 1.044 GS= 2.250 PATTERN # SHOTS (BEST OF) MUMIXAM 1.115 .869 -.985 MINIMUM Х -1.208 -.918 MAXIMUM .585 .409 .384 MINIMUM -.459 -.312 -.337 CENTROID X .211 .457 .168 CENTROID -.175 -.322 -.297 POA TO CENTROID .275 .559 .341 MIN RADIOS .279 .032 .270 .664 MEAN RADIUS .864 .666 MAX RADIUS 1.146 1.275 .995 HORIZONTAL SPREAD 2.100 2.076 1.570 .721 .721 **VERTICAL** SPREAD 1.044 EXTREME SPREAD 2.250 2.132 1.728

1

3

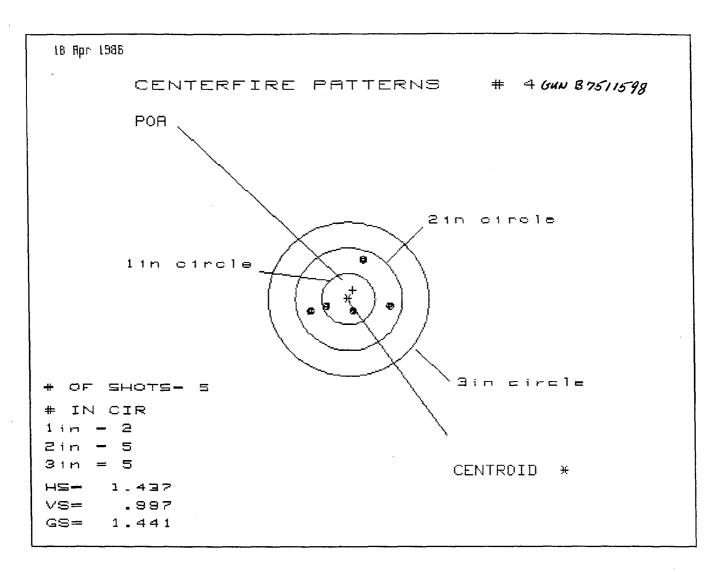
INCH CIRCLE

INCH CIRCLE

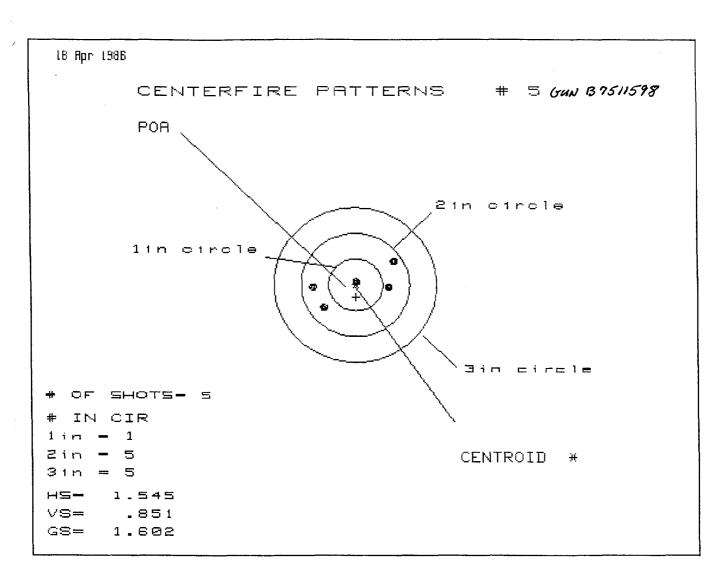
NUMBER IN ONE

NUMBER IN TWO

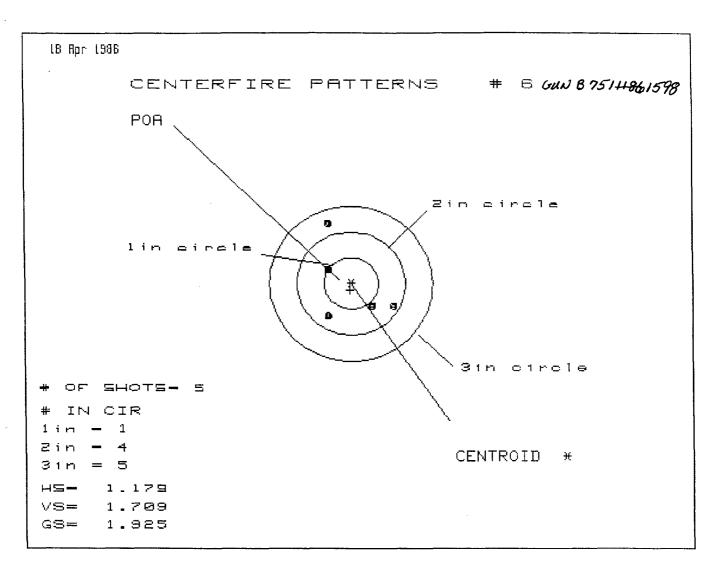
NUMBER IN THREE INCH CIRCLE



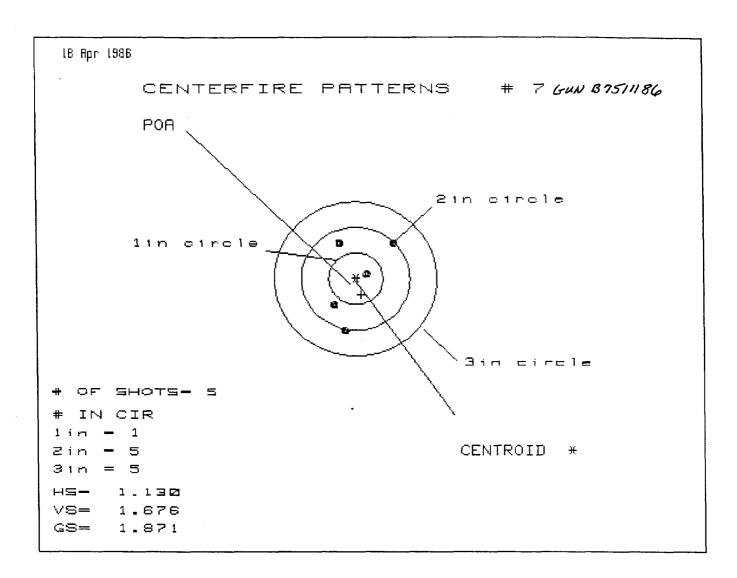
SHOTS (BEST OF): 5 4 3  MAXIMUM X: .733 .797 .453  MINIMUM X:704640374  MAXIMUM Y: .731 .090 .044  MINIMUM Y:266083053  CENTROID X:079143409  CENTROID Y:174357387  POA TO CENTROID in: .191 .385 .563  MIN RADIUS: .293 .205 .090  MEAN RADIUS: .596 .498 .307  MAX RADIUS: .774 .802 .456
MINIMUM X :704640374 MAXIMUM Y : .731 .090 .044 MINIMUM Y :266083053 CENTROID X :079143409 CENTROID Y :174357387 POA TO CENTROID in: .191 .385 .563 MIN RADIUS : .293 .205 .090 MEAN RADIUS : .596 .498 .307
MAXIMUM       Y       :       .731       .090       .044         MINIMUM       Y       :      266      083      053         CENTROID       X       :      079      143      409         CENTROID       Y       :      174      357      387         POA       TO       CENTROID       in.:       .191       .385       .563         MIN       RADIUS       :       .293       .205       .090         MEAN       RADIUS       :       .596       .498       .307
MINIMUM Y :266083053 CENTROID X :079143409 CENTROID Y :174357387 POA TO CENTROID in: .191 .385 .563 MIN RADIUS : .293 .205 .090 MEAN RADIUS : .596 .498 .307
CENTROID X :079143409 CENTROID Y :174357387 POA TO CENTROID in: .191 .385 .563 MIN RADIUS : .293 .205 .090 MEAN RADIUS : .596 .498 .307
CENTROID Y :174357387 POA TO CENTROID in.: .191 .385 .563 MIN RADIUS : .293 .205 .090 MEAN RADIUS : .596 .498 .307
POA TO CENTROID in.:       .191       .385       .563         MIN RADIUS       :       .293       .205       .090         MEAN RADIUS       :       .596       .498       .307
MIN RADIUS : .293 .205 .090 MEAN RADIUS : .596 .498 .307
MEAN RADIUS : .596 .498 .307
MAX RADIUS : .774 .802 .456
11111 1002 1 100
HORIZONTAL SPREAD : 1.437 1.437 .827
VERTICAL SPREAD: .997 .173 .097
EXTREME SPREAD: 1.441 1.441 .829
NUMBER IN ONE INCH CIRCLE = 2 .
NUMBER IN TWO INCH CIRCLE = 5
NUMBER IN THREE INCH CIRCLE = 5



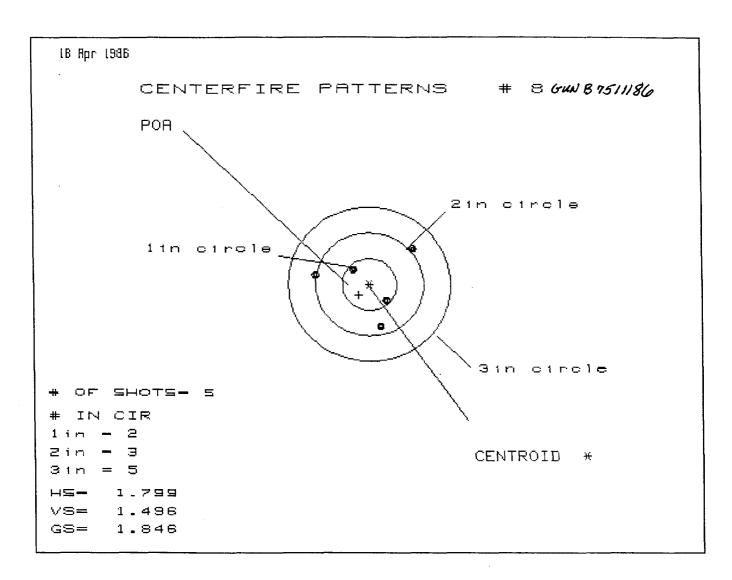
PATTERN #	: [	5			
SHOTS (BEST OF)	:	5	4	3	
Maximum x	:	.742	.791	.585	
* NIMUM X	:	803	618	576	
MAXIMUM Y	:	.422	.159	.194	
MINIMUM Y	:	429	323	288	
CENTROID X	:	007	192	.014	
CENTROID Y	2	.237	.131	.096	
POA TO CENTROID i	n.:	.237	.233	.097	
MIN RADIUS	:	.054	.253	.194	
MEAN RADIUS	:	.604	.541	.477	
MAX RADIUS	:	.853	.793	.644	, - > ,
HORIZONTAL SPREAD	:	1.545	1.409	1.161	. ,
VERTICAL SPREAD	:	.851	.482	.482	
EXTREME SPREAD	:	1.602	1.410	1.222	
NUMBER IN ONE I	NCH CIRCLE	=	i	•	
NUMBER IN TWO I	NCH CIRCLE	=	5		
NUMBER IN THREE I	NCH CIRCLE	=	5		



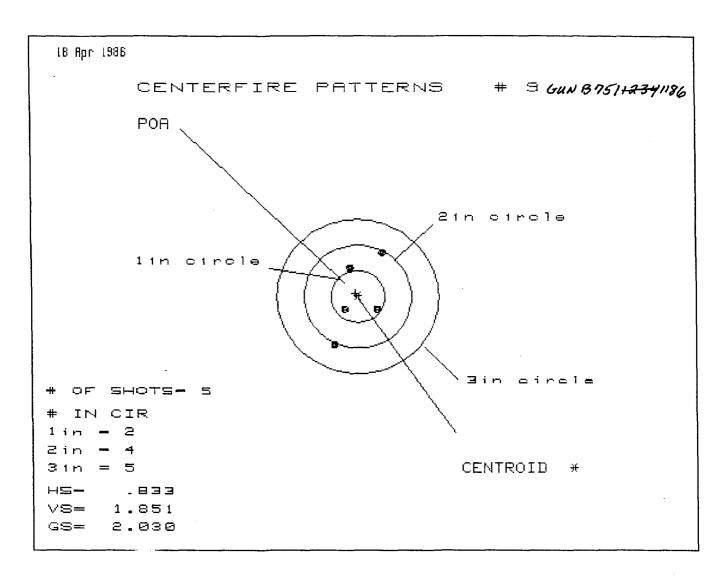
PATTERN #	:	6		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.786	.692	.507
MINIMUM X	:	393	488	257
MAXIMUM Y	:	1.129	.534	.493
MINIMUM Y	:	580	298	339
CENTROID X	:	.025	.120	111
CENTROID Y	:	.129	153	112
POA TO CENTROID in	. :	.132	.194	.158
MIN RADIUS	:	.461	.299	.425
MEAN RADIUS	:	.756	.573	.503
MAX RADIUS	:	1.190	.718	.553
HORIZONTAL SPREAD	:	1.179	1.179	.764
VERTICAL SPREAD	:	1.709	.832	.832
EXTREME SPREAD	:	1.925	1.343	.996
NUMBER IN ONE IN	ICH CIRCLE	=	1	•
NUMBER IN TWO IN	ICH CIRCLE	= .	4	
NUMBER IN THREE IN	ICH CIRCLE	=	5	



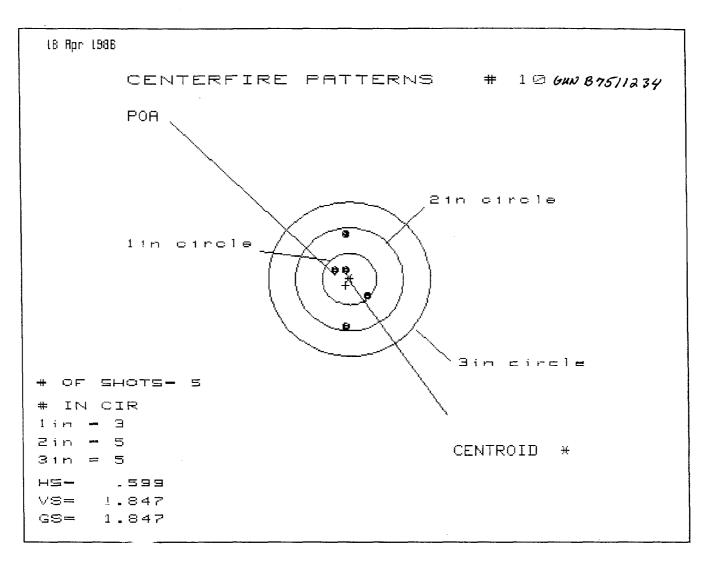
PATTERN # :	7			
SHOTS (BEST OF) :	5	4	3	
MAXIMUM X :	.717	.659	.363	
MINIMUM X :	413	471 •	251	
MRXIMUM Y :	.711	.470	.605	
MINIMUM Y :	965	703	567	
CENTROID X :	094	036	256	
CENTROID Y :	.307	.548	.413	
POA TO CENTROID in.:	.321	.550	.486	
MIN RADIUS :	.212	.225	.365	
MERN RADIUS :	.710	.605	.533	
MAX RADIUS :	.993	.846	.620	
HORIZONTAL SPREAD :	1.130	1.130	.614	
VERTICAL SPREAD :	1.676	1.172	1.172	
EXTREME SPREAD :	1.871	1.583	1.180	
NUMBER IN ONE INCH	CIRCLE =	1		•
NUMBER IN TWO INCH	CIRCLE =	5		
NUMBER IN THREE INCH	CIRCLE =	5		



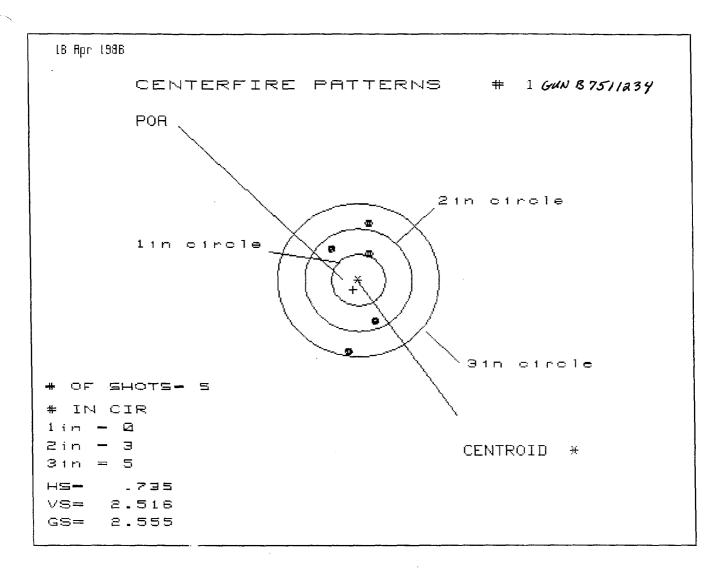
PATTERN # :	8			
SHOTS (BEST OF)	5	4	3	
MAXIMUM X :	.808	.489	.227	
MINIBUM X :	991	788	334	
MAXIMUM Y :	.646	.406	.538	
MINIMUM Y :	850	689	557	
CENTROID X	.198	005	.258	
CENTROID Y :	.207	.046	086	
POA TO CENTROID in.:	.286	.046	.272	
MIN RADIUS :	.367	.412	.228	
MEAN RADIUS :	.737	.645	.476	
MAX RADIUS :	1.035	.882	.633	
HORIZONTAL SPREAD :	1.799	1.278	.561	
VERTICAL SPREAD :	1.496	1.095	1.095	
EXTREME SPREAD :	1.846	1.586	1.181	
NUMBER IN ONE INCH	l CIRCLE =	2		•
NUMBER IN TWO INCH	CIRCLE =	3		
NUMBER IN THREE INCH	H CIRCLE =	5		



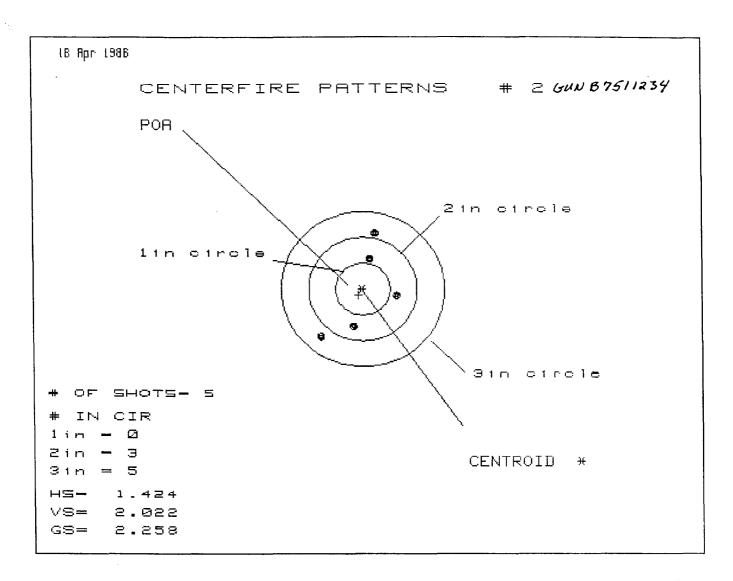
PATTERN #	:	9		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	i .	.429	.328	.398
MINIMUM X	:	404	360	251
MAXIMUM Y	:	.887	.646	.521
MINIMUM Y	:	964	482	266
CENTROID X	:	.046	.147	.038
CENTROID Y	:	064	.177	039
POA TO CENTROID i	n.:	.079	.230	.054
MIN RADIUS	:	, 354	.398	.366
MEAN RADIUS	:	.681	.569	.460
MAX RADIUS	:	1.045	.724	.541
HORIZONTAL SPREAD	:	.833	.688	.649
VERTICAL SPREAD	:	1.851	1.128	.787
EXTREME SPREAL	) <u>:</u>	2.030	1.321	.947
NUMBER IN ONE I	NCH CIRCLE	=	2	•
NUMBER IN TWO I	NCH CIRCLE	=	4	
NUMBER IN THREE I	NCH CIRCLE	=	5	



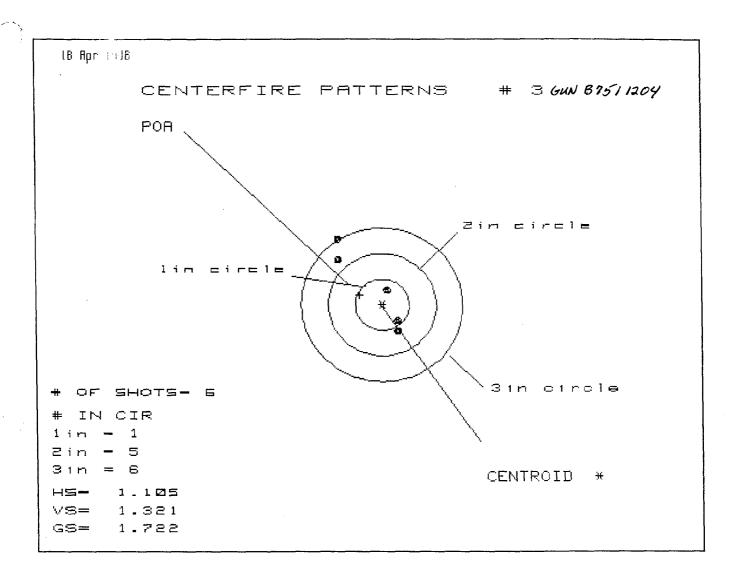
PATTERN #	: !	10		
SHOTS (BEST OF)	:	5	4	3 .
MAXIMUM X	:	.368	.362	.341
MINIMUM X	:	231	237	258
MAXIMUM Y	:	.885	.644	:185
MINIMUM Y	:	962	535	320
CENTRO1. X	:	.072	.078	.099
CENTROID Y	:	.123	.364	.149
POA TO CENTROID in	. :	.143	.372	.179
MIN RADIUS	:	.170	.100	.158
MEAN RADIUS	:	.561	.408	.314
MAA RADIUS	:	.963	.647	.467
HORIZONTAL SPREAD	:	.599	.599	.599 •
VERTICAL SPREAD	:	1.847	1.179	.505
EXTREME SAREAD	:	1.80	1.254	.783
NUMBER IN ONE IN	OH CIRCLE	=	3	
NUMBER IN TWO IN	CH CIRCLE	=	5	
NUMBER IN THREE IN	CH CIRCLE	≂	5	



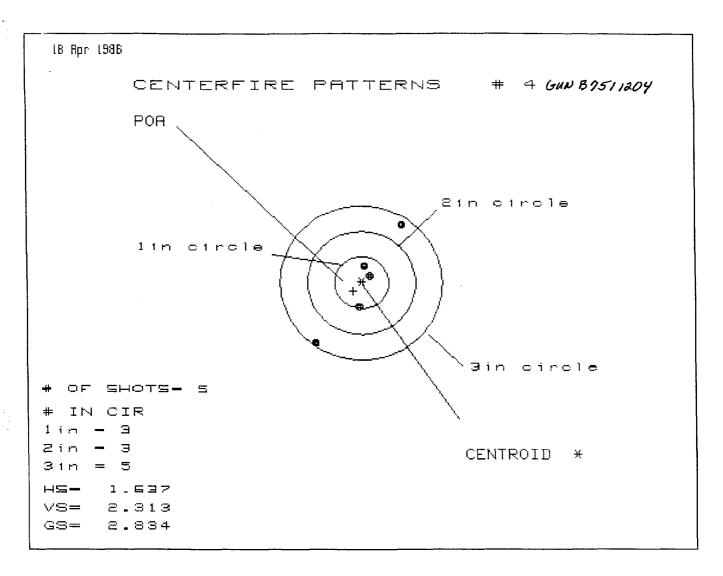
PATTERN #	:	1		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X		.263	.211	.272
MINIMUM X	:	472	524	463
MAXIMUM Y	:	1.086	.728	.532
MINIMUM Y	:	-1.430	-1.164	921
CENTROID X	:	.101	.153	.092
CENTROID Y	:	.185	.543	.300
POA TO CENTROID i	n.:	.211	.564	.314
MIH ADIUS	:	.535	.195	.433
MEAN RADIUS	:	.948	.682	.700
MAX RADIUS	:	1.445	1.183	.960
HORIZONTAL SPREAD	:	.735	.735	.735
VERTICAL SPREAD	:	2.516	∴892	1.453
EXTREME SPREAD	:	2.555	1.892	1.628
NUMBER IN ONE I	NCH	CIRCLE =	0	
NUMBER IN TWO I	исн	CIRCLE =	3	
NUMBER IN THREE I	NCH	CIRCLE =	5	



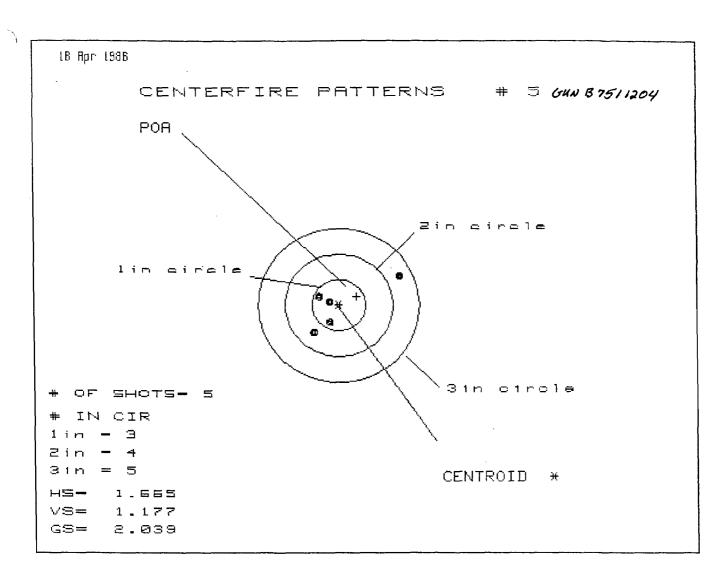
PATTERN #	:	2		
SHOTS (BEST OF)	1	5	4	3
MAXIMUM X	:	.626	.426	.428
MINIMUM X	:	798	380	378
MAXIMUM Y	:	1.120	.895	.674
MINIMUM Y	:	902	909	611
CENTROID X	:	.078	.278	.276
CENTROID Y	:	.116	.341	.043
POA TO CENTROID i	n.:	.140	.440	.279
MIN RADIUS	:	.619	.379	.433
MEAN RADIUS	:	.862	.705	.609
MAX RADIUS	:	1.204	.985	.718
HORIZONTAL SPREAI	) :	1.424	.806	.806
VERTICAL SPREAT	) :	2.022	1.804	1.285
EXTREME SPREAI	) <b>:</b>	2.258	1.845	1.326
NUMBER IN ONE 1	NCH CIRCLE	=	0	•
NUMBER IN TWO 1	NCH CIRCLE	=	3	
NUMBER IN THREE	NCH CIRCLE	=	5	



PATTERN #	:	3		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.265	.055	.072
MINIMUM X	:	840	141	122
MAXIMUM Y	:	.858	.511	.428
MINIMUM Y	:	463	248	225
CENTROID X	:	.418	.628	.609
CENTROID Y	:	189	404	321
POR TO CENTROID in	. :	.459	.747	.689
MIN RADIUS	:	.211	.125	.210
MEAN RADIUS	:	.664	.265	.297
MAX RABIUS	:	.956	.530	.445
HORIZONTAL SPREAD	:	1.105	.196	.194
VERTICAL SPREAD	:	1.321	.759	.653
EXTREME SPREAD	:	1.722	.784	.681
NUMBER IN ONE IN	CH CIRCLE	=	1	
NUMBER IN TWO IN	CH CIRCLE	=	5	
NUMBER IN THREE IN	CH CIRCLE	=	6	



PATTERN #	:	4		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	.749	.527	.110
MINIMUM X	:	888	240	065
MAXIMUM Y	:	1.145	.853	.352
MINIMUM Y	:	-1.168	766	481
CENTROID X	:	.157	.379	.204
CENTROID Y	:	.164	.456	.171
POA TO CENTROID in	. :	.227	.593	.266
MIN RADIUS	:	.208	.168	.170
MEAN RADIUS	:	∄775	.551	.337
MAX RADIUS	:	1.467	1.003	.486
HORIZONTAL SPREAD	:	1.637	.767	.175
VERTICAL SPREAD	:	2.313	1.619	.833
EXTREME SPREAD	:	2.834	1.791	.833
NUMBER IN ONE IN	ICH CIRCL	_E =	3	•
NUMBER IN TWO IN	CH CIRCL	_E =	3	
NUMBER IN THREE IN	ICH CIRCL	_E =	5	



PATTERN #	:	5		
SHOTS (BEST OF)	:	5	4	3
MAXIMUM X	:	1.164	.168	.098
MINIMUM X	:	501	211	162
MAXIMUM Y	:	.615	.307	.171
MINIMUM Y	:	562	408	276
CENTROID X	:	330	620	550
CENTROID Y	:	169	323	187
POA TO CENTROID in.	:	.370	.699	.581
MIN RADIUS	:	.180	.219	.123
MEAN RADIUS	:	.,596	.319	.217
MAX RADIUS	:	1.316	.459	.293
HORIZONTAL SPREAD	:	1.665	.379	.260
VERTICAL SPREAD	:	1.177	.715	.447
EXTREME SPREAD	:	2.039	.735	.517
NUMBER IN ONE INC	H CIRCLE	=	3	•
NUMBER IN TWO INC	H CIRCLE	=	4	
NUMBER IN THREE INC	H CIRCLE	=	5	

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			В	ASIC STA	TISTICS			
VARIABLE  NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD	3	MISS		93 60 20	MEAN .8031 1.6720 1.8140 2.2738	ANCE .0749 .0894 .1426 .5791		DEV. .273 .299 1.068 .761
	OF V	/ARIATION 34.06691 17.88278 58.92667	OF M		.9: 8:	PER LIMI	T 805 961 096	
VARIABLS MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD		.7 .0	S 6513 0240 6009 1547	-	S -1.50000 -1.50000 -1.50000			

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				BASIC STA	TISTICS			
NAME 1EAN RAD.	0BS. 3	MISS Ø	2.1 5.0 3.8	.735 1040 1270	.7245	.16 1.24 .56	90 08 01	
VARIABLE	COE	FFICIENT	stb.	ERROR	95 % CONI	FIDENCE INT	ERVAL	
		56.73468 66.78148 58.66756		.23732	28° -1.07° 570	951 994 058	1.7385 4.4159 3.1219	4 2
VARIABLE		SKEWNES	s	KURTOS:	IS			
MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD		3 .6	9294 2145 (		-1.50000 -1.50000	<b></b>		
	Cartegorium, Linderform	er en		and the second s	transfer of the second section and section		18 (2)	and the state of t
	VARIABLE  NAME EAN_RAD. ORIZONTAL ERTICAL HAX_SPREAD  VARIABLE  VARIABLE  VARIABLE  VARIABLE  VARIABLE  VARIABLE  VARIABLE  VARIABLE  VARIABLE	VARIABLE  # OF NAME OBS. EAN_RAD. 3 ORIZONTAL 3 ERTICAL 3 HAX_SPREAD 3  VARIABLE COEF  NAME OF V TEAN_RAD. FORIZONTAL FORIZONTAL VARIABLE   # OF # OF NAME OBS. MISS EAN_RAD. 3 0 ORIZONTAL 3 0 PERTICAL 3 0 PAX_SPREAD 3 0  VARIABLE COEFFICIENT  NAME OF VARIATION 16AN_RAD. 56.73468 PORIZONTAL 66.78148 PORIZONTAL 58.66756 1AX_SPREAD 52.26480  VARIABLE SKEWNES PORIZONTAL  VARIABLE SKEWNES PORIZONTAL  VARIABLE SKEWNES PORIZONTAL  VARIABLE SKEWNES PORIZONTAL  VERTICAL	VARIABLE  # OF # OF NAME OBS. MISS SUM EAN_RAD. 3 0 2.1 ORIZONTAL 3 0 3.8 ERTICAL 3 0 3.8 AX_SPREAD 3 0 5.9  VARIABLE COEFFICIENT STD.  NAME OF VARIATION OF 1EAN_RAD. 56.73468 HORIZONTAL 66.78148 /ERTICAL 58.66756 1AX_SPREAD 52.26480  VARIABLE SKEWNESS	VARIABLE # OF # OF NAME OBS. MISS SUM EAN RAD. 3 0 2.1735 ORIZONTAL 3 0 3.8270 MX_SPREAD 3 0 5.9299  VARIABLE COEFFICIENT STD. ERROR  NAME OF VARIATION OF MEAN 15AN_RAD. 56.73468 .23732 MORIZONTAL 66.78148 .64312 MERTICAL 58.66756 .43209 MAX_SPREAD 52.26480 .59645  VARIABLE SKEWNESS KURTOS MEAN 15763 MORIZONTAL .39294 MORIZONTAL .62145	# OF # OF NAME OBS. MISS SUM MEAN SANZONTAL 3 0 2.1735 .7245 ORIZONTAL 3 0 5.0040 1.6680 SERTICAL 3 0 3.8270 1.2757 SANZSPREAD 3 0 5.9299 1.9766 SERTICAL 3 0 5.73468 22732 2 2.28 SERTICAL 3 0 5.73468 22732 2 2.28 SERTICAL 58.66756 4320957 SERTICAL 58.66756 59209 5964557 SERTICAL 58.66756 59209	# OF # OF NAME OBS. MISS SUM MEAN VARIANC EAN RAD. 3 0 2.1735 .7245 .16 ORIZONTAL 3 0 5.0040 1.6680 1.24 ERTICAL 3 0 3.8270 1.2757 .56 AX_SPREAD 3 0 5.9299 1.9766 1.06  VARIABLE COEFFICIENT STD. ERROR 95 % CONFIDENCE INT  NAME OF VARIATION OF MEAN LOWER LIMIT UPPER HEAN RAD. 56.73468 .2273228951 HORIZONTAL 66.78148 .64312 -1.07994 WERTICAL 58.66756 .4920957058 HAX_SPREAD 52.26480 .5964557190  VARIABLE SKEWNESS KURTOSIS  VARIABLE SKEWNESS KURTOSIS  VARIABLE SKEWNESS KURTOSIS  VARIABLE SKEWNESS KURTOSIS  MEAN_RAD15763 -1.50000 HORIZONTAL39294 -1.50000 VERTICAL .62145 -1.500000	VARIABLE  # 0F # 0F NAME	

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Subfile: B7	7511137 			and the tier and the per ma tier that the con and are the	
		BASIC	STATISTICS		
VARIABLE					
NAME	# OF # OF OBS. MISS	sum	MEAN	VARIANCE	STD.DEV.
MEAN_RAD. HORIZONTAL		1.7636 4.6240	.5879 1.5413	.0668 1.5101	.250 1.22
VERTICAL MAX_SPREAD	3 <b>0</b> 3 0	3.5690 5.7018	1.1897 1.9006	.0127 1.3445	.113 1.15
VARIABLE NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD	9.4877	OF MEAN 2 .1< 8 .70	DR 95 % COMF LOWER LIMIT 4919049 3949 -1.490 5517 .915 5946959	961 1.22 318 4.57 122 1.46	T 2531 284 812
VARIABLE	SKEWNE	ss kul	RTOSIS		
MEAN_RAD. HORIZONTAL		69287 69680	-1.50000 -1.50000		
VERTICAL MAX_SPREAI		70704 70541	-1.50000 -1.50000		
IIIIN OI KENI			1.30000		

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					BASI	C STATIST:	ics			
	VARIABLE	# OF		em	od.	MEGU		uesteuce	eth r	ıcu
	NAME EAN_RAD. ORIZONTAL	0BS.	Й	, sut	1.9558 4.1610		.6519 .3870	VARIANCE .0081 .0354		.090 .188
٧	ERTICAL IAX SPREAD	3	0 0 0		3.5570 4.9675	1	.3870 .1857 .6558	.0334 .2107 .0606		.100 .459 .248
·										
	VARIABLE NAME							IDENCE INTER		
	IEAN RAD.	Ur Y	VARIATI 13.80	021		5194	ER LIMIT 429.	99 .	87388	
۱- ۷	HORIZONTAL ∕ERTICAL		13.55 38.71			0857 6504	.923 .053		85091 31813	
t*	1AX_SPREAD		14.86	884 	. 1	4215 	1.048 	47 2.	26321 	
	VARIABLE		SKEW	NESS	KL	RTOSIS				
t	1EAN_RAD.			.7007		-1.50				
	HORIZONTAL VERTICAL			4539 .6275		-1.50 -1.50				
-										
					:					
	MAX_SPREAD			.3851	1	-1.50	000			

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Subfile: B7	511186	6						
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			BH:	BIC STAT	151165			
VARIABLE  NAME  MEAN_RAD.  HORIZONTAL  VERTICAL  MAX_SPREAD	3	MISS Ø	SUM 2.127 3.762 5.023 5.747	7 9 9	EAN .7092 1.2540 1.6743 1.9157		ANCE .0008 .2448 .0315 .0099	STD.DEV. .027 .494 .177 .094
VARIABLE					95 % CON LOWER LIMI			
NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD		ARIATION 3.93336 39.45725 10.60158 5.20205		.01611 .28567 .10248 .05754	.64 .03	042 338 644	ER LIMI .77 2.47 2.11 2.16	806 462 223
NAME MEAN_RAD. HORIZONTAL VERTICAL		3.93336 39.45725 10.60158		.01611 .28567 .10248	.64 .03 1.23	042 338 644	.77 2.47 2.11	806 462 223
NAME MEAN_RAD. HORIZONTAL VERTICAL		3.93336 39.45725 10.60158		.01611 .28567 .10248	.64 .03 1.23 1.66	042 338 644	.77 2.47 2.11	806 462 223
NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD		3.93336 39.45725 10.60158 5.20205  SKEWNES 0		.01611 .28567 .10248 .05754 	.64 .03 1.23 1.66	042 338 644	.77 2.47 2.11	806 462 223
NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD VARIABLE MEAN_RAD. HORIZONTAL VERTICAL		3.93336 39.45725 10.60158 5.20205  SKEWNES 0	5 7731 3148 1725	.01611 .28567 .10248 .05754 	.64 .03 1.23 1.66  6 1.50000 1.50000	042 338 644	.77 2.47 2.11	806 462 223
NAME MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD VARIABLE MEAN_RAD. HORIZONTAL VERTICAL		3.93336 39.45725 10.60158 5.20205  SKEWNES 0	5 7731 3148 1725	.01611 .28567 .10248 .05754 	.64 .03 1.23 1.66  6 1.50000 1.50000	042 338 644	.77 2.47 2.11	806 462 223

 Subfile: B7	51100A						
			P	ASIC STA	TISTICS		
			SUM 2.37 2.75 6.38 6.65	06 80 50	MEAN .7902 .9193 2.1283 2.2199	VARIANCE .0414 .1956 .1204 .1262	STD.DEV. .20 .44 .34 .35
VARIABLE NAME MEAN <u>R</u> AD. HORIZONTAL	OF V	ARIATION	0F M		LOWER LIM"	28 1.29	T 0213
VERTICAL MAX_SPREAD		16.30122 16.00470		.20031 .20513	1.272 1.343		
VARIABLE		SKEWNESS	3	KURTOSI	S		
MEAN_RAD. HORIZONTAL VERTICAL MAX_SPREAD			3264 1016	-	1.50000 1.50000 1.50000 -1.50000		

Subfile: B7	'51120				~				<b></b>	
				BASIC STA	TISTICS					
VARIABLE										
		# OF	e. 114		MEGN		Hontone			· 
NAME MEAN RAD.	UBS. 3	MISS 0	SUM 2.0	356	MEAN .678	35	VARIANO . AA	;E 182	STD.D	:V. .09
HORIŽONTAL	3	Я		1070	1.469			96		.31
VERTICAL	3	0		3110	1.600			325		.61
MAX_SPREAD	3 	0 	6.5 	5949 	2.198	33 	.33	279 		.57
VARIABLE	COE	FFICIENT	STD	. ERROR	95 %	CONFID	ENCE INT	TERVAL		
NAME		VARIATION	0F	MEAN	LOWER 1	LIMIT	UPPER	LIMIT		
MEAN_RAD.		13.3486		.05229		.45510		.9019		
HORIZONTAL VERTICAL		21.4801 38.5682		.18218 .35709		.69058 .07786		2.2474		
MAX_SPREAD		26.0470		.33059		.78576		3.6108		1
										/
									/	
HODIONE		CKEUNE		KUBTOO	T.C.					
VARIABLE		SKEWNE		KURTOS				/		
MEAN_RAD. HORIZONTAL			28337		-1.50000					
VERTICAL			70085 66423		-1.50000 -1.50000					
MAX_SPREAD			47153		-1.50000		, · ·		,,,	
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									7. <del>11</del>	·
						100		·	137	

RD-49-B

1.5

QR # 000873

#### REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington.

PETERS

XC: L. B. Bosquet

G. J. Hill R. J. Long

W. J. Newkirk D. I. Roark

K. W. Soucy

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_

March 27, 1986

J. J. BURNS

#### XP-100, CAL. .223, TRIAL AND PILOT - FINISH GUN AUDIT

#### **SUMMARY:**

This lot is rejected for mechanical and visual nonconformities. On two of the eight sample guns, safety switch operating force became unsatisfactory. All stock assemblies of the sample contained significant visual nonconformities.

#### **CONCLUSIONS:**

Corrective actions to reduce the likelihood of such quality problems in the future are needed at:

- o Stock assembly
- o Final assembly

#### IMMEDIATE FOLLOW-UP:

All nonconforming product was contained on 3/26/86.

Nonconforming stock assemblies were reviewed with the Foreman of the originating Dept. on 3/26/86.

Mechanical checks and rework began on 3/27/86.

The Custom Shop Supervisor was notified 3/27/86.

XP-100, CAL. .223, TRIAL AND PILOT - FINISH GUN AUDIT - contd.

#### **RESULTS:**

Observed nonconformities are ranked below in the order of estimated overall importance (highest first); weighing both the individual seriousness of the nonconformity and its observed frequency of occurrence.

#### Mechanical:

The safety switch operating force dropped abruptly and its movement became sloppy when the lower leg of the safety snap washer became disengaged from the notch in the safety pivot pin.

#### Visual:

All eight sample stock assemblies had an abrupt and very noticeable difference in surface luster between the sides of the fore-end and the rest of the Stock.

Approximately half the sample stocks had obvious scratches, scrapes or mars. (The final assembler reported that he sometimes receives stock assemblies piled, en masse, in a cardboard box; instead of in individually-compartmented short stock wire racks.)

All eight sample barrel assemblies show a polish mismatch (transition) just in front of the fore-end. This distracts from the appearance and perceived quality of the product; it is believed this will be objectionable to a minority of customers.

W. A. Warren, Jr. Quality Assurance Analyst

WAW/bdm

RD-62-B

#### REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington,

PETERS

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

May 29, 1986

TO: W.A. WARREN FROM: F.L. SUPRY

SUBJECT: Wording change in report# 860972 (XP-100 .223 TRIAL AND PILOT)

As per my oral commitment, the wording on page 4 item number 2 has been changed to read; "The Remington standard for the XP-100, chambered in the .223 REM caliber is an extreme Group Size of: 3.0 inches for a five (5) shot group."

Thank you for drawing the error to my attention.

RD-69-B

#### REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE





"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_

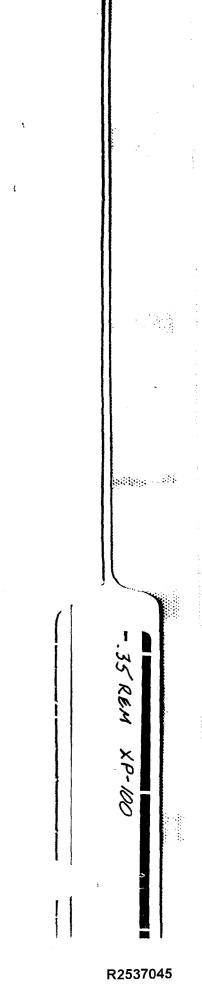
TO:	J.	BOWER	T.	DOUGLAS	D.	FINDLAY
	A.	HUGICK	w.	COLE	K.	ROWLANDS
	R.	MURPHY	s.	FRANZ	J.	RONKAINEN
	F.	MARTIN	F.	SMITH	T.	BAUMAN
	Κ.	CALKINS	T.	POWERS	R.	HOWE
	C.	STEPHENS	J.	BAGGETTA	т.	DUNN
	D.	THOMAS	J.:	SELAN	D.	URTZ
	J.	MARTIN				

FROM: J. SNEDEKER/F. SUPRY

We have scheduled a meeting for the morning of Friday January 31, 1986, commencing at 8:15 A.M. in the Research Conference Room (52-4) for the following purpose:

TO ESTABLISH GUIDELINES FOR THE INITIATION OF TEST PROGRAMS, THE PROCEDURES FOR THE CONDUCT OF THESE TESTS, AND TO CLARIFY THE DIFFERENCE BETWEEN DEVELOPMENTAL AND ACCEPTANCE TESTING. TO DEFINE THE RESPONSIBILITIES FOR DATA COLLECTION, ANALYSIS AND THE REPORTING OF TEST RESULTS FOR EACH TEST TYPE.

Your attendance at this meeting would be greatly appreciated.



### REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington.

PETERS

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

cc: W.H. Coleman, II/File
J.W. Bower
T.C. Douglas
J.R. Snedeker
A.A. Hugick
F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT
REPORT# 862332
OCTOBER 14, 1986

MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

#### MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

#### ABSTRACT:

The Test and Measurement Laboratory finds the Design Verification Test of the Model XP-100 35 REM caliber to be acceptable. The testing consisted of 100 yard accuracy and endurance.

- 1. Four pistols were selected for the accuracy test, two each from the group size extremes recorded from previous Gallery testing. The accuracy was shot offhand by A.A. Hugick.
- 2. The endurance test consisted of the firing of 9000 rounds, 6000 rounds through one action, and 3000 rounds through another action. A total of six stocks were used in the endurance. Four stocks were subjected to 1000 rounds each, and the other two stocks were subjected to 2000 rounds each. Some minor seam separation was noted, at the front take down screw hole, at the 1000 and 1400 round levels; however, it was not enough to interfere with the function or the safety of the pistols. One stock was subjected to an additional 1000 factory rounds and 20 Proof rounds, to verify that the separation would not interfere with the function or the safety of the pistol.

Prepared by: F.L. SUPRY Date Prepared: 10/14/86

proofread and cleared by:

J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab

W.H. COLEMAN, II New Products Research Lab Director REP.#862332

W.O.# C-0801

#### MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

TO: J.R. Snedeker FROM: F.L. Supry

#### INTRODUCTION:

On August 21, 1986 a request to conduct a Design Verification Test on the Model XP-100 35 REM. caliber pistol was received by the Test Lab. The test would consist of endurance and accuracy testing. The purpose of the endurance test is to check the stocks joints. The purpose of the accuracy test is to compare the previous mechanical testing results to the offhand results.

#### SCOPE OF TEST:

To determine if the XP-100 chambered in the 35 REM. caliber, would meet Remington Specifications set by the Research Design Section.

#### TEST RESULTS:

The Model XP-100, chambered in the 35 REM. caliber, was found to be acceptable in all phases of the Design Verification Test.

#### REPORT TEXT:

#### 1. ACCURACY:

The Remington standard for the XP-100, chambered in the 35 REM caliber has not been established. The proposed standard is 3.5 inch group size at 100 yards.

A. Four (4) pistols were tested for 100 yard accuracy.

B7515993 B7510556 B7512645 B7516033

B. Using 200 grain Remington ammunition, the following 5 shot group size averages were shot:

ACCURACY DEVICE OFFHAND
1.75 inches 3.41 inches

C. Using 150 grain Remington ammunition, the following 5 shot group size average was shot:

a. Group Size: ACCURACY DEVICE OFFHAND

a. Group Size: Not Available 2.77 inches

D. Accuracy results (200 gr. and 150 gr.) per individual pistol are located in the appendix of this report. Since the shooter feels that it is easy to throw a shot in handgun accuracy, the results are given in the best of 5, 4, and 3 shot groups.

#### 2. ENDURANCE:

A total of 9000 rounds were fired through 2 actions, 6000 on action #7513713, and 3000 on action #7506066. Six (6) stocks were tested, 4 stocks were shot 1000 rounds each, and 2 stocks were shot 2000 rounds each. Some minor separation was noted; however, it did not interfere with the function or safety of the pistols. One of the stocks, with 2000 rounds, was fired an additional 1000 factory rounds and 20 Proof rounds with no increase in the minor separation.

#### A. 1000 ROUND LEVEL RESULTS:

a. Group Size:

- a. At the 1000 round inspection, three stocks showed a small separation at the rear of the front take down screw hole, near the recoil lug.
- B. 2000 ROUND LEVEL RESULTS:
  - a. At the 1400 round inspection both stocks showed a separation at the front and rear of the front take down screw hole.

#### 2. ENDURANCE (continued)

- B. 2000 ROUND LEVEL RESULTS: (continued)
  - b. At the 2000 round inspection, the separation showed no increase.
- C. 3000 ROUND AND 20 PROOF ROUND LEVEL RESULTS:
  - a. There was no increase in the length of the separation.
  - b. The separation appeared to be due to the area being difficult to retain uniform adhesion during the assembly operation as opposed to a functional failure. Refer to report supplement.

#### TEST PROCEDURE:

#### 1. ACCURACY:

- A. The accuracy was shot by A. Hugick (Research) at the R & D 100 yard range. The pistols were held at the grip with the right hand, and at the stock, at the center of the barrel, with the left hand. The elbows were bent slightly, and the pistol was rested on a sandbag.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 2 1/2X long eye relief pistol scope.
- C. Remington ammunition, R35R1 (Code E24IC260L) 150 grain and R35R2 (Code B15RD5548) 200 grain, was used for the 100 yard accuracy test.
- D. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- E. A total of four (4), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- F. The patterns were analyzed for group size, horizontal spread, and vertical spread. The best of 5, 4, and 3 shot group averages were calculated for each pistol.
- G. A summary sheet was written and included in the appendix of this report.

TEST PROCEDURE: (continued)

#### 2. ENDURANCE:

- A. The endurance was shot by H. Weaver, D. Thomas, and F. Supry (Research) in the R&D shooting room.
- B. A stock was assembled to the action and the pistol placed in a shooting harness attached to a shooting jack.
- C. The stock was removed and inspected every 200 rounds.
- D. Action #B7506066 was used to endurance 3 stocks to 1000 rounds each. No malfunctions occurred during the firing of the 3000 rounds.
- E. Action #B7513713 was used to endurance 1 stock to 1000 rounds and 2 stocks to 2000 rounds each. No malfunctions occurred during the firing of 5000 rounds.
- F. A new recoil rest was fabricated, by Robert Howe, for the XP-100. This rest simulates hand holding of the stock and allows unrestricted travel of the assembly if total stock separation were to occur.
- G. Action #B7513713 and the new rest were used to endurance one of the 2000 round stocks to 3000 rounds, and to fire 20 Proof rounds through the stock after the 3000 round level.
- H. All the additional shooting was done by A. Hugick, and the inspections were done by F. Supry and A. Hugick.
- I. The stock with 3000 rounds was sectioned and examined for adhesion.
- J. A decision to accept the design of the XP-100 chambered in the 35 REM caliber was made after the final results were reviewed with W.H. Coleman, II.

APPENDIX

- 100 YARD ACCURACY

GALLERY ACCURACY DEVICE vs OFF HAND SHOOTING (BEST GROUPS)

<del></del>				•	- •
				OFF HAND	
SERIAL NUMBER	AMMO	GALLERY DEVICE	BEST 5	BEST 4	BEST 3
B7515993	200			1.5 IN.	
	150	N.A.	2.2 IN.	2.0 IN.	1.8 IN.
B7512645	200	1.5 INCHES	3.2 IN.	2.0 IN.	1.0 IN.
	150	N.A.	2.5 IN.	1.1 IN.	0.7 IN.
в7510556	200	2.0 INCHES	3.8 IN.	2.5 IN.	1.2 IN.
	150	N.A.	2.5 IN.	2.0 IN.	0.7 IN.
B7516103	200	1.5 INCHES	1.6 IN.	0.5 IN.	0.3 IN.
	150	N.A.	2.6 IN.	2.0 IN.	1.0 IN.
		INDIVIDUAL ACCUR	RACY RESULTS		
				OFF HAND	
SERIAL NUMBER	AMMO	GROUP NUMBER	BEST 5	BEST 4	BEST 3

				OFF HAND -	
SERIAL NUMBER	AMMO	GROUP NUMBER	BEST 5	BEST 4	BEST 3
B7515993	200	1	4.5 IN.	3.8 IN.	2.8 IN.
		2	2.5 IN.	1.5 IN.	0.8 IN.
	150	2 1 2	2.2 IN.	2.0 IN.	1.8 IN.
·		2	3.5 IN.	3.1 IN.	2.0 IN.
			0 0		
B7512645	200	1	3.2 IN.		
		2 1		2.9 IN.	1.8 IN.
	150		2.5 IN.	1.1 IN.	0.7 IN.
		2	2.5 IN.	2.1 IN.	1.2 IN.
В7510556	200	1	4.9 IN.	4.5 TN.	1.7 IN.
2.72037		2	3.8 IN.	2.5 IN.	1.2 IN.
	150	1	3.0 IN.	2.2 IN.	1.2 IN.
	230	2	3.7 IN.	2.0 IN.	0.7 IN.
shot at e	nd	2 3	3.1 IN.	2.2 IN.	2.0 IN.
of test	IId	4	2.5 IN.	2.3 IN.	1.2 IN.
or test		7	2.5 IN.	2.5 IN.	1.2 IN.
B7516103	200	1	1.7 IN.	1.3 IN.	1.2 IN.
		2	1.6 IN.	0.5 IN.	0.3 IN.
	150	1	2.6 IN.	2.0 IN.	1.0 IN.
		2	3.3 IN.	1.9 IN.	1.3 IN.

#### TEST AND MEASUREMENT LAB SUPPLEMENT

DATE: 10/16/86

REPORT NO.: 862332

WRITTEN BY: F.L. SUPRY

WORK ORDER NO.: C-0801

TEST TYPE: SECTION AND EXAMINE XP-100 35 REM CALIBER STOCK

#### REASON FOR TEST:

To examine the adhesion of the XP-100 35 REM stock.

#### EQUIPMENT REQUIRED :

The stock with 3000 rounds, a band saw, and personnel.

#### TEST PROCEDURE :

The stock was cut into six sections and labeled as follows:

- #1 5.75 inches, measured from the muzzle end of the stock.
- #2 2.80 inches, cutting through the trigger guard.
- #3 2.40 inches, cutting 1 inch beyond the front take down screw.
- #4 1.80 inches, cutting 0.25 inches in front of rear take down screw.
- #5 3.20 inches, from #4 cut to rear of stock.
- #6 3.50 inches, the grip, measured at the centerline, from the base.

Each section was examined by A. Hugick, R. Howe, and F. Supry.

#### TEST RESULTS :

The separation of the glued surfaces in section #3, was due to the area being difficult to retain uniform adhesives during the assembly operation, and not that of a functional failure.

There was no stock separation in any of the sections, except section #3 at the front take down screw hole. That separation was along the horizontal area of the hole and 0.9 inches down the vertical, stopping at the start of the horizontal area leading to the grip.

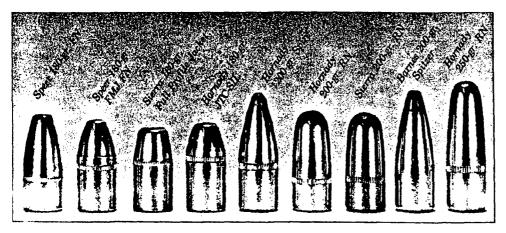
Section #3 was fractured to further examine the adhesion. The start of the horizontal leading to the grip was fused with a good glue joint; but, the glue in the vertical was very sparse.

# 55 I E I I E I I E I I

■ Almost 80 years ago the Remington Arms Company introduced the .35 Remington. It was just one of a family of rimless cartridges introduced by Remington in 1906 for use in its Model 8 semi-automatic rifle. Other cartridges in this rimless family were the .25 Remington, .30 Remington and .32 Remington. All of these-with the exception of the .35 Remington-were simply rimless clones of the rimmed .25-35. .30-30 and .32 Special which Winchester had already introduced in its Model 94 rifle. At the time the .35 Winchester was in existence, but it was significantly more powerful than the .35 Remington that the latter can hardly be called a rimless copy of it. If anything, the .35 Remington nearly duplicated the velocity of the .33 Winchester, but the latter used a .338-inch bullet rather than the .358-incher of the Remington round. An old wildcat and one in which there has recently been renewed interest, the .35-30/30 produces ballistics equaling those of the .35 Remington.

Today, only the .35 Remington survives. from that group of four rimless Remington cartridges. The others have taken their places on the list of antiquity. Why did the .35 Remington make it? Simply because it's one of the finest brush country cartridges for deer and black bear that's ever been introduced. It's much better than the .30-30 or the .32 Special, but not in the same league with such cartridges as the .358 Winchester and .350 Remington Magnum. However, those who hunt whitetail deer and black bear in heavy cover find that the .35 Remington is just what they wantplenty of power for the job, yet the recoil is mild. Because of this, quite an assortment of rifles have been chambered for the .35 Remington over the years-semi-autos, lever actions and even the venerable Model

This old-timer has worked for years in rifles. Now it's about to start a second life as a super handgun cartridge. By Bob Milek

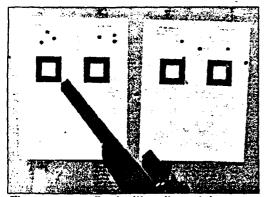


Few handgun cartridges equal the versatility of the .35 Remington as it comes from the factory. This rifle round seems right at home in the T/C and may very well be the ultimate factory caliber for handgunning's tougher chores, such as big-game hunting. Author used the .35 Remington successfully on a recent African hunt.

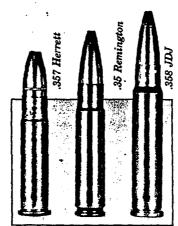
PHOTO BY L.L. RUE III

34 GUNS & AMMO/FEBRUARY 1986

## ULTIMATE HANDGUN HUNTING CALIBER!



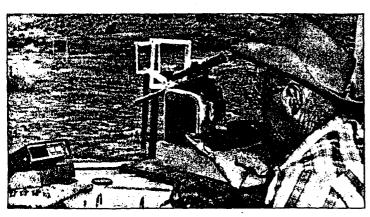
These groups, fired with spitzer-style bullets, are under 1½ inches and are quite adequate for hunting or silhouette needs.

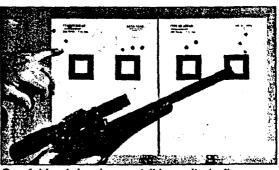


70 Winchester. Today, though, only the Marlin Model 336 lever action is chambered for the .35 Remington.

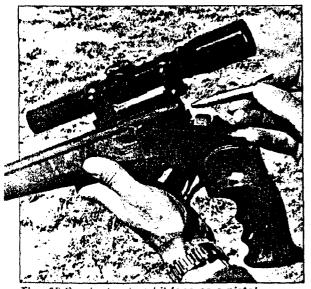
With just one rifle available for it, you might think that the .35 Remington is close to attaining obsolete status. Not so. To begin with, there are just too many good .35 Remington rifles still in use today and their owners aren't about to let the cartridge disappear. However, there's another market that we've been overlooking for all too long—handguns. That's right; the .35 Remington may be one of the best commercial cartridges presently available for use in a

Here the .35 Remington is compared to two other .35 caliber wildcats that are chambered in the Contender.





Careful load development (L) results in fine accuracy and power. Sighting "high" extends the range of the .35 out to and beyond 200 yards!



The .05 Remington is a bit long as a pistol round but seems well-suited to the 14-inch Contender barrel with factory and hand loads.

.35 REMING	ron Pi	STO	. LOAD	ING D	ATA
AND STATE OF THE S		100			INSTRUMENTAL
	M. D.			1 m	SVELOCITY
		77		3 <b>747</b>	172
		Par Haraltan			SHOOT RESIDENCE
Rem. 150-gr. F.L		1	Rem	R-P	المروب 1,934 دينوسي
Win. 200-gr. RN F.L.		 tudostriid	Win.	W-W	1,842
Fed 200-gr. RN Fall	NOO	22.0	Fed.		1,806
Sierra 158-gr. JSP	N200	33.0	Fed. 215	R-P	2,107
Sierra 158-gr. JSP Sierra 158-gr. JSP	14227	30.0	Fed. 215	R-P	
Speer 180-gr. FN					2,307
Speer 180-gr. FN	пэ <i>гг</i> Н4895	38.0	Fed. 210M Fed. 210M	R-P	1.936
Speer 180-gr. FN					2,038
Speer 180-gr. FN	RE 7	30.0	Fed. 210M	R-P	1.911
Speer 180-gr. FMJ FN	H322		Fed. 210M		2,089
Hornady 180-gr. JTC-SIL	H322	37.3	Fed. 210M	R-P	2.035
Sierra 180-gr, FPJ	N201		Eed. 210M	R.P	2.013
Barnes 200-gr. Spitzer	H322	36.5	Fed. 210M	R-P	1.932
Barnes 200 gr. Spitzer	N201		Fed. 210M		1,919
Hornady 200-gr. Spire Point	H322	36.0	Fed. 210M	R-P	2.013
Hornady 200-gr. Spice Point			CCI 250		• • • • • • • • • • • • • • • • • • • •
Hornady 200-gr. RN	H322	36.5	Fed. 210M	R-P	1,920
Hornady 200-gr. RN	N201	38.0	Fed. 210M	R-P	1,927
Sierra 200-gr. RN	H322	36.0	Fed. 210M	R-P	1,871
Hornady-250-gr. RN	H322	32.0	Fed. 210M	R-P	.1,691
Hornady 250-gr. RN	N201	34.5	Fed. 210M	R-P	1,731

GUNS & AMMO/FEBRUARY 1986 35



Loading the .35 Remington is easy; however, care must be taken in load development to watch for pressure signs. Both dies and components are readily available for .35 Ram.

#### 35 REMINGTON

specialty pistol for big-game hunting and metallic silhouette shooting.

Actually, Thompson/Center Arms has been offering barrels for its Contender pistol in .35 Remington chambering since it introduced the Super 14 barrel line, but a good many shooters, myself included, have been guilty of ignoring it. Actually, I haven't really ignored the .35 Remington. I worked with it extensively back in 1978, but at that time found it to have little if any advantage over the wildcat .357 Herrett. Today, all of this has changed, due in part to improvements in the locking system of the Contender, but more because of the advances in .357 and .358-inch bullets now available to handloaders.

However, I'll have to admit that my renewed interest in the .35 Remington in a handgun was prompted primarily by demands from handgun hunters for a commercial cartridge that they could use on big game-everything from deer through moose in size. There are any number of wildcats around for this purpose. I was directly involved in the development of one, the .357 Herrett. However, making wildcat pistol cartridges is an expensive, time-consuming and in many instances intricate process, and a good many hunters just don't want to get involved to this degree. What they're after is a cartridge they can buy commercially, use successfully just as it comes from the shelf, then reload for really top performance.

Believe it or not, the .35 Remington fits the bill better than any commercial cartridge presently available. Its case capacity is such that relatively fast-burning powder



is used in the factory loads, so factory-load velocity is reasonable from a short pistol barrel and the accuracy is excellent. In other words, the non-reloading handgun hunter can do very well using factory ammunition. And the handloader—well, he has such a selection of bullets and powders available to him that he can tailor his loads to perfectly fit any situation from deer hunting to moose hunting to metallic silhouette competition.

While the .35 Remington case is not as heavy and strong as, say, the .308 Winchester or .30-06, it's still strong and is capable of handling pressures well in excess of the 35,000 c.u.p. industry standard set for it. This relatively low pressure standard continued on page 69

Even with 200-grain bullets, the .35 Remington's case can be fully utilized for containment of powder.

The case of the .35 Remington is almost straight, with very little shoulder for headspacing, making perfect die adjustment imperative.



While the recoil of the heavier loads in the .35 Remington is rough, it's not overly punishing. Still, recoil is heavy enough that the shooter probably won't want to spend the afternoon shooting the .35 just for funl

COLINS & AMMO/FEBRUARY 1986

consinued from page 36

reflects the strength of the case itself. The Contender, the only handgun presently chambered for the .35 Remington, will handle a lot more pressure safely than will a good many of the lever guns chambered for the cartridge over the years.

The .35 Remington has a maximum case length of 1.920 inches and should be trimmed back to 1.910 inches. In my tests I found that the cases have a tendency to stretch rather quickly, so it's important that the handloader keep close tabs on case length. If the case is allowed to stretch beyond the 1.920-inch maximum, the mouth must be jammed into the throat where it can't expand properly to release the bullet when the round is fired. This results in excessively high breech pressure and sub-par accuracy. In the Contender, a long case also makes it difficult to completely lock the action closed.

While the shoulder angle of the .35 Remington is 23 degrees, 25 minutes, there is almost no shoulder area to work with owing to the diameter of the case body in relation to the diameter of the neck. At its most forward point, where the shoulder starts, the case body has a diameter of .425 inch. The proper outside neck diameter is .384 inch. In other words, there is just a .041-inch difference between body and shoulder. This is of concern to the handloader because in the Contender it's essential that the headspacing-the distance between the datum line of the shoulder and the standing breech-be perfect in order to guarantee reasonable case life. When sizing the case you must be very careful not to move the shoulder back. If you do the headspace is changed. What then happens is that the firing pin blow shoves the case forward in the chamber until the shoulder contacts its stop in the chamber. Then the cartridge fires. The case wall expands and grabs the chamber wall, but the solid head of the case is driven rearward by pressure until it contacts the standing breech. This movement is very slight, but it's enough that the case stretches at the web, forming a thin spot in the brass and the case will

IN MARCH:

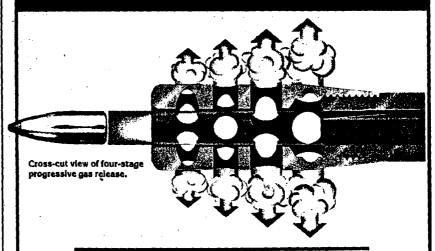
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### GUNS AND THE MEDAL OF HONOR

separate within the first two or three reloadings. Probably the best way to handle the headspacing of the .35 Remington is to start out with new cases. I like to use factory ammo, firing it in my pistol. Then I set my full-length sizing die so that sizing stops exactly at or just above, the shoulart/neck junction. In this way I'm not disturbing the shoulder, which, thanks to the continued on page 70

## REDUCE RECOIL 60-80%

WITH THE K.D.F. RECOIL ARRESTOR



## This is not just another muzzle brake or barrel porting system.

- The K.D.F. Recoil Arrestor the one that really works. Muzzle blast is diverted laterally to virtually neutralize gas induced recoil.
- No reduction in accuracy or velocity . . . . the bullet is in "free-flight" as the Recoil Arrestor does its work. There is no contact between the bullet and the Recoil Arrestor.
- The K.D.F. Recoil Arrestor may be installed on any bolt-action rifle. K.D.F. is establishing installation centers throughout the United States. Call for information on the one nearest you. Ship your rifle along with money order or certified check for \$149.00, or call for more information.



"If you are not completely satisfied with the K.D.F. Recoil Arrestor, we will remove it and refund your maney."

All Krew Phil Koehne

#### •NOTE•

Noise level is increased approximately 20% for the shooter, but the downrange noise is reduced proportionately with the K.D.F. Recoil Arrestor.

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"The Accuracy People"

2485 HWY, 46 NORTH SEGUIN, TX 78155 (512) 379-8141

For More Information, KDF, Inc. 2485-N. HWY 46, Seguin, TX 78155	STRA
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GUNS & AMMO/FEBRUARY 1986 69



### AT FIRES CHE GUN!

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Back-up Gun
Boot Gun
Tackle Box Gun
Ladies Purse Gun
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#### .35 REMINGTON

continued from page 69

initial firing being done in my pistol, is perfectly set for headspace.

As I mentioned, factory .35 Remington ammunition performs very well-in my Super 14 Contender. Using a 3X scope, I was able to get three-shot groups at 100 yards that averaged 11/4 inches with Federal 200grain factory ammo and 11/2 inches with Remington 150-grain fodder. The velocity of the Federal load from the Contender was 1,806 feet per second (fps) while the 150-grain Remington moved out at 1,934 fps. Neither of these are spectacular velocities, but nor are they bad considering the 14-inch barrel and excellent accuracy. And, in case it hasn't dawned on you, that 200-grain bullet from the Federal load is still moving at 1,500 fps at 100 yards and hits out there with just over 1,000 foot pounds of energy-about the same energy . as a 240-grain .44 Magnum load develops at the muzzlel

Handloading, though, really brings out the best of the .35 Remington in a handgun. The list of bullets that can be used successfully in the pistol is almost endless. While pistol bullets of .357-inch diameter shoot very well in my Contender, I recommend that soft point and hollow point designs be used only for small-game hunting and plinking. They're much too soft and thin-jacketed to be effective on even the smallest deer at .35 Remington velocities. Hit a buck with one of these and you'll likely get a nasty, superficial wound, but no penetration. However, .357-inch pistol bullets like the 180-grain Hornady JTC-SIL, 180-grain Sierra Full Profile Jacket and 180-grain Speer FMJ Flat Point are excellent choices for silhouette shooting.

The .35 Remington cartridge is designed for bullets of .358-inch diameter and with those weighing 180 grains or more; this cartridge in a 14-inch barreled pistol is a great choice for hunting big game. And even here you have quite a choice of bullet styles and weights. I see no reason why the 180-grain Speer Flat Nose shouldn't be an excellent choice for pronghorns and white-tails, both of which are small animals with fragile bone structures. But for mule deer, elk, black bear and moose, I'd prefer one of the excellent 200-grain bullets. Because most of my hunting is done where shots



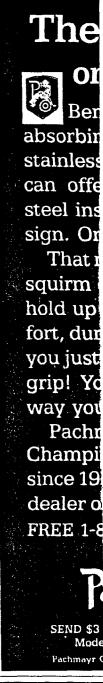
All of the author's accuracy testing of the .35 Remington/Contender was done from this bench fixture.

will come at 100 to 200 yards in relatively open country, I prefer pointed designs—the 200-grain Hornady Spire Point or the 200-grain Barnes spitzer. At under 100 yards on these animals, one of the 200-grain round nose bullets would be best. I did a little work with the 250-grain Hornady round nose bullet and was pleasantly surprised. I was able to push this heavyweight along at 1,700 fps and the accuracy with it was excellent.

The accompanying table gives all of the pertinent data on a variety of .35 Remington loads that worked well in my Contender Super 14 pistol. However, because there is no good pistol handloading data available for this cartridge, I was working in the dark on load development. When you go to faster-burning powders than those the bullet manufacturers have checked for pressure, you've got to be very careful. I used case head expansion, primer condition and ease of extraction as indicators to warn me when I was nearing maximum with the powder charges. However, even these can be wrong and they certainly apply only to my particular chamber. Therefore, I strongly recommend that you reduce the powder charges shown by 10 percent and work up very carefully in any other .35 Remington pistol. Chamber and barrel dimensions, temperature, humidity and bullet seating depth are all factors that influence chamber pressure, so a load that's safe in my Contender may be dangerous in another. The .35 Remington isn't a wildcat, but my loads for the pistol are certainly a departure from the norm so be careful when you load this cartridge for a pistol.

After doing a lot of work with the .35 Remington Contender, I'm convinced that the cartridge is the answer to the handgunner's prayer for a commercial cartridge for handgunning big game. As long as it's used in a pistol with a barrel at least 14 inches long, it's a better performer with bullets weighing over 180 grains than is the .357 Herrett, a cartridge Steve Herrett and I developed especially for 10-inch barreled guns. Smaller cartridges like the .357 Magnum and .357 Maximum aren't even in the same league as the .35 Remington when it comes to big game. Larger cartridges, like the commercial .358 Winchester and the wildcat .358 JDJ, are a little more powerful than the .35 Remington, but because they have powder capacities greater than can be utilized efficiently in short pistol barrels, you use a lot more powder and must endure considerably more recoil to realize only a slight velocity edge over the .35 Remington.

If all of this sounds like I'm impressed, you're right. For the good of the sport I think it's time we standardized on a few good cartridges for handgun hunting and the .35 Remington is perfect. It's already commercially available, it can be easily adapted to break-open, falling-block and bolt-action pistols, and it wouldn't be difficult for ammunition manufacturers to offer commercial loadings tailored specifically for handguns.







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combining equal parts by weight of resorcinol (technical or U.S.P. grade) and ethanol (95 percent or anhydrous commercial ethyl alcohol) and stirring or shaking at room temperature for 15-20 minutes. A 50-50 solution is convenient to prepare and gives some margin for the evaporation of ethanol in use. The concentration is not critical.

#### **DIRECTIONS FOR USE**

- 1. Thoroughly clean and dry both mating surfaces.
- Paint the solution generously on both surfaces with an ordinary, flat paint brush. The solution has a very low viscosity, and run-off from the painted surfaces is prevented by working the brush over the surfaces two or three times.
- 3. After 20-30 seconds, the two mating surfaces soften enough so that they cannot be wiped dry by a close fit. The generous application of solvent and the waiting period are necessary to ensure strong, tight joints. Longer waiting periods (up to 3 minutes) will generally improve joint strength.
- 4. After the softening period, press the mating surfaces together and clamp in place under light pressure for 10-15 minutes at which time the joint strength is adequate for light handling. The bond reaches workable strength in about 90 minutes and approaches full strength in 24 hours. As with aqueous phenol, curing can be accelerated by heating in a circulating air oven at 66°C (150°F) for 30 minutes.

Warning: See warning under aqueous phenoi.

#### Nylon-Bodied Calcium Chloride-Ethanol

This adhesive may be used in applications involving foods and potable water supplies. It is not corrosive or toxic and has no disagreeable odor. There is no danger of skin burns.

The recommended formulation for this solvent cement is 10 parts of ZYTEL® 101 NC-10, 22.5 parts calcium chloride and 67.5 parts ethanol. Add 22.5 parts calcium chloride (analytical reagent grade) to 67.5 parts ethanol (95 percent or anhydrous commercial ethyl alcohol) and shake for two hours or until the calcium chloride is dissolved. Filter through a fritted glass funnel to clarify the cloudy solution. Add 10 parts of ZYTEL® 101 NC-10, ground to pass a #10 screen and stir overnight. The

resultant solution is a clear, honey-like solvent cement that will last indefinitely.

Finely ground ZYTEL® 101 may be obtained from: LNP Corporation 412 King Street Malvern, PA 19355

#### DIRECTIONS FOR USE

- Paint the cement on the surfaces to be joined with a brush or cotton applicator.
- 2. After about 30 seconds, assemble the parts and hold under contact pressure.
- After 30 minutes, the joint can be lightly handled, but 24 hours are required to attain the full bond strength.

**Note:** This solvent cement is not hazardous and no special precautions need to be taken to prevent skin burns. It is especially useful for nylon resin applications where nontoxicity is desirable.

#### Nylon to Metals

A variety of thermosetting adhesives can be used to cement ZYTEL nylon resin to metals. The best bonding procedures are usually based on the manufacturers' instructions. An example of a bonding procedure is shown for "Phenolweld" #7.1

#### "Phenolweld" #71

- 1. Clean metal surface.
- 2. Apply resin to both surfaces.
- 3. Dry separately 1/4 hour at room temperature.
- 4. Clamp or press cemented surfaces together.
- 5. Press 1/2 hour at 144°C (300°F).

Examples of adhesives used for bonding ZYTEL nylon resin to a wide variety of substrates are listed below:

"Resiweld" 7004 – Nylon to wood, metal and leather "Resiweld" 7006 – Nylon to metal and vinyl stock H. B. Fuller Company 2400 Kasota Ave. St. Paul, Minnesota 55018 "Apco" 5363 Applied Plastics Co., Inc. 612 East Franklin Ave. El Segundo, CA 90245

<sup>&</sup>lt;sup>1</sup>Hardman, Inc., 600 Cortland St., Belleville, NJ 07019

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•	Description of New Products (Include I	mpact on Other P	roduct/Programs)	
•	VP-100 ,223 cal.	·	2 Re	w.26
	XP-100, .223 col. Boll contour same a	2 mm 6	whit	
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	Total Incremental	2281 2000	2281 2000	
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	Fult Book Incremental & Project Basis	\$ 91m	\$104m	
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	Increase in Working Capital	5M 288 m	317 M	
	<ul> <li>Net Return on Program Investment (Years 1 &amp; 3 only)</li> </ul>	13.5%	14.1 %	
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## NEW PRODUCT DEVELOPMENT REQUEST

Caliber addition to XP-100 line (.221 Fireball to be obsoleted)

Description of New Products (Include Impact on Other Product/Programs)

Model XP-100 .223 caliber

Bbl. contour same as 7MM Benchrest

DATE 3/22/85	DATE	3/22/85
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11.	Development Responsibility (Check One)	KResea	arch	F	roductio	n
III.	Development Schedule					
	Prototypes Available	3 Mos.	Inventor	y Establi	shed	
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	• Forecast Sales Volume (M Units)					
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	Full Book Incremental					
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	Research Expense Production Expense Permanent Investment Increase in Working Capital	\$28M				
	<ul> <li>Net Return on Program Investment (Years 1 &amp; 3 only)</li> </ul>					
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BARREL CONTOUR SAME AS 7MM.	BENCHREST.		
•	XP-100 .	223 CAL	3/22/
Build			
BUILD PROTOTYPES	6 @ \$1000 =		# 6000
VAREHOUSE GUNS FUR PARTS	4@#300 =		1200
TEST		AMMO	
ACCURACY - 5 GUNS	X 200 RDS =	1000 RDS	
BLOW UP STRENGTH (1G	(UN)		
FUNCTION		AMMO	<u> </u>
ENDURANCE - 2 GUNS X		5000 RDS	
MANX #27/HR X 3 WK5 X 4	10 HRS = #	3240	# 32610
ENGINEERING & DESIGN TI	,	4	# 110
$\frac{\sqrt{MRN} \times 3WKS \times 4}{MRN \text{ YEARS}} = \frac{120 \text{ HRS}}{2080} = \frac{1}{2080}$	"47/HR X 40 HRS	= "5640	\$ 5640
MAN YEARS = 2080	.05/7 = .00 MAN	yk5	<del></del>
AMMUNITION			
6000 RDS @ #1/RD	=		\$ 6000
		SUBTOTAL	# 22,080
		CONTINGENCY @ 25%	
			\$ 27,600
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			# 28,000
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CALIBER ADDITION TO ATTION LINE, ALL PIREDALL IN DE COSULETED.

RD-49-8

## REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Lele XP-100

Remington.

PETERS

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

cc: W.H. Coleman, II/File

T.C. Douglas

J.R. Snedeker

A.A. Hugick

F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT
REPORT# 862332
OCTOBER 14, 1986

MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

### MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

ABSTRACT:

The Test and Measurement Laboratory finds the Design Verification Test of the Model XP-100  $\,$  35 REM caliber to be acceptable. The testing consisted of 100 yard accuracy and endurance.

- 1. Four pistols were selected for the accuracy test, two each from the group size extremes recorded from previous Gallery testing. The accuracy was shot offhand by A.A. Hugick.
- 2. The endurance test consisted of the firing of 9000 rounds, 6000 rounds through one action, and 3000 rounds through another action. A total of six stocks were used in the endurance. Four stocks were subjected to 1000 rounds each, and the other two stocks were subjected to 2000 rounds each. Some minor seam separation was noted, at the front take down screw hole, at the 1000 and 1400 round levels; however, it was not enough to interfere with the function or the safety of the pistols. One stock was subjected to an additional 1000 factory rounds and 20 Proof rounds, to verify that the separation would not interfere with the function or the safety of the pistol.

Prepared by: F.L. SUPRY Date Prepared: 10/14/86

proofread and cleared by:

J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab

W.H. COLEMAN, II New Products Research Lab Director REP.#862332

W.O.# C-0801

#### MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

TO: J.R. Snedeker FROM: F.L. Supry

#### INTRODUCTION:

On August 21, 1986 a request to conduct a Design Verification Test on the Model XP-100 35 REM. caliber pistol was received by the Test Lab. The test would consist of endurance and accuracy testing. The purpose of the endurance test is to check the stocks joints. The purpose of the accuracy test is to compare the previous mechanical testing results to the offhand results.

SCOPE OF TEST:

To determine if the XP-100 chambered in the 35 REM. caliber, would meet Remington Specifications set by the Research Design Section.

TEST RESULTS:

The Model XP-100, chambered in the 35 REM. caliber, was found to be acceptable in all phases of the Design Verification Test.

#### REPORT TEXT:

#### 1. ACCURACY:

The Remington standard for the XP-100, chambered in the  $35\ \text{REM}$  caliber has not been established. The proposed standard is  $3.5\ \text{inch}$  group size at  $100\ \text{yards}$ .

A. Four (4) pistols were tested for 100 yard accuracy.

B7515993 B7510556 B7512645 B7516033

B. Using 200 grain Remington ammunition, the following 5 shot group size averages were shot:

a. Group Size: ACCURACY DEVICE OFFHAND

1.75 inches 3.41 inches

C. Using 150 grain Remington ammunition, the following 5 shot group size average was shot:

ACCURACY DEVICE OFFHAND
a. Group Size: Not Available 2.77 inches

D. Accuracy results (200 gr. and 150 gr.) per individual pistol are located in the appendix of this report. Since the shooter feels that it is easy to throw a shot in handgun accuracy, the results are given in the best of 5, 4, and 3 shot groups.

## 2. ENDURANCE:

A total of 9000 rounds were fired through 2 actions, 6000 on action #7513713, and 3000 on action #7506066. Six (6) stocks were tested, 4 stocks were shot 1000 rounds each, and 2 stocks were shot 2000 rounds each. Some minor separation was noted; however, it did not interfere with the function or safety of the pistols. One of the stocks, with 2000 rounds, was fired an additional 1000 factory rounds and 20 Proof rounds with no increase in the minor separation.

- A. 1000 ROUND LEVEL RESULTS:
  - a. At the 1000 round inspection, three stocks showed a small separation at the rear of the front take down screw hole, near the recoil lug.
- B. 2000 ROUND LEVEL RESULTS:
  - a. At the 1400 round inspection both stocks showed a separation at the front and rear of the front take down screw hole.

#### 2. ENDURANCE (continued)

- B. 2000 ROUND LEVEL RESULTS: (continued)
  - b. At the 2000 round inspection, the separation showed no increase.
- C. 3000 ROUND AND 20 PROOF ROUND LEVEL RESULTS:
  - a. There was no increase in the length of the separation.
  - b. The separation appeared to be due to the area being difficult to retain uniform adhesion during the assembly operation as opposed to a functional failure. Refer to report supplement.

#### TEST PROCEDURE:

#### 1. ACCURACY:

- A. The accuracy was shot by A. Hugick (Research) at the R & D 100 yard range. The pistols were held at the grip with the right hand, and at the stock, at the center of the barrel, with the left hand. The elbows were bent slightly, and the pistol was rested on a sandbag.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 2 1/2X long eye relief pistol scope.
- C. Remington ammunition, R35R1 (Code E24IC260L) 150 grain and R35R2 (Code B15RD5548) 200 grain, was used for the 100 yard accuracy test.
- D. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- E. A total of four (4), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- F. The patterns were analyzed for group size, horizontal spread, and vertical spread. The best of 5, 4, and 3 shot group averages were calculated for each pistol.
- G. A summary sheet was written and included in the appendix of this report.

TEST PROCEDURE: (continued)

#### 2. ENDURANCE:

- A. The endurance was shot by H. Weaver, D. Thomas, and F. Supry (Research) in the R&D shooting room.
- B. A stock was assembled to the action and the pistol placed in a shooting harness attached to a shooting jack.
- C. The stock was removed and inspected every 200 rounds.
- D. Action #B7506066 was used to endurance 3 stocks to 1000 rounds each. No malfunctions occurred during the firing of the 3000 rounds.
- E. Action #B7513713 was used to endurance 1 stock to 1000 rounds and 2 stocks to 2000 rounds each. No malfunctions occurred during the firing of 5000 rounds.
- F. A new recoil rest was fabricated, by Robert Howe, for the XP-100. This rest simulates hand holding of the stock and allows unrestricted travel of the assembly if total stock separation were to occur.
- G. Action #B7513713 and the new rest were used to endurance one of the 2000 round stocks to 3000 rounds, and to fire 20 Proof rounds through the stock after the 3000 round level.
- H. All the additional shooting was done by A. Hugick, and the inspections were done by F. Supry and A. Hugick.
- I. The stock with 3000 rounds was sectioned and examined for adhesion.
- J. A decision to accept the design of the XP-100 chambered in the 35 REM caliber was made after the final results were reviewed with W.H. Coleman, II.

APPENDIX

100 YARD ACCURACY

GALLERY ACCURACY DEVICE vs OFF HAND SHOOTING (BEST GROUPS)

		•		OFF HAND -	
SERIAL NUMBER	AMMO	GALLERY DEVICE	BEST 5	BEST 4	BEST 3
B7515993	200	2.0 INCHES	2.5 IN.	1.5 IN.	0.8 IN.
	150	N.A.	2.2 IN.	2.0 IN.	1.8 IN.
B7512645	200	1.5 INCHES	3.2 IN.	2.0 IN.	1.0 IN.
	150	N.A.	2.5 IN.	1.1 IN.	0.7 IN.
в7510556	200	2.0 INCHES	3.8 IN.	2.5 IN.	1.2 IN.
	150	N.A.	2.5 IN.	2.0 IN.	0.7 IN.
в7516103	200	1.5 INCHES	1.6 IN.	0.5 IN.	0.3 IN.
	150	N.A.	2.6 IN.	2.0 IN.	1.0 IN.

## INDIVIDUAL ACCURACY RESULTS

SERIAL NUMBER	AMMO	GROUP NUMBER	BEST 5	OFF HAND	BEST 3
в7515993	200	1	4.5 IN.	3.8 IN.	2.8 IN.
		2 1	2.5 IN.	1.5 IN.	0.8 IN.
	150	1	2.2 IN.	2.0 IN.	1.8 IN.
		2	3.5 IN.	3.1 IN.	2.0 IN.
B7512645	200	1	3.2 IN.	2.0 IN.	1.0 IN.
D7312043	200	2	5.1 IN.	2.9 IN.	1.8 IN.
	150	1	2.5 IN.	1.1 IN.	0.7 IN.
	150	2	2.5 IN.	2.1 IN.	1.2 IN.
B7510556	200		4.9 IN.	4.5 IN.	1.7 IN.
D/J10JJ0	200	2	3.8 IN.	2.5 IN.	1.2 IN.
	150	1	3.0 IN.	2.2 IN.	1.2 IN.
	130	2	3.7 IN.	2.0 IN.	0.7 IN.
shot at	and	3	3.1 IN.	2.2 IN.	2.0 IN.
of test	end	4	2.5 IN.	2.3 IN.	1.2 IN.
OI test		7	2.5 IN.	2.5 IR.	1.2 11.
в7516103	200	1	1.7 IN.	1.3 IN.	1.2 IN.
		2	1.6 IN.	0.5 IN.	0.3 IN.
	150	1	2.6 IN.	2.0 IN.	1.0 IN.
		2	3.3 IN.	1.9 IN.	1.3 IN.

#### TEST AND MEASUREMENT LAB SUPPLEMENT

DATE: 10/16/86

REPORT NO.: 862332 WORK ORDER NO.: C-0801

WRITTEN BY: F.L. SUPRY

TEST TYPE: SECTION AND EXAMINE XP-100 35 REM CALIBER STOCK

## REASON FOR TEST:

To examine the adhesion of the XP-100 35 REM stock.

#### **EQUIPMENT REQUIRED:**

The stock with 3000 rounds, a band saw, and personnel.

#### TEST PROCEDURE:

The stock was cut into six sections and labeled as follows:

- #1 5.75 inches, measured from the muzzle end of the stock.
- #2 2.80 inches, cutting through the trigger guard.
- #3 2.40 inches, cutting 1 inch beyond the front take down screw.
- #4 1.80 inches, cutting 0.25 inches in front of rear take down screw.
- #5 3.20 inches, from #4 cut to rear of stock.
- #6 3.50 inches, the grip, measured at the centerline, from the base.

Each section was examined by A. Hugick, R. Howe, and F. Supry.

#### TEST RESULTS :

The separation of the glued surfaces in section #3, was due to the area being difficult to retain uniform adhesives during the assembly operation, and not that of a functional failure.

There was no stock separation in any of the sections, except section #3 at the front take down screw hole. That separation was along the horizontal area of the hole and 0.9 inches down the vertical, stopping at the start of the horizontal area leading to the grip.

Section #3 was fractured to further examine the adhesion. The start of the horizontal leading to the grip was fused with a good glue joint; but, the glue in the vertical was very sparse.

RD-49-8

# REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE



PETERS

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"\_\_\_\_\_

cc: W.H. Coleman, II/File
J.W. Bower
T.C. Douglas
J.R. Snedeker
A.A. Hugick
F.L. Supry

RESEARCH TEST AND MEASUREMENT REPORT REPORT# 862332 OCTOBER 14, 1986

MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

#### MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

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Prepared by: F.L. SUPRY Date Prepared: 10/14/86

proofread and cleared by:

J.R. SNEDEKER, Research Supervisor Test, Measurement & Mech. Analysis Lab

W.H. COLEMAN, II New Products Research Lab Director REP.#862332

W.O.# C-0801

#### MODEL XP-100 35 REM. CALIBER DESIGN VERIFICATION

TO: J.R. Snedeker FROM: F.L. Supry

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SCOPE OF TEST:

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TEST RESULTS:

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#### REPORT TEXT:

#### 1. ACCURACY:

The Remington standard for the XP-100, chambered in the 35 REM caliber has not been established. The proposed standard is 3.5 inch group size at 100 yards.

A. Four (4) pistols were tested for 100 yard accuracy.

B7515993 H

B7510556

B7512645

B7516033

B. Using 200 grain Remington ammunition, the following 5 shot group size averages were shot:

ACCURACY DEVICE

OFFHAND

a. Group Size:

1.75 inches

3.41 inches

C. Using 150 grain Remington ammunition, the following 5 shot group size average was shot:

ACCURACY DEVICE

OFFHAND

a. Group Size:

Not Available

2.77 inches

D. Accuracy results (200 gr. and 150 gr.) per individual pistol are located in the appendix of this report. Since the shooter feels that it is easy to throw a shot in handgun accuracy, the results are given in the best of 5, 4, and 3 shot groups.

## 2. ENDURANCE:

A total of 9000 rounds were fired through 2 actions, 6000 on action #7513713, and 3000 on action #7506066. Six (6) stocks were tested, 4 stocks were shot 1000 rounds each, and 2 stocks were shot 2000 rounds each. Some minor separation was noted; however, it did not interfere with the function or safety of the pistols. One of the stocks, with 2000 rounds, was fired an additional 1000 factory rounds and 20 Proof rounds with no increase in the minor separation.

- A. 1000 ROUND LEVEL RESULTS:
  - a. At the 1000 round inspection, three stocks showed a small separation at the rear of the front take down screw hole, near the recoil lug.
- B. 2000 ROUND LEVEL RESULTS:
  - a. At the 1400 round inspection both stocks showed a separation at the front and rear of the front take down screw hole.

#### 2. ENDURANCE (continued)

- B. 2000 ROUND LEVEL RESULTS: (continued)
  - b. At the 2000 round inspection, the separation showed no increase.
- C. 3000 ROUND AND 20 PROOF ROUND LEVEL RESULTS:
  - a. There was no increase in the length of the separation.
  - b. The separation appeared to be due to the area being difficult to retain uniform adhesion during the assembly operation as opposed to a functional failure. Refer to report supplement.

#### TEST PROCEDURE:

#### 1. ACCURACY:

- A. The accuracy was shot by A. Hugick (Research) at the R & D 100 yard range. The pistols were held at the grip with the right hand, and at the stock, at the center of the barrel, with the left hand. The elbows were bent slightly, and the pistol was rested on a sandbag.
- B. Leupold bases (standard long action) and Leupold one (1) inch rings were used, in conjunction with a Redfield 2 1/2X long eye relief pistol scope.
- C. Remington ammunition, R35R1 (Code E24IC260L) 150 grain and R35R2 (Code B15RD5548) 200 grain, was used for the 100 yard accuracy test.
- D. Before shooting the 100 yard accuracy test, the bores on each pistol were brushed with Hoppe's No. 9 solvent and patched dry.
- E. A total of four (4), five (5) shot groups were shot with each pistol. The pistols were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.
- F. The patterns were analyzed for group size, horizontal spread, and vertical spread. The best of 5, 4, and 3 shot group averages were calculated for each pistol.
- G. A summary sheet was written and included in the appendix of this report.

TEST PROCEDURE: (continued)

#### 2. ENDURANCE:

- A. The endurance was shot by H. Weaver, D. Thomas, and F. Supry (Research) in the R&D shooting room.
- B. A stock was assembled to the action and the pistol placed in a shooting harness attached to a shooting jack.
- C. The stock was removed and inspected every 200 rounds.
- D. Action #B7506066 was used to endurance 3 stocks to 1000 rounds each. No malfunctions occurred during the firing of the 3000 rounds.
- E. Action #B7513713 was used to endurance 1 stock to 1000 rounds and 2 stocks to 2000 rounds each. No malfunctions occurred during the firing of 5000 rounds.
- F. A new recoil rest was fabricated, by Robert Howe, for the XP-100. This rest simulates hand holding of the stock and allows unrestricted travel of the assembly if total stock separation were to occur.
- G. Action #B7513713 and the new rest were used to endurance one of the 2000 round stocks to 3000 rounds, and to fire 20 Proof rounds through the stock after the 3000 round level.
- H. All the additional shooting was done by A. Hugick, and the inspections were done by F. Supry and A. Hugick.
- I. The stock with 3000 rounds was sectioned and examined for adhesion.
- J. A decision to accept the design of the XP-100 chambered in the 35 REM caliber was made after the final results were reviewed with W.H. Coleman, II.

APPENDIX

100 YARD ACCURACY

GALLERY ACCURACY DEVICE vs OFF HAND SHOOTING (BEST GROUPS)

				OFF HAND	
SERIAL NUMBER	AMMO	GALLERY DEVICE	BEST 5	BEST 4	BEST 3
В7515993	200 150	2.0 INCHES N.A.	2.5 IN. 2.2 IN.	1.5 IN. 2.0 IN.	0.8 IN. 1.8 IN.
B7512645	200 150	1.5 INCHES N.A.	3.2 IN. 2.5 IN.	2.0 IN. 1.1 IN.	1.0 IN. 0.7 IN.
В7510556	200 150	2.0 INCHES N.A.	3.8 IN. 2.5 IN.	2.5 IN. 2.0 IN.	1.2 IN. 0.7 IN.
B7516103	200 150	1.5 INCHES N.A.	1.6 IN. 2.6 IN.	0.5 IN. 2.0 IN.	0.3 IN. 1.0 IN.

## INDIVIDUAL ACCURACY RESULTS

				OFF HAND	
SERIAL NUMBER	OMMA	GROUP NUMBER	BEST 5	BEST 4	BEST 3
В7515993	200	1	4.5 IN.	3.8 IN.	2.8 IN.
		2	2.5 IN.	1.5 IN.	0.8 IN.
	150	1	2.2 IN.	2.0 IN.	1.8 IN.
		2	3.5 IN.	3.1 IN.	2.0 IN.
D7510//5	000	1	2 0 TM	0 O TN	1 0 TN
B7512645	200	1	3.2 IN.	2.0 IN.	1.0 IN.
	150	_	5.1 IN.	2.9 IN.	1.8 IN.
	150	1 2	2.5 IN.	1.1 IN.	0.7 IN.
		2	2.5 IN.	2.1 IN.	1.2 IN.
в7510556	200	1	4.9 IN.	4.5 IN.	1.7 IN.
		2	3.8 IN.	2.5 IN.	1.2 IN.
	150	1	3.0 IN.	2.2 IN.	1.2 IN.
		2	3.7 IN.	2.0 IN.	0.7 IN.
shot at end		3	3.1 IN.	2.2 IN.	2.0 IN.
of test		4	2.5 IN.	2.3 IN.	1.2 IN.
B7516103	200	1	1.7 IN.	1.3 IN.	1.2 IN.
1,510105	200	2	1.6 IN.	0.5 IN.	0.3 IN.
	150	1	2.6 IN.	2.0 IN.	1.0 IN.
	130	2	3.3 IN.	1.9 IN.	1.3 IN.
		4	J.J IN.	1.7 TM.	I . J III .

#### TEST AND MEASUREMENT LAB SUPPLEMENT

DATE: 10/16/86

T NO.: 862332 WORK ORDER NO.: C-0801

REPORT NO.: 862332
WRITTEN BY: F.L. SUPRY

TEST TYPE: SECTION AND EXAMINE XP-100 35 REM CALIBER STOCK

## REASON FOR TEST :

To examine the adhesion of the XP-100 35 REM stock.

#### EQUIPMENT REQUIRED:

The stock with 3000 rounds, a band saw, and personnel.

### TEST PROCEDURE:

The stock was cut into six sections and labeled as follows:

- #1 5.75 inches, measured from the muzzle end of the stock.
- #2 2.80 inches, cutting through the trigger guard.
- #3 2.40 inches, cutting 1 inch beyond the front take down screw.
- #4 1.80 inches, cutting 0.25 inches in front of rear take down screw.
- #5 3.20 inches, from #4 cut to rear of stock.
- #6 3.50 inches, the grip, measured at the centerline, from the base.

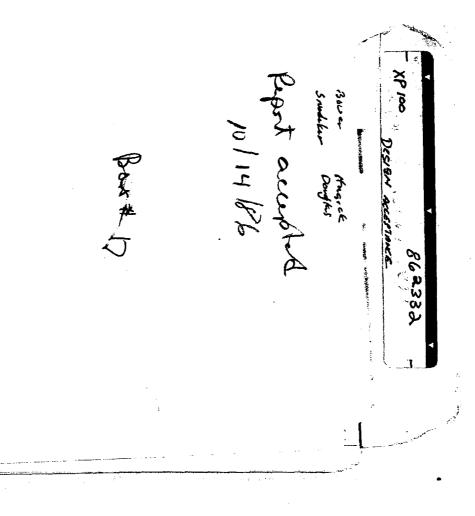
Each section was examined by A. Hugick, R. Howe, and F. Supry.

#### TEST RESULTS :

The separation of the glued surfaces in section #3, was due to the area being difficult to retain uniform adhesives during the assembly operation, and not that of a functional failure.

There was no stock separation in any of the sections, except section #3 at the front take down screw hole. That separation was along the horizontal area of the hole and 0.9 inches down the vertical, stopping at the start of the horizontal area leading to the grip.

Section #3 was fractured to further examine the adhesion. The start of the horizontal leading to the grip was fused with a good glue joint; but, the glue in the vertical was very sparse.



	Aug. 21, 86
	XP-100 35 REM DESIGN TEST
	THESE XPIOD 35 REM BOLT ALTION PISTOLS
	MAYBE USED FOR WRITER SEMINAR GUNS
	AND OR ILION SITE DEER HUNTING FIELD
	TEST GUNS. PLEASE HANDLE WITH CARE.
	THANKS.
***************************************	
	THE 35 REM IS AN ADDITIONAL CALIBER TO
	EXISOMT XP 100 PRODUCT LING
444	PROPOSED TEST AREA CONSIDERATION AS ULEWOR
	From DESIGNO
	I. HEADSPACE - MIN. AND MAX.
	THE LAB GAGES ARE LOCATED IN CUSTON
	SHOP (WAYND CABCO) AND WERE COANED
	TILL THEIR GAGES WERE READIEDO
	II. ACCURACY - FIRE TWO FIVE SHOT GROUP PEX
	GUW, SCOPED, From A BENCH AV
	ALCONTAIGET.
	(X) ONE BROUP WITH RISO
	DONE GROUP WITH RZOO.
	DO NOT PUT TARGET ON COMPATON-
	INSTERO READ THE FIVE SHOT GLOUD SIZE
	BEST POUR SHOTS IN GROUP, AND BEST THREE
	•

 SHOTS IN GAOUP.
NOTE MALFUNCTION EXPERIENCED WHILE SHOOTING ACCURACY.
THE SECECT A BEST GROUPER AND A WORST GROUPER AND FIRE ACCURACY WITH WIND AND FED. 35 Rom CALIBER Ammos
TIVO STOCK JOINT ENDURANCE FIRE ONE GUN TO A 1000 Round
PEACEN SOFT RECOIL RESTO INSPECT
STOCK JOMT EVERY 200 BOWRDS FOR  ELUR BOND PAICURES. RECOND AND  MARKER PER MAICARE SEPERATION LENGTHS
EXPEN 1 EL CEPO
NOTE MACFUNCTIONS EXPENSENCED WAIL SHOOTING ACCURACY.
STOCK JOM T SERENATION MAY FINGE OCCUR.  FRONT  OR NEAR STOCK SCREW LOCATION MASIA
 OF STOCK, ADJACENT TO RECOIL LUG.

	FUTURE OR CONTINGAT TOST ALTIUSY
····	MAY POLLOW WITH THE FOLLOWING.
	BLACK EXPERIMENTAL ST801 (ST SUPERTURA
	ZYTER STOCK MATERIAL.
	· NYLON BODIED CACICUM CLORIDE ETWAN
	ADHESIUE - SOCUENTO THIS MATERIAL
	15 NON-TOXIC WHILE PHENDWERD 13POD
	* TRONSIGHTS - FIT, POI/POA, APJUS
	@ MAENA PONTING -
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## SPECIAL TEST REPORT

MODELXP	100 3	5		SHOOTER	A 1.31			[	PATE 808	360
Gun	Ga./		Не a,	vy Jac			Li	ght	Jack	
No.	Cal.	Rds.	Type	Resi	ılts	Rds.	Type		Results	
6066	35	5	200	20	ACTION 4	EO IN	ENDA	RANCE	(D, O, 3)	
4009 V		بهر د		2.7	y 510c	العبط	in end	vara (3	S)	
43/1 /		1.	V	1.5					•	
6018 V		1		1.5						
5993 V		V		2.0						
055 6 V				20					·.	
37/3 ×				2.5	ACTION 45ED	) IN A	NOURA	NCE G	), 3,6	··
6033 V				1.5						
2645 1				1.5		<u>                                     </u>			····	<del></del> -
3 76 V		-		1.5	·					
0477 V				1.7						·····
0588 v				1.5	<u> </u>	stack 4	هوط اء	Endurar	ce (2)	
	_			1.5	····					
3226 V				1.5						
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SERIAL NUMBER	CALIBER NOTES
B7570477 +	308 WILL -
B7516103 3 (NOT HELD)	223 Rem
B7514311- <del>2</del>	308 WIN -
87510556 <del>D</del>	223-REM -
87506033 <del>0</del>	NONE CISPER
B75/4009 7	223 REM -
	308 Win -
87509847. SCEAF-RETU	
B7505993 👽	221 REM SHEELER
	308 Win / -
B7506018 9-	7mm BRROM -
	308 WIN / -
	7 Tom-08 Ban -
	308 WIN -
B7506066 7	7mm Ms / -
? 0588 -cure	MOT Act.
TOTAL COUNT = 15	Eurs
$\sqrt{}$	V
ABOUR XPIOD INN	entory is schepuled for
	HAT OR 35 REM FOR
	FIRED TAST, AND SPORTS
	THIS WILL TAKE PLACE
	Inuton-Icion Custon Gun
	MAYBE LIGHT WEIGHT AND
	WILL BE PREPAREA SUCIO THAT
	ELL SEPSON CON BE P 76>V
	OR PRODUCT DESIGNO AND

36 REM CHAMBERS

FRONT SIGHT / SUCHT HELE

PROPT & DECRE